

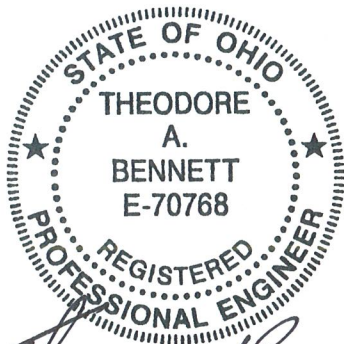
Project Manual for

Richland County, Ohio

Lift Station 39 Generator Improvements



2022



Theodore A. Bennett
4/7/22



Paul Edward McNichol
4/7/22



Jones & Henry
ENGINEERS, LTD.

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Toledo, Ohio 43606
419.473.9611

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**991-7898.001
2022**

**Richland County, Ohio
Lift Station 39 Generator Improvements**

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IF ANY OF THE PAGES LISTED ABOVE ARE NOT INCLUDED IN THESE CONTRACT DOCUMENTS, PLEASE ADVISE.

END OF SECTION

LEGAL NOTICE

Sealed bids will be received by the Board of Commissioners for Richland County Ohio until 10:30, am, local time, on Thursday, July 14, 2022, at the Richland County Commissioners Office, 50 Park Ave. East, Mansfield, OH 44902, for all labor, material, and services necessary for 39 Lift Station Generator Improvements, as more fully described in the Contract Documents. Bids received after this time will not be accepted. Bids will be opened publicly and read immediately thereafter.

Subject to the right of the Owner to reject any or all bids, the Owner will award contracts to the bidder(s) submitting the lowest and best bid(s). Direct questions about the Project to Theodore Bennett, P.E. at Jones & Henry Engineers, Ltd. at 3103 Executive Parkway, Suite 300, Toledo, OH 43606, tbennett@jheng.com, no later than Friday July 8, 2022 at 10:30 AM.

Copies of Bidding Documents and Contract Documents may be obtained electronically from Newfax Corporation, Phone 419-241-5157, www.newfaxcorp.com. A non-refundable fee will be required for each set of Bidding and Contract Documents by Newfax Corporation payable to Newfax Corporation.

All bids must be accompanied by a Bid Guaranty in the form of either a Bid Guaranty and Contract Bond for the full amount of the bid or a certified check, cashier's check, or an irrevocable letter of credit in an amount equal to 10% of the bid, as described in the Instructions to Bidders. This is a state prevailing wage project.

No Bidder may withdraw its bid within sixty (60) days after the bid opening. The Owner reserves the right to waive irregularities in bids, to reject any or all bids, and to conduct such investigation as necessary to determine the lowest and best bidder for each contract. This notice will also be posted on the Richland County website, www.richlandcountyoh.gov and may be accessed through the Commissioners' page under current bids.

All bids shall be enclosed in a sealed envelope and addressed to the Richland County Board of Commissioners, 50 Park Avenue East, Mansfield, Ohio 44902 and clearly marked on the outside. **39 LIFT STATION IMPROVEMENTS.**

Ad date: June 14, 2022

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 included in the Project Manual (e.g., 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;
 - (b) other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

- (c) 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. OWNER & DESIGN PROFESSIONAL

1. The Owner is:

Richland County Board of Commissioners
Telephone: 419-774-4002
Fax: [REDACTED]

The Owner's Representative is Amanda Miller.

2. The Design Professional (referred to as the "Design Professional" or "Engineer" in the Contract Documents) is:

Jones & Henry Engineers, Ltd.
Telephone: 567-661-0265
Fax: [REDACTED]

The Design Professional's Representative is Theodore A. Bennett, P.E.

D. PROJECT

1. The Project and Work for the Project consists of all labor, materials, equipment, and services necessary for Lift Station 39 Generator Improvements (the "Project"), all in accordance with the Drawings and Specifications prepared by the Design Professional. The Project will be substantially complete as listed in Section Q of this document.

E. WORK

1. The Project consists of the installation of a new permanent generator and automatic transfer switch:
Individual bid package estimates are provided for the Bidder's information only.

F. 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 \$110,000.00.

G. CONTRACT DOCUMENTS

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

Copies of Bidding Documents and Contract Documents may be obtained electronically from Newfax Corporation, Phone 419-241-5157, www.newfaxcorp.com. A non-refundable fee will be required for each set of Bidding and Contract Documents by Newfax Corporation payable to Newfax Corporation.

A complete set of the Contract Documents is available for examination, without charge, at the following locations during normal business hours:

Richland County Board of Commissioners

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.

H. PREPARATION OF BIDS

1. All bids must be submitted on the Bid Form furnished with the Contract Documents.
2. Fill in all blank spaces, in ink or typewritten, in words and figures, and in figures only where no space is provided for words: sign the Bid Form. 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 both numbers and words are requested for any bid item, the amount in words shall prevail if there is an inconsistency between the numbers and words written.
3. Bidders shall note receipt of all 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 in any material manner.
4. Each Bidder shall submit the following number of copies of its bid to the Owner: Richland County Board of Commissioners. 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 and delivered 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: Office of the Richland County Board of Commissioners, Ohio 50 Park Ave. East, Mansfield, OH 44902. The Bidder shall be responsible for delivering its Bid to this office and address for the bid opening before Thursday July 14, 2022, at 10:30 a.m. (local time).

If the Bidder is using a third party, e.g., Federal Express, to deliver its bid, the Bidder must comply with this provision by including on the outside packing envelope the foregoing information (i.e., the Bidder's name, the title of the Project, and the following phrase: "this package contains a bid – deliver immediately"). This information shall be printed in the upper left hand corner of the envelope.

6. The completed Bid Form shall be accompanied by the following documents:
 - a. Bid Guaranty (see Paragraph H.8 below).
7. The Bidder shall take the following precautions in preparing its bid:
 - a. Sign the bid and check to insure all blank spaces have been filled in with requested information and the specified accompanying documents (listed in Item 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 Item 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 should equal the total of the base bid and all add alternates included. If an amount is inserted, the failure to state an amount equal to or greater than the total of the base bid and all add alternates that are accepted shall make the bid non-responsive.
 - 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.
 - g. Combination Bids. The Owner may provide the option of submitting a combination bid on the Bid Form.
 - (1) When there is an option for submitting a combination bid on the Bid Form, a Bidder desiring to submit a combination bid for two or more bid packages shall include both of the following on the Bid Form:
 - (a) **the combination bid amount in the space provided, identifying the bid packages included in the combination bid amount; AND**
 - (b) **separate base bids for each bid package, including alternates, included in the combination bid in the places provided on the Bid Form for the individual bid packages.**
- NOTE: The individual cost amounts of each base bid need not total the combination bid amount.**

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 Contract 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. The Bid amount shall be the total of all sums bid, including all add alternates with no deduction for any deduct alternates. **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 (including all alternates), shall furnish a Contract Bond using the Contract Bond form included in the Contract 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 ("Surety") 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-" 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 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, address, and telephone and fax numbers of the Surety and the Surety's Agent should be typed or printed on each bond.

I. 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. The Owner will award a single contract for each of the bid packages listed above or one or more combined contracts for combinations of the Bid Packages, unless it determines to reject one or more bid packages. 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 Bidder Submitting 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 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 Bidder submitted the lowest and best bid or which Bidders submitted the lowest and best bids 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 may consider the Bidder's prior experience on other projects with the Owner and 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.

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 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 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. Within three (3) business days after the Owner's identification of the apparent low bidder, if requested, the apparent low bidder will complete and submit to the Design Professional a completed Contractor's Qualification Statement (using the form included in the Project Manual), and thereafter will provide the Design Professional with such additional information as the Design Professional may request regarding the Bidder's qualifications. Additionally, upon request from the Design Professional, any other Bidder will promptly complete and submit to the Design Professional a completed Contractor's Qualification Statement and thereafter will provide the Design Professional with such additional information as the Design Professional may request regarding the Bidder's qualifications. A Bidder will submit any requested information within three (3) business days of the date of the request.
 5. The failure to submit requested information on a timely basis may result in the determination that the Bidder is not the lowest and best bidder.
 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. Within three (3) business days of receipt of the bids or such longer time as may be permitted in writing by the Design Professional, the apparent low Bidder will submit a list of all proposed Subcontractors and Suppliers.

After approval by the Owner and Design Professional of the list of proposed Subcontractors, Suppliers, and manufactures submitted by the successful Bidder, 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. Declaration of Material Assistance. Each successful bidder shall complete the Declaration of Material Assistance/Nonassistance to a Terrorist Organization form ("Declaration Form") issued by the Ohio Department of Public Safety, Division of Homeland Security. A copy of the Declaration Form is included with the Contract Documents.
10. 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.
11. 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.
12. Award of Contract. The award of the Contract, when required, will only be made pursuant to a duly adopted resolution of the Owner.

J. 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.

K. 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 ten (10) 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.

L. 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.

M. UNIT PRICES

1. Where unit prices are requested in the Bid Form for a Prime Contract on which the Bidder submits a bid, 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.

N. 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.

O. 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. 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.

P. 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.

Q. DATE FOR SUBSTANTIAL COMPLETION/LIQUIDATED DAMAGES

1. Date for Substantial Completion. Each successful Bidder shall have its Work on the Project Substantially Complete (as Substantial Completion is defined in the Contract Documents) by the following date or within the Contract Time, as applicable to the Bidder's scope of work:

Contract	Contract Time
	<u>470 days</u>

The Contract Time shall run from the date of the Notice to Proceed or if there is no Notice to Proceed from the Effective Date of the Owner- Contractor Agreement. The Date for Substantial Completion Date and the Contract Time may be extended only by Change Order, by other Modification, or by a Claim that is Finally Resolved. **By submitting its Bid, each Bidder agrees that the period for performing its Work is reasonable.**

2. Liquidated Damages. If the successful Bidder does not have its Work Substantially Complete by its Date for Substantial Completion and/or Finally Complete within forty-five (45) days of achieving Substantial Completion, whichever may be applicable, the successful Bidder shall pay the Owner and the Owner may set off from amounts otherwise due the successful Bidder Liquidated Damages. The daily amounts of Liquidated Damages are set forth in the tables included in the Owner-Contractor Agreement. The total amounts of Liquidated Damages will be calculated based on the total number of calendar days beyond the Date for Substantial Completion that the Bidder's Work is not Substantially Complete and/or to the extent that its Work is not Finally Complete more than forty-five (45) after the Substantial Completion of its Work, i.e., number of late days times the per diem rate(s) for Liquidated Damages in the tables. In addition to such Liquidated Damages, the Bidder shall indemnify, defend, and hold the Owner and its employees and agents harmless from any and all claims, whether or not such claims are proven, and from all costs and expenses incurred as a result of such claims, including but not limited to attorneys' and consultants' fees and expenses, that arise out of or are related to the Bidder's failure to Substantially Complete its Work by its Date for Substantial Completion. The Bidder's obligations under this Section are joint and several.

3. The Bidder acknowledges and agrees, by submitting its bid for the Work and entering into a Contract with the Owner, 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 Bidder's Work is not Substantially Complete by its Date for Substantial Completion and/or not Finally Complete by forty-five (45) days of the Date of Substantial Completion. The Bidder further acknowledges, agrees and understands that it may seek an extension of the Contract Time (and its Date for Substantial Completion) to avoid or reduce Liquidated Damages by properly following the Claim procedures in the Contract Documents.

R. 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.

S. 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 Legal Notice. 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.

T. 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.

U. 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.

V. PREVAILING WAGES

1. For "Construction" projects as defined in Section 4115.03 of the Ohio Revised Code, 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, for such "Construction Projects," the successful Bidder will comply with all other provisions of Chapter 4115 of the Ohio Revised Code.
2. The Bidder to whom the Contract is awarded will be required to pay as a minimum, the prevailing wage rates, current throughout the work, promulgated by the State Wage rates.

W. RESERVED

X. CONDITIONS OF AWARD AND BIDDER'S CERTIFICATIONS

- A. As a condition precedent to contract award after bid, Owner shall undertake with bidder a "Constructibility" and Scope review on projects of one hundred thousand dollars (\$100,000) or more, at the discretion of the Owner, to verify that bidder included all required work.
- B. The Low Bidder whose bid is more than twenty percent (20%) below the next lowest bidder shall list three (3) projects that are each within seventy-five percent (75%) of the bid project estimate for similar projects and that were successfully completed by the bidder not more than five (5) years ago. This information shall be provided, if necessary, at the post-bid scope review.
- C. By signing the bid form, the bidder acknowledges the materiality and certifies as to the truth of the following representations pertaining to certain qualitative criteria:

1. Bidder certifies that Bidder provides a minimum health care medical plan for those employees working on this project.
2. Bidder certifies that Bidder contributes to an employee pension or retirement program for those employees working on this project.
3. Bidder certifies that Bidder only uses skilled trade personnel trained or enrolled in a state or federally approved apprenticeship program or personnel with five (5) years' of experience in the specific trade. Skilled trade is defined as those individuals in mechanical, electrical, plumbing, carpentry, and fire suppression trades. The labor classification is excluded, as there is no current apprenticeship program for this classification.
4. Bidder certifies that Bidder will employ supervisory personnel on this project that have three (3) or more years in the specific trade and/or maintain the appropriate state license, if any.
5. Bidder certifies that Bidder has not been penalized or debarred from any public contracts for falsified certified payroll records or any other violation of the Fair Labor Standards Act in the last five (5) years.
6. Bidder certifies that Bidder has not been debarred from public contracts or found by the state (after all appeals) to have violated prevailing wage laws more than three times in a two-year period in the last ten years.
7. Bidder certifies that Bidder has implemented an OSHA compliant Safety Program and will provide evidence of such upon request.
8. Bidder certifies that Bidder maintains a substance abuse policy that its personnel are subject to on this project. Bidder will provide this policy or evidence thereof upon request.
9. Bidder for a skilled trade contract or fire safety contract certifies that Bidder is a state licensed heating, ventilating, and air conditioning contractor, refrigeration contractor, electrical contractor, plumbing contractor, or hydronics contractor or licensed by the State Fire Marshal.
10. Bidder certifies that Bidder's construction license has not been revoked in any state.
11. Bidder certifies that Bidder has no final judgments against it that have not been satisfied at the time of award in the total amount of fifty percent (50%) of the bid amount of this project.
12. Bidder certifies that Bidder has complied with unemployment and workers compensation laws for at least the nine months preceding the date of bid submittal.
13. Bidder certifies that Bidder does not have an Experience Modification Rating of Greater than 3.0 (a penalty-rated employer) with respect to the Bureau of Workers' Compensation risk assessment rating.

14. Bidder certifies that Bidder for a skilled contract (i.e., plumbing, electrical, HVAC, or fire safety) will not subcontract greater than seventy-five percent (75%) of its awarded contract.

Y. QUESTIONS REGARDING BID DOCUMENTS

1. All questions shall be submitted by e-mail to Theodore Bennett, P.E. at Jones & Henry Engineers, Ltd. at 3103 Executive Parkway, Suite 300, Toledo, OH 43606, tbennett@jheng.com, no later than Friday July 8, 2022 at 10:30 A.M.

Z. AMERICAN RESCUE PLAN ACT (ARPA) FUNDING REQUIREMENTS

1. This procurement is governed by the requirements of the ARPA. Pertinent requirements are provided in the section titled ARPA Exhibit preceding the technical specifications.
2. The Bidder are required to supply the required Affirmations included in the ARPA Exhibit with their bid.
3. The Owner and Engineer will perform a sam.gov search on the bidder and subcontractors prior to award of the Contract.

END OF INSTRUCTIONS TO BIDDERS

BID FORM

1.01 BID SUBMITTED BY:

(Contractor)
Date bid submitted: _____

1.02 DELIVER TO:

Richland County Board of Commisioners

Attention: _____

1.03 Having carefully reviewed the Instructions to Bidders, Drawings, Specifications and other Contract Documents for the Project entitled Lift Station 39 Generator Improvements 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 and confirmed the location of the site utilities and all existing structures, 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 Notice to Bidders, 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 (EJCDC C-700, 2002) (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 substantially 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.

2.01 BID:

Include the cost of all labor and material for the contracts 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 deletion from the base bid amount (if there is no indication whether the amount for an alternate is an addition or a deletion, the amount shall be a deduction).

Item 1: Generator Improvements – BASE BID

ALL LABOR AND MATERIALS for the sum of \$ _____

(Bid amount stated in words)

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 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 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, including the 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 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 not 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 the 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 is the best bidder 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.
12. The Bidder attests to all items to be certified by the Bidder in Paragraph X of the INSTRUCTIONS TO BIDDERS.

Address

END OF SECTION

**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 **Richland
County Board of Commisioners**, as obligee in the penal sum of the dollar amount of the bid submitted by
the principal to the obligee on _____, 200__, to undertake the construction of _____
_____ **[insert bid package numbers or type of
work]** related to the **Lift Station 39 Generator Improvements** 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 _____, 200__.

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 _____, 200__.

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 **Richland County Board of Commisioners** ("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 _____, 200__, enter into a contract with the Owner for _____ related to **Lift Station 39 Generator Improvements** ("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 _____, 200__.

(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: _____

CONTRACTOR'S QUALIFICATION STATEMENT

SUBMITTED TO: _____

_____, Ohio _____

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:
 - 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 initiated any Claims, had any Claims initiated 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.

- 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 Engineer, 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 _____, 200__.

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

DECLARATION REGARDING MATERIAL ASSISTANCE/NONASSISTANCE TO A TERRORIST ORGANIZATION

Background:

Effective April 14, 2006, the Ohio Terrorism Act prohibits any political subdivision in the State from doing business with, or providing funding to, any person, group or company that “provides material assistance to” any organization listed on the “United States Department of State Terrorist Exclusion List.” Any bidder awarded a contract for a Project with a public owner must complete the Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization form (“Declaration Form”) issued by the Ohio Department of Public Safety, Division of Homeland Security and provide it to the public owner with the signed contract.

If a bidder who is awarded a contract answers “yes” to any question or fails to answer a question on the Declaration Form, the bidder will be deemed to have given a disclosure that it has provided material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion list, and the award of the contract to the bidder by the public owner will be deemed null and void.

Included with the Bidding Documents for the Project is the Declaration Form. Also included is a copy of the United States Department of State’s Terrorist Exclusion List, which the Owner is required to provide to the Contractor and which was issued by the Ohio Department of Public Safety in April 2006.

Requirements:

1. Review the United States Department of State Terrorist Exclusion List included in the Project Manual. Check the following webpage for the most current list: <http://www.homelandsecurity.ohio.gov/dma.asp>
2. Complete the Declaration Form included with the Project Manual for the Project.
3. Return the completed Declaration Form to the Owner with the signed contract, or as otherwise directed.
4. Failure to complete and return the Declaration Form in the required manner will render the contract awarded by the Owner void. The Owner is required to forward any improperly completed form to the Ohio Department of Public Safety’s Division of Homeland Security.

Attachments:

1. Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization Form
2. United States Department of State Terrorist Exclusion list



Ohio Department of Public Safety
Division of Homeland Security
<http://www.homelandsecurity.ohio.gov>

GOVERNMENT BUSINESS AND FUNDING CONTRACTS

In accordance with section 2909.33 of the Ohio Revised Code

DECLARATION REGARDING MATERIAL ASSISTANCE/NONASSISTANCE TO A TERRORIST ORGANIZATION

This form serves as a declaration of the provision of material assistance to a terrorist organization or organization that supports terrorism as identified by the U.S. Department of State Terrorist Exclusion List (see the Ohio Homeland Security Division website for a reference copy of the Terrorist Exclusion List).

Any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided. Failure to disclose the provision of material assistance to such an organization or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree.

For the purposes of this declaration, "material support or resources" means currency, payment instruments, other financial securities, funds, transfer of funds, and financial services that are in excess of one hundred dollars, as well as communications, lodging, training, safe houses, false documentation or identification, communications equipment, facilities, weapons, lethal substances, explosives, personnel, transportation, and other physical assets, except medicine or religious materials.

LAST NAME		FIRST NAME		MIDDLE INITIAL
HOME ADDRESS				
CITY	STATE	ZIP	COUNTY	
HOME PHONE		WORK PHONE		

COMPLETE THIS SECTION ONLY IF YOU ARE A COMPANY, BUSINESS OR ORGANIZATION

BUSINESS/ORGANIZATION NAME				
BUSINESS ADDRESS				
CITY	STATE	ZIP	COUNTY	
PHONE NUMBER				

DECLARATION

In accordance with division (A)(2)(b) of section 2909.32 of the Ohio Revised Code

For each question, indicate either "yes," or "no" in the space provided. Responses must be truthful to the best of your knowledge.

- Are you a member of an organization on the U.S. Department of State Terrorist Exclusion List?
 Yes No
- Have you used any position of prominence you have with any country to persuade others to support an organization on the U.S. Department of State Terrorist Exclusion List?
 Yes No

GOVERNMENT BUSINESS AND FUNDING CONTRACTS - CONTINUED

3. Have you knowingly solicited funds or other things of value for an organization on the U.S. Department of State Terrorist Exclusion List?
 Yes No
4. Have you solicited any individual for membership in an organization on the U.S. Department of State Terrorist Exclusion List?
 Yes No
5. Have you committed an act that you know, or reasonably should have known, affords "material support or resources" to an organization on the U.S. Department of State Terrorist Exclusion List?
 Yes No
6. Have you hired or compensated a person you knew to be a member of an organization on the U.S. Department of State Terrorist Exclusion List, or a person you knew to be engaged in planning, assisting, or carrying out an act of terrorism?
 Yes No

In the event of a denial of a government contract or government funding due to a positive indication that material assistance has been provided to a terrorist organization, or an organization that supports terrorism as identified by the U.S. Department of State Terrorist Exclusion List, a review of the denial may be requested. The request must be sent to the Ohio Department of Public Safety's Division of Homeland Security. The request forms and instructions for filing can be found on the Ohio Homeland Security Division website.

CERTIFICATION

I hereby certify that the answers I have made to all of the questions on this declaration are true to the best of my knowledge. I understand that if this declaration is not completed in its entirety, it will not be processed and I will be automatically disqualified. I understand that I am responsible for the correctness of this declaration. I understand that failure to disclose the provision of material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List, or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree. I understand that any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided by myself or my organization. If I am signing this on behalf of a company, business or organization, I hereby acknowledge that I have the authority to make this certification on behalf of the company, business or organization referenced on page 1 of this declaration.

X

Signature

Date

OHIO DEPARTMENT OF PUBLIC SAFETY
Division of Homeland Security

Terrorist Exclusion List

As of July 20, 2006

U.S. Department of State List of Designated Foreign Terrorist Organizations

1. Abu Nidal Organization (ANO)
2. Abu Sayyaf Group
3. Al-Aqsa Martyrs Brigade
4. Ansar al-Islam
5. Armed Islamic Group (GIA)
6. Asbat al-Ansar
7. Aum Shinrikyo
8. Basque Fatherland and Liberty (ETA)
9. Communist Party of the Philippines/New People's Army (CPP/NPA)
10. Continuity Irish Republican Army
11. Gama'a al-Islamiyya (Islamic Group)
12. HAMAS (Islamic Resistance Movement)
13. Harakat ul-Mujahidin (HUM)
14. Hizballah (Party of God)
15. Islamic Jihad Group
16. Islamic Movement of Uzbekistan (IMU)
17. Jaish-e-Mohammed (JEM) (Army of Mohammed)
18. Jemaah Islamiya organization (JI)
19. al-Jihad (Egyptian Islamic Jihad)
20. Kahane Chai (Kach)
21. Kongra-Gel (KGK, formerly Kurdistan Workers' Party, PKK, KADEK)
22. Lashkar-e Tayyiba (LT) (Army of the Righteous)
23. Lashkar i Jhangvi
24. Liberation Tigers of Tamil Eelam (LTTE)
25. Libyan Islamic Fighting Group (LIFG)
26. Moroccan Islamic Combatant Group (GICM)
27. Mujahedin-e Khalq Organization (MEK)
28. National Liberation Army (ELN)
29. Palestine Liberation Front (PLF)
30. Palestinian Islamic Jihad (PIJ)
31. Popular Front for the Liberation of Palestine (PFLP)
32. PFLP-General Command (PFLP-GC)
33. al-Qa'ida
34. Real IRA
35. Revolutionary Armed Forces of Colombia (FARC)
36. Revolutionary Nuclei (formerly ELA)
37. Revolutionary Organization 17 November
38. Revolutionary People's Liberation Party/Front (DHKP/C)
39. Salafist Group for Call and Combat (GSPC)
40. Shining Path (Sendero Luminoso, SL)
41. Tanzim Qa'idat al-Jihad fi Bilad al-Rafidayn (QJBR) (al-Qaida in Iraq) (formerly Jama'at al-Tawhid wa'al-Jihad, JTJ, al-Zarqawi Network)
42. United Self-Defense Forces of Colombia (AUC)

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U.S. Department of State Terrorist Exclusion List

1. Afghan Support Committee (a.k.a. Ahya ul Turas; a.k.a. Jamiat Ayat-ur-Rhas al Islamia; a.k.a. Jamiat Ihya ul Turath al Islamia; a.k.a. Lajnat el Masa Eidadul Afghanistan)
2. Al Taqwa Trade, Property and Industry Company Ltd. (f.k.a. Al Taqwa Trade, Property and Industry; f.k.a. Al Taqwa Trade, Property and Industry Establishment; f.k.a. Himmat Establishment; a.k.a. Waldenberg, AG)
3. Al-Hamati Sweets Bakeries
4. Al-Ittihad al-Islami (AIAI)
5. Al-Manar
6. Al-Ma'unah
7. Al-Nur Honey Center
8. Al-Rashid Trust
9. Al-Shifa Honey Press for Industry and Commerce
10. Al-Wafa al-Igatha al-Islamia (a.k.a. Wafa Humanitarian Organization; a.k.a. Al Wafa; a.k.a. Al Wafa Organization)
11. Alex Boncayao Brigade (ABB)
12. Anarchist Faction for Overthrow
13. Army for the Liberation of Rwanda (ALIR) (a.k.a. Interahamwe, Former Armed Forces (EX-FAR))
14. Asbat al-Ansar
15. Babbar Khalsa International
16. Bank Al Taqwa Ltd. (a.k.a. Al Taqwa Bank; a.k.a. Bank Al Taqwa)
17. Black Star
18. Communist Party of Nepal (Maoist) (a.k.a. CPN(M); a.k.a. the United Revolutionary People's Council, a.k.a. the People's Liberation Army of Nepal)
19. Continuity Irish Republican Army (CIRA) (a.k.a. Continuity Army Council)
20. Darkazanli Company
21. Dhamat Houmet Daawa Salafia (a.k.a. Group Protectors of Salafist Preaching; a.k.a. Houmat Ed Daawa Es Salafiya; a.k.a. Katibat El Ahoual; a.k.a. Protectors of the Salafist Predication; a.k.a. El-Ahoual Battalion; a.k.a. Katibat El Ahouel; a.k.a. Houmate Ed-Daawa Es-Salafia; a.k.a. the Horror Squadron; a.k.a. Djamaat Houmat Eddawa Essalafia; a.k.a. Djamaat Houmat Ed Daawa Es Salafiya; a.k.a. Salafist Call Protectors; a.k.a. Djamaat Houmat Ed Daawa Es Salafiya; a.k.a. Houmate el Da'awaa es-Salafiyya; a.k.a. Protectors of the Salafist Call; a.k.a. Houmat ed-Daacoua es-Salafia; a.k.a. Group of Supporters of the Salafiste Trend; a.k.a. Group of Supporters of the Salafist Trend)
22. Eastern Turkistan Islamic Movement (a.k.a. Eastern Turkistan Islamic Party; a.k.a. ETIM; a.k.a. ETIP)
23. First of October Antifascist Resistance Group (GRAPO) (a.k.a. Grupo de Resistencia Anti-Fascista Premero De Octubre)
24. Harakat ul Jihad i Islami (HUJI)
25. International Sikh Youth Federation
26. Islamic Army of Aden
27. Islamic Renewal and Reform Organization
28. Jamiat al-Ta'awun al-Islamiyya
29. Jamiat ul-Mujahideen (JUM)
30. Japanese Red Army (JRA)
31. Jaysh-e-Mohammed
32. Jayshullah
33. Jerusalem Warriors
34. Lashkar-e-Tayyiba (LET) (a.k.a. Army of the Righteous)
35. Libyan Islamic Fighting Group
36. Loyalist Volunteer Force (LVF)
37. Makhtab al-Khidmat
38. Moroccan Islamic Combatant Group (a.k.a. GICM; a.k.a. Groupe Islamique Combattant Marocain)

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39. Nada Management Organization (f.k.a. Al Taqwa Management Organization SA)
40. New People's Army (NPA)
41. Orange Volunteers (OV)
42. People Against Gangsterism and Drugs (PAGAD)
43. Red Brigades-Combatant Communist Party (BR-PCC)
44. Red Hand Defenders (RHD)
45. Revival of Islamic Heritage Society (Pakistan and Afghanistan offices -- Kuwait office not designated) (a.k.a. Jamia Ihya ul Turath; a.k.a. Jamiat Ihia Al- Turath Al-Islamiya; a.k.a. Revival of Islamic Society Heritage on the African Continent)
46. Revolutionary Proletarian Nucleus
47. Revolutionary United Front (RUF)
48. Salafist Group for Call and Combat (GSPC)
49. The Allied Democratic Forces (ADF)
50. The Islamic International Brigade (a.k.a. International Battalion, a.k.a. Islamic Peacekeeping International Brigade, a.k.a. Peacekeeping Battalion, a.k.a. The International Brigade, a.k.a. The Islamic Peacekeeping Army, a.k.a. The Islamic Peacekeeping Brigade)
51. The Lord's Resistance Army (LRA)
52. The Pentagon Gang
53. The Riyadus-Salikhin Reconnaissance and Sabotage Battalion of Chechen Martyrs (a.k.a. Riyadus-Salikhin Reconnaissance and Sabotage Battalion, a.k.a. Riyadh-as-Saliheen, a.k.a. the Sabotage and Military Surveillance Group of the Riyadh al-Salihin Martyrs, a.k.a. Riyadus Salikhin Reconnaissance and Sabotage Battalion of Shahids (Martyrs))
54. The Special Purpose Islamic Regiment (a.k.a. the Islamic Special Purpose Regiment, a.k.a. the al-Jihad-Fisi-Sabilillah Special Islamic Regiment, a.k.a. Islamic Regiment of Special Meaning)
55. Tunisian Combat Group (a.k.a. GCT, a.k.a. Groupe Combattant Tunisien, a.k.a. Jama'a Combattante Tunisien, a.k.a. JCT; a.k.a. Tunisian Combatant Group)
56. Turkish Hizballah
57. Ulster Defense Association (a.k.a. Ulster Freedom Fighters)
58. Ummah Tameer E-Nau (UTN) (a.k.a. Foundation for Construction; a.k.a. Nation Building; a.k.a. Reconstruction Foundation; a.k.a. Reconstruction of the Islamic Community; a.k.a. Reconstruction of the Muslim Ummah; a.k.a. Ummah Tameer I-Nau; a.k.a. Ummah Tameer E-Nau; a.k.a. Ummah Tameer-I-Pau)
59. Youssef M. Nada & Co. Gesellschaft M.B.H.

U.S. Treasury Department's Designated Charities and Potential Fundraising Front Organizations for FTOs

1. Mekhtab al-Khidamat / Al Kifah (formerly U.S.-based, Pakistan)
2. Al Rashid Trust (Pakistan)
3. WAFI Humanitarian Organization (Pakistan, Saudi Arabia, Kuwait, United Arab Emirates)
4. Rabita Trust (Pakistan)
5. Ummah Tameer E-Nau (Pakistan)
6. Revival of Islamic Heritage Society - Pakistan and Afghanistan Branches (Kuwait, Afghanistan, Pakistan)
7. Afghan Support Committee (Afghanistan, Pakistan)
8. Al Haramain Foundation (Indonesia, Kenya, Pakistan, Tanzania, Bosnia, Somalia, Bangladesh, Afghanistan, Albania, Ethiopia, Netherlands, Comoros Islands, and United States branches)
9. Aid Organization of the Ulema (Pakistan)
10. Global Relief Foundation (United States)

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11. Benevolence International Foundation (United States):
12. Benevolence International Fund (Canada)
13. Bosanska Idealna Futura (Bosnia)
14. Stichting Benevolence International Nederland (Netherlands)
15. Lajnat al Daawa al Islamiyya (Kuwait, Pakistan, Afghanistan)
16. Al Akhtar Trust (Pakistan)
17. Taibah International (Bosnia)
18. Al Haramain & Al Masjed Al Aqsa Charity Foundation (Bosnia)
19. Al Furqan (Bosnia)
20. Islamic African Relief Agency (IARA) / Islamic Relief Agency (ISRA) (Sudan, United States and 40 other branches throughout the world)
21. The Holy Land Foundation for Relief and Development (United States)
22. Al Aqsa Foundation (United States, Europe, Pakistan, Yemen, South Africa)
23. Comité de Bienfaisance et de Secours aux Palestiniens (France)
24. Association de Secours Palestinien (Switzerland)
25. Interpal (Palestinian Relief & Development Fund) (United Kingdom)
26. Palestinian Association in Austria (Austria)
27. Sanibil Association for Relief and Development (Lebanon)
28. Elehssan Society (Palestinian territories)
29. Aleph (Aum Shinrikyo/Aum Supreme Truth)
30. Rabbi Meir David Kahane Memorial Fund (Kahane Chai and Kach)
American Friends of the United Yeshiva (Kahane Chai and Kach)
American Friends of Yeshivat Rav Meir (Kahane Chai and Kach)
Friends of the Jewish Idea Yeshiva (Kahane Chai and Kach)
31. Irish Republican Prisoners Welfare Association (Real IRA)
32. Socorro Popular Del Peru/People's Aid of Peru (Sendero Luminoso/Shining Path)

OWNER-CONTRACTOR AGREEMENT

OWNER:	<u>RICHLAND COUNTY BOARD OF COMMISSIONERS</u>	CONTRACT:	<u>N/A</u>
ADDRESS:	<u>50 PARK AVE E, MANSFIELD, OH 44902</u>	ALTERNATES:	<u>N/A</u>
TELEPHONE:	<u>419-774-5550</u>	CONTRACTOR:	<u> </u>
FAX:	<u> </u>	ADDRESS:	<u> </u>
CONTACT:	<u>AMANDA MILLER</u>	TELEPHONE:	<u> </u>
		FAX:	<u> </u>
PROJECT:	<u>LIFT STATION 39 GENERATOR IMPROVEMENTS</u>	CONTACT:	<u> </u>
		DATE:	<u> </u>

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 set forth above ("Effective Date of this Agreement"), which if no date is entered shall be the date the Agreement was signed by the Owner.

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 (EJCDC C-700, 2002 edition), 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 written amendment to the Agreement signed by both parties;
 - ii. A Change Order;
 - iii. A Work Change Directive; or,
 - iv. A written order for a minor change of the Work issued by the Design Professional in accordance with the General Conditions; and
 - L. _____ When this item is checked by the Owner, e.g., with an "X" or other mark, the State of Ohio Department of Transportation, Construction Specifications Manual, dated January 1, 2005, will be a Contract Document, but only as modified by the document titled *ODOT Manual Supplement*, prepared by Owner.
 - M. _____ When this item is checked by the Owner, e.g., with an "X" or other mark, the Ohio Public Works Commission EEO Requirements and Bid Conditions will be a Contract Document, but only as modified by the document titled *OPWC EEO Requirements and Bid 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. (None, if none are listed).

Madison Contract #8 Sewer and Pump Station Construction Plans (1995)
Operating / Record Documents for Lift Station 39, Richland County Wastewater (Archives)

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).

None

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 "Engineer") is:

Name: Jones & Henry
Engineer, Ltd
Address: 3103 Executive
Parkway, Ste 300
Phone: 419-473-9611 Fax: [REDACTED]

The Design Professional's Representative is Theodore A Bennett, P.E.

3. TIME FOR COMPLETION AND PROJECT COORDINATION.

3.1 DATE FOR COMMENCEMENT. The date for commencement of the Work shall be the date established in a written Notice to Proceed issued by the Owner, 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 the Agreement. The date for commencement of the Work shall be within sixty (60) days from the bid opening date, unless the Owner and the Contractor agree to a later date. If there is any other date for commencement of the Work in the bid documents, Contract Documents or elsewhere, it is agreed that such other date is a tentative date and may not be relied upon by the Contractor. If the date for commencement of the Work is later than sixty (60) days from the bid opening date or, if applicable, the later date agreed to by the Owner and the Contractor, the Contractor may submit a Claim in accordance with the Contract Documents.

3.2 DATE FOR SUBSTANTIAL COMPLETION. The Contractor shall have its Work on the Project Substantially Complete by the following date or within the following Contract Time (in calendar days) [REDACTED]. The Date for Substantial Completion is the foregoing date or date calculated using the Contract

Time. The Date for Substantial Completion shall only be changed or modified by Change Order, other Modification, or a Claim that is Finally Resolved regardless of any dates in any schedule created by any person, including the Coordinating Contractor. The Contract Time shall run from the date of the Notice to Proceed or if there is no Notice to Proceed from the Effective Date of this Agreement.

3.2.1 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. A Claim is "Finally Resolved" when the claim process is complete and not subject to further proceedings.

3.2.2 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):

None

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 Coordinating Contractor as provided in the Contract Documents.

3.4 COORDINATING CONTRACTOR. The Coordinating Contractor shall be the Contractor (if this blank is not completed, then the Coordinating Contractor shall be the General Trades Contractor or, if there is only one contractor, the Contractor). The Coordinating Contractor shall be responsible for coordinating the work of all contractors on the Project.

3.5 LIQUIDATED DAMAGES. If the Contractor does not have its Work on the Project Substantially Complete by its Date for Substantial Completion or Finally Complete within forty-five (45) days of achieving Substantial 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:

LIQUIDATED DAMAGES – DATE FOR SUBSTANTIAL COMPLETION

<u>Contract Amount</u>	<u>Dollars Per Day</u>
\$1.00 to \$50,000.00	\$ 250.00
\$50,000.01 to \$150,000.00	\$ 500.00
\$150,000.01 to \$500,000.00	\$1,000.00
\$500,000.01 to \$2,000,000.00	\$1,500.00
\$2,000,000.01 to \$5,000,000.00	\$2,500.00
\$5,000,000.01 to \$10,000,000.00	\$3,000.00

LIQUIDATED DAMAGES – FINAL COMPLETION

<u>Contract Amount</u>	<u>Dollars Per Day</u>
\$1.00 to \$50,000.00	\$ 50.00
\$50,000.01 to \$150,000.00	\$ 100.00
\$150,000.01 to \$500,000.00	\$ 200.00
\$500,000.01 to \$2,000,000.00	\$ 300.00
\$2,000,000.01 to \$5,000,000.00	\$ 500.00
\$5,000,000.01 to \$10,000,000.00	\$ 600.00

In addition to such Liquidated Damages, the Contractor shall indemnify, defend and hold the Owner and its employees and agents harmless from any and all claims, whether or not such claims are proven, and from all costs and expenses incurred, as a result of or related to such claims, including but not limited to attorneys' and consultants' fees and expenses, provided that such claims arise out of or are related to the Contractor's failure to Substantially Complete its Work by its Date for Substantial Completion or its failure to Finally Complete its Work within forty-five (45) days of its Date for Substantial Completion. The Contractor's obligation to indemnify, defend and hold the Owner harmless under this Section 3.5 shall be joint and several. These Liquidated Damages are in addition to any other remedies available to the Owner under the Contract Documents.

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.

4. CONTRACT SUM (also called Contract Price). The lump sum 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 One Hundred and Ten Thousand Dollars (\$110,000.00). 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: \$110,000.00

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 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. LIMITATION ON LIABILITY. The Owner's total liability under this Agreement will be limited to the amount set forth in the Fiscal Officer's certificate accompanying this Agreement. Under no circumstances will the elected officials, officers, employees, board or council members, or agents of the Owner be personally liable for any obligations or claims arising out of or related to this Agreement.

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 the county in Ohio in which the Owner's principal office is located, and each party hereby expressly consents to the exclusive jurisdiction of such 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, military status 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, military status 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, without increase in the Contract Sum.

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.

7.7.4 PUBLIC RECORDS LAW. The Contractor shall keep, maintain, make available for inspection and copying, and release any and all records generated in the performance of this Agreement in accordance with state and federal law governing public records and the Owner's record retention schedules. The Contractor shall remove and destroy said records in accordance with state and federal law governing public records and the Owner's record retention schedules.

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 PARTNERING. Contractor agrees that it will participate, as part of the Contract Sum, in any partnering sessions scheduled by Owner.

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 Board of Commissioners**

Contractor:

By: _____

By: _____

Name:

Name:

Title:

Title:

Date:

Date:

By: _____

Name:

Date:

By: _____

Name:

Date:

CERTIFICATE

(Section 5705.41, R.C.)

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

April 22, 2015

SENT BY REGULAR U.S. MAIL

Name
Address
Location

Re: Notice to Proceed

Dear Contractor:

You are notified to proceed with your work on the Lift Station 39 Generator Improvements.

Thank you,

Richland County Board of Commissioners

By _____
Clerk

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

**MODIFIED
STANDARD
GENERAL CONDITIONS
OF THE
CONSTRUCTION CONTRACT**

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
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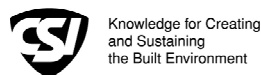
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This document has been approved and endorsed by



The Associated General Contractors of America



Construction Specifications Institute

EJCDC C-700 Standard General Conditions of the Construction Contract.
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American Council of Engineering Companies
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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters or with all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement or Owner-Contractor Agreement* -- The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order*--A document recommended by Engineer which is signed by Contractor, and Owner and authorizes an addition, deletion, or revision in the Work or

an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*--The Contract Documents are the Contract Documents identified in the Owner-Contractor Agreement ("Agreement").~~Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.~~

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement*--The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed by the Owner, and delivered by the last of the two parties to sign and deliver.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

25A. Modification--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) a written order for a minor change in the Work issued by the Engineer.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--~~A~~ The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. Progress Schedule--The Progress Schedule, sometimes called the Construction Schedule, is the document prepared by the Coordinating Contractor. The Coordinating Contractor is defined in the Agreement. A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment. If the Owner or Engineer prepares a Bid Schedule breaking the Work down into estimated quantities (pay items) for the purpose of bidding the Work, the Schedule of Values shall be the Bid Schedule.

If there is any part of the Work that is not identified in the Bid Schedule, such part shall be deemed to be incidental to Work identified in the Bid Schedule.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions. Modifications to the standard EJCDC general conditions document are included in the text of this document and are shown as underlined text (additions) and interlineated text (deletions). If additional supplements are included in the Contract Documents, they may be in the form of Supplementary or Special Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be

effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or
- c. has been damaged prior to Engineer’s - recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds, insurance certificates, insurance endorsements, and other documents as Contractor may be required to furnish under the Contract Documents.

B. *Evidence of Insurance:* Before any Work at the Site is started, ~~Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.~~ Contractor shall deliver to the Owner with copies to each additional insured identified in the Modified General Conditions Owner-approved copies of certificates of insurance, copies of endorsements, and other evidence of insurance which either of them or any additional insured may reasonably request, which Contractor is required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

A. The Contract Times will commence to run on ~~the thirtieth day after~~ the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 Starting the Work

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 Before Starting Construction

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

~~1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;~~

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work. The total of the schedule of values prepared for the Work, as required by the General Conditions, shall not exceed the Bid submitted for the Work, unless such amount is adjusted as provided in the Contract Documents.

~~4. a proposed list of subcontractors and major material and equipment suppliers. The list shall include any proposed substitutions in accordance with Paragraph 6.05 of the General Conditions. The Contractor shall provide a list of any proposed substitutions in accordance with Paragraph 6.05 of the General Conditions.~~

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. 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 Engineer and Owner.

~~1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance~~

~~will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.~~

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work. Once approved by the Engineer, the Contractor will not change the allocation of the Contract Price to the component parts of the Work without the Engineer's written approval. The Engineer thereafter may from time to time require the Contractor to adjust such schedule if the Engineer determines it to be in any way unreasonable or inaccurate. The Contractor then shall adjust the schedule of values as required by the Engineer within ten (10) days.

4. The Construction/Progress Schedule shall be prepared as provided in Paragraph 6.4.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regula-

tions in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* In addition to its obligations under the Instructions to Bidders, ~~b~~Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof or Contractor failed to perform its obligations under the Instruction to Bidders.

4. In addition to its obligations under the Instructions to Bidders, if Contractor proceeds with work that Contractor had actual knowledge or should have

known that a conflict, error, ambiguity, or discrepancy existed as indicated above, correction of work constructed without such notification to Engineer shall be at Contractor's expense, (except in an emergency as authorized by Paragraph 6.16.A.).

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

2. Within the Contract Documents, requirements of the Agreement shall take precedence over the Modified General Conditions, which shall take precedence over the Specifications, which shall take precedence over the Drawings.

3. Within a particular Contract Document, figure dimensions on Drawings shall take precedence over general Drawings. Specific instructions or specifications shall take precedence over general instructions or specifications.

3.04 Amending and Supplementing Contract Documents

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer’s consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adoption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user’s sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data’s creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data’s creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;

HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner’s furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a Notice of Commencement prepared for the Project, conforming to the provisions of Ohio Revised Code Section 1311.252, current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner’s interest therein as necessary for giving notice of or filing a mechanic’s or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. Reports and Drawings: The Supplementary Conditions identify. The Agreement identifies:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

3. it is possible that there may be other reports and/or tests of subsurface conditions at or contiguous to the Site. The Owner makes no representation about such reports and/or tests, assuming they exist.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions Agreement. Except for

such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation 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 Contractor to estimate locations or quantities of subsurface strata are independent factual assumptions, which Owner does not warrant.

4.03 Differing Subsurface or Physical Conditions

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor, as a condition precedent to any increase in the Contract Price and/or an extension of the Contract Times shall, promptly within 48 hours after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the

necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. Possible Price and Times Adjustments

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 Underground Facilities

A. *Shown or Indicated*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided elsewhere in these Modified General Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

~~a. reviewing and checking all such information and data;~~

~~b. locating all Underground Facilities shown or indicated in the Contract Documents, protecting all Underground Facilities in a manner at least as cautious and protective of safety and of underground facilities as those methods identified in Ohio Revised Code Sections 3781.25 and 3781.30,~~

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document

such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel. Contractor is referred to the General Requirements for additional requirements for laying out the work.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings*: Reference is made in the Agreement for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the ~~Supplementary Conditions, Contract Documents.~~ Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work

performed by Owner's own forces or others in accordance with Article 7.

~~G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, 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 a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, 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 a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

~~A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents. Contractor~~

shall furnish a Contract Bond in the amount of the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. Such bond shall be in the form that meets the requirements of the Ohio Revised Code. If the Contractor submitted a combined Bid Guaranty and Contract Bond with its bid for the Work, that form of Bond shall satisfy the Contractor's requirement to provide a Contract Bond. Contractor shall also furnish any other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury and meet the other requirements of the Contract Documents. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. 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 Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer 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 Paragraphs 5.01.B and 5.02.

D. *Material Default or Termination.* If the Owner notifies the Contractor's surety that the Contractor is in material default, the surety will complete its investigation of the claimed material default within 21 days. The surety is advised to start looking for a replacement contractor upon notice of material default. As part of its investigation, the surety shall promptly visit the offices of the Contractor, Engineer, and Owner to inspect and copy the available Project records. The Owner, Engineer, and Contractor, upon written request by the surety, shall make such records available during regular business hours for such inspection and copying. The Owner and Engineer's making such records available as provided herein shall satisfy the Owner's obligation to the surety to furnish documents for the investigation. The surety will provide the Owner with the results of its investigation, including any written report or documents.

If the Owner terminates the Contract and the surety proposes to takeover the Work, the surety shall do so no later than the later of the expiration of the 21-day investigation period or 10 days after the date the Owner terminates the Contract, whichever is later. If the Owner terminates the Contract, 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. If the Contractor is terminated for cause, the replacement contractor shall not be the Contractor or its employees, unless the Owner agrees in writing. In the event the Surety takes over the Project, the surety's obligation shall not be limited to the penal sum of the Bond.

If the surety does not propose an acceptable contractor as required by this Paragraph 5.01.D, the Owner may complete the Work by such means as it deems appropriate. In the event the Owner agrees to accept a replacement contractor, the replacement contractor shall furnish its own bond for the replacement contractor's scope of work, and neither the Contractor nor the surety shall be relieved of their obligations under the Contract Documents.

This Paragraph 5.01.D is in addition to any other rights of the Owner under the Contract Documents and is not intended to create any rights of the surety, including but not limited to the right to take over the Contractor's obligations.

In the event of the Contractor's termination and if the surety does not takeover the Work as provided in this Paragraph 5.01.D., the Owner may take possession of and use all materials, facilities and equipment at the Project Site or stored off-site for which Owner has paid in whole or in part.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Modified General Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in these ~~Supplementary~~ Supplementary Modified General Conditions, certificates of insurance and copies of endorsements (and other evidence of insurance requested by Contractor or any other

additional insured), which Owner is required to purchase and maintain.

C. Failure of Owner to demand such certificates or other evidence of full compliance with these insurance requirements or failure of Owner to identify a deficiency from evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

D. 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 in the Contract Documents.

5.04 Contractor's Liability Insurance

A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by 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 wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (~~subject to any customary exclusion regarding professional liability~~) Owner and Engineer, and any other individuals or entities identified in these ~~Supplementary~~ Modified 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, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in ~~the Supplementary Conditions~~ Paragraph 5.04.B.2.a or required by Laws or Regulations, whichever is greater;

a. The minimum limits of liability for the required insurance policies listed in Paragraph 5.04.A shall not be less than the following unless a greater amount is required by law:

(1) Commercial General Liability ("CGL"); Bodily injury (including death and personal injury) 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) Broad Form Property Damage, including Completed Operations, (v) Contractual Liability, (vi) Products and Completed Operations, (vii) Personal/Advertising Injury with Employment Exclusion deleted, (viii) Stopgap liability endorsement for \$1,000,000 limit, and (ix) 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 personal injury) and property damage with a combined single limit of \$1,000,000 per person and \$1,000,000 each accident.

(3) Such policies shall be supplemented by an umbrella policy, also written on an occurrence basis, to provide additional protection to provide coverage in the total amount of \$1,000,000 for each occurrence

and \$1,000,000 aggregate for contracts with a Contract Price of \$250,000 or less; \$2,000,000 each occurrence and \$2,000,000 aggregate for contracts with a Contract Price 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 Price 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 Price greater than \$1,000,000.

The following provisions shall also apply to the insurance provided by the Contractor:

- (a) Contractor's insurance shall be primary and non-contributory.
- (b) Insurance policies shall be written on an occurrence basis only.
- (c) 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.
- (d) Owner shall be named as a certificate holder on the policies of insurance maintained by Contractor. The Contractor shall provide each additional insured with a certificate of insurance.
- (e) The additional insured endorsement shall be ISO 20 10 11 85 or its equivalent so that Completed Operations liability extends to the additional insureds after the completion of the Project.

3. include products and completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed with respect to coverage for the Project or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Modified General Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to products and completed operations insurance, ~~and any insurance coverage written on a claims made basis,~~ remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in these Supplementary Modified 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.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, 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.

5.06 *Property Insurance*

~~A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:~~

~~1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors 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;~~

~~2. be written on a Builder's Risk "all risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;~~

~~3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);~~

~~4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;~~

~~5. allow for partial utilization of the Work by Owner;~~

~~6. include testing and startup; and~~

~~7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.~~

A. Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of full replacement cost thereof.

(1) This insurance shall:

(a) include the interests of Owner, Contractor, Subcontractors, Engineer, and any other individuals or entities identified herein, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured (Insurance certificates shall specifically indicate by name the additional insureds, which are to include Owner and Engineer as well as other individuals or entities so identified.);

(b) be written on a Builder's Risk "all-risk" form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism, and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (including that caused by flood or hydrostatic pressure), and such other perils or causes of loss as may be specifically required by these Modified General Conditions;

(c) include expenses incurred in the repair or

replacement of any insured property (including but not limited to fees and charges of engineers and architects);

(d) cover the total value of materials and equipment supplied under the Contract from the time Contractor takes possession of them until they are installed and tested by Contractor and the Project is accepted as complete by Owner under an endorsement to this policy or in the form of Installation Floater Insurance of the "all risk" type;

(e) allow for partial utilization of the Work by Owner;

(f) include testing and startup; and

(g) be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

(2) Contractor shall be responsible for any deductible or self-insured retention.

(3) The policies of insurance required to be purchased and maintained by Owner in accordance with this Paragraph 5.06.A and shall comply with the requirements of Paragraph 5.06.C of these General Conditions.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by these ~~Supplementary~~ Modified General Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in these ~~Supplementary~~ Modified General Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors 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.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 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 Paragraph 5.07.

~~D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. Contractor shall pay all deductible provisions applicable to claims related to the Project made under and paid by insurance. If more than one Contractor is responsible for the incident giving rise to the insurance coverage, the Contractors shall be responsible on a pro rata basis, according to their responsibility for the occurrence or accident giving rise to the claim, for payment of the deductible. The maximum deductible shall be \$5,000.~~ 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.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in these ~~Supplementary Modified General~~ Supplementary Modified General Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in these ~~Supplementary Modified General~~ Supplementary Modified General Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall

extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers, ~~and, if required in writing by any party in~~

~~interest, Owner as fiduciary shall give bond for the proper performance of such duties.~~

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement 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.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of

construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, Shut Down Dates as defined in the Agreement, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. Contractor warrants that all materials and equipment are suitable and fit for the intended use of such materials and equipment and are free from defects in material, workmanship or design. The foregoing applies whether the materials or equipment are specified in the Contract Documents.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 Progress Schedule

A. Contractor shall adhere to the Progress Schedule established in accordance with the Contract Documents. ~~Paragraph 2.07 as it may be adjusted from time to time as provided below.~~

1. The Contractor, promptly after being awarded the Contract and within five (5) days of the date of any request from the Coordinating Contractor, Design Professional or the Owner to submit scheduling information, shall submit proposed scheduling information for its Work to the Coordinating Contractor, Design Professional and to the Owner in such form and in such detail as requested by the Coordinating Contractor. The Coordinating Contractor shall prepare the Progress Schedule within ten (10) days of the date of the Notice to Proceed. The Progress Schedule shall include and be consistent with any applicable Milestone Dates in the Construction Documents. The Coordinating Contractor shall prepare all Progress Schedules in CPM format unless provided otherwise in the Contract Document or otherwise agreed in writing by the Owner. The Progress 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, other Modification or a Claim that is Finally Resolved, regardless of the date in the Proposed Schedule.**

a. The Coordinating Contractor shall update the Progress Schedule each month. In preparing and updating the Progress Schedule, the Coordinating Contractor shall take into consideration but not be bound by the scheduling and other information submitted by the Contractors.

b. The Progress Schedule shall be manpower loaded and shall include a schedule of the submission of Shop Drawings, Product Data and Samples.

c. The Contractor shall, on a weekly basis, prepare and submit to the Coordinating Contractor 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 by the Coordinating Contractor or the Architect.

d. The float in the Progress 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.

2. The Contractor's obligation to furnish requested scheduling information is a material term of its Contract. If the Contractor fails to furnish requested scheduling information in writing within five (5) days of a request for such information from the Coordinating Contractor, Design Professional 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 furnish the requested information.

~~Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.~~

~~2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.~~

B. THE PERIODS OF TIME IN THE PROJECT CONSTRUCTION SCHEDULE ARE OF THE ESSENCE TO THIS CONTRACT. THE CONTRACTOR SHALL PROSECUTE ITS WORK IN ACCORDANCE WITH THE CURRENT PROJECT CONSTRUCTION SCHEDULE.

1. Notice of Delays. As a condition precedent to any increase in the Contract Price and/or Contract Times, the Contractor shall give the Owner and the Engineer verbal notice of any delay affecting its Work within two (2) business days of the commencement of the delay. In addition and also as a condition precedent to any increase in the Contract Price and/or Contract Times, the Contractor shall give the Owner and Engineer 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 that it is a "NOTICE OF DELAY." A notice of a delay shall not constitute the submission of a Claim. Contract Times shall only be changed as provided in the Agreement. 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.

6.05 *Substitutes and "Or-Equals"*

~~A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Substitutions prior to the receipt of bids shall be governed by the Instruction to Bidders. Substitutions after the entry into the Agreement shall be governed by these Modified General Conditions.~~ Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

b) whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

c) whether or not incorporation or use of the proposed substitute item in con-

nection with the Work is subject to payment of any license fee or royalty;

3) will identify:

a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services;

4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct

contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection. If Owner or Engineer after due investigations has reasonable objections to any proposed Subcontractor, Supplier, or other individual or entity, either may request Contractor submit an acceptable substitute without an increase in Contract Price, and the Contractor shall do so within ten (10) days..

B. If the ~~Contract Documents~~ ~~se Supplementary Conditions~~ require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for review or acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the ~~Contract Documents~~, ~~Supplementary Conditions~~, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No review or acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and

any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in these Supplementary Modified General Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by

others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, 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 any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, 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 such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations,

but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 Taxes

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

B. Materials purchased for use or consumption in connection with the proposed Work will be exempt from the State of Ohio Sales Tax, as provided in Section 5739.02 of the Ohio Revised Code, and also from the State of Ohio Use Tax, as provided in Section 5741.01 of the Ohio Revised Code. The Owner will provide the Contractor with a Construction Tax Exempt Certificate upon request, made through the Engineer.

C. Purchases by the Contractor of expendable items, such as form lumber, tools, oil, greases, fuel, or equipment rentals, are subject to the application of Ohio Sales or Use Taxes.

D. In addition to any other taxes required to be withheld by the Contractor, the Contractor shall withhold any income taxes due to the Owner for wages, salaries and commissions paid to its employees for work done under this Agreement and further agrees that any of its subcontractors shall, by the terms of its subcontract, be required to withhold any such income taxes due for work performed under this Agreement.

6.11 Use of Site and Other Areas

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, 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 any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder ~~to the extent caused~~ or alleged to have been caused by or based upon Contractor's performance of the Work.

B. Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 Record Documents

A. Contractor shall maintain in a safe place at the Site ~~one two~~ two record ~~copy~~ copies of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. ~~Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner. The Contractor shall deliver these record documents, samples, and shop drawings to the Engineer, no later than the date~~

for Substantial Completion for the Engineer's review and transmittal to Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer, or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

B. Contractor shall keep at the Site at all times during the progress of the Work a competent person to comply with OSHA trenching and excavation requirements. The competent person shall be one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the

services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 Continuing the Work

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or

disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 Contractor's General Warranty and Guarantee

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 Indemnification

A. ~~To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, 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 the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims (whether alleged or proven), demands, 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 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. The Contractor's obligations under this Paragraph 6.20.A are joint and several.~~

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

~~C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:~~

~~1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications or~~

~~2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.~~

6.21 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are

specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, 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 Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any

adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the Owner will provide for the coordination of the Work at the Site in the Contract Documents. ~~the following will be set forth in Supplementary Conditions:~~

- ~~1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;~~
- ~~2. the specific matters to be covered by such authority and responsibility will be itemized; and~~
- ~~3. the extent of such authority and responsibilities will be provided.~~

~~B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.~~

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer, ~~to whom Contractor makes no reasonable objection,~~ whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. The Owner shall provide the Contractor with a certificate from its fiscal officer as to the availability of funds. ~~If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.~~

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work and to assist in carrying out the Engineer's other responsibilities under the Contract Documents and its agreement with the Owner. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual will be subject to the Contract Document, specifically including the requirement in the Agreement that any Change Order or other Modification be authorized by a resolution duly adopted by the Owner. ~~or entity will be as provided in the Supplementary Conditions.~~

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to

reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

B. Unit Price Work for which a typical cross section or other detail from the Contract Documents applies shall be paid only up to the quantity determined by using the dimensions provided in the typical cross section or other detail. By way of example, this provision means that if a typical trench width detail in the Drawings shows a maximum width of 30-inches, all pay quantities associated with the actual work of constructing the detail shall be calculated using a trench width not greater than 30-inches. This means that the actual pay quantity could also be less than that based upon a 30-inch wide trench, if the actual trench width is smaller and otherwise in conformance with the Contract Documents, but the Contractor would not be paid more if the actual trench width exceeds 30 inches. Contractor is responsible for determining what actual trench width may be required due to field conditions and applicable laws and regulations existing at the time of its bid.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

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 Date for Substantial Completion.

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times) is required by the provisions of any

bond to be given to a surety, the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change. Failure to provide notice to the surety of any such change shall not exonerate the surety from its obligations under the bond.

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

~~B. *Notice:* Written notice stating the general nature of each Claim, shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).~~
Notice: 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 Engineer and the Owner, within 30 days of the start of the event giving rise to the Claim. The Contractor shall be responsible for substantiating its Claim. The Contractor's obligation to deliver a fully completed Statement of Claim within such 30-day period is a material term of the Contract Documents and provides the Owner with the opportunity to mitigate its damages.

As a condition precedent to a change in the Contract Price or the Contract Times or a recovery of damages against the Contractor, the Owner will give the Engineer and the Contractor written notice of a Claim. The Owner shall be responsible for substantiating its Claim.

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 Contractor's Work, and such actions shall not constitute a breach of contract by the Owner, since the Contractor is entitled to additional compensation by properly pursuing a Claim as permitted by these Modified General Conditions. Pending the final resolution of a Claim, the Contractor shall continue performance of the Work.

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,
2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor commences an action in a court of exclusive jurisdiction as set forth in Paragraph 16.01.A.2 within 30 days of such action or denial, invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

G. *False or Fraudulent 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.

H. *Claim Documentation:* Within ten (10) days of written request from the Owner, Contractor shall make

available to Owner or its representative any books, records, or other documents in its possession or to which it has access, including but not limited to Contractor's daily logs/reports, original estimates of Work and applicable agreements, correspondence with subcontractors and suppliers, internal correspondence (including e-mail), accounting records, and other information from which the Contractor's costs may be derived. To the extent permitted by law, the Owner shall keep the Project accounting records and estimate for the Project confidential. As requested by the Owner, the Contractor shall provide such documents and information in paper copies and/or computer format (including the format of the Contractor's accounting software and/or ASCII format). The Contractor's provision of the requested documents and information shall be a condition precedent to any further proceeding under the Contract Documents or to payment of an Application for Payment

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.

ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in Paragraph 11.01.B.

1. 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.

2. 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.

3. 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 Engineer, 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.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

d. Sales, consumer, use, commercial activity and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of

partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. Contractor shall not be paid for any Unit Price Work that represents an actual quantity greater than 110% of the estimated quantity, without a Change Order. The Contractor shall maintain such records as the Engineer may require to track the quantities of Unit Price Work.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

c. 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 Paragraph 12.01.C.2.a 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 under Paragraphs 11.01.A.1 and 11.01.A.2 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;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A.1 Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the

Contract Times will be extended in an amount equal to the time lost due to such delay, if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, ~~abnormal~~ weather conditions as provided in Paragraph 12.03.A.2, or acts of God

A.2 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, if a Claim is made therefor as provided in Paragraph 12.02.A, the Contract Times 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>

A work day will be lost due to weather only when weather conditions reduce production by more than 50 percent on Work on the critical path. Production shall be measured by hours worked. The Contractor shall have the burden of establishing that weather conditions reduced production by more than 50 per cent on Work on the critical path.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and

Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C, it being understood and agreed that the Contractor has included in the Contract Price a contingency for the risk of such delays.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or 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) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. 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 Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. 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 Engineer the required certificates of inspection or approval.

D. 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 Engineer'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 Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, 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 such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice and so as not to delay the Project, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, 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 such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, 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 such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications .

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be

construed as a substitute for, or limitation upon, or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, 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) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

~~A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency. If Contractor fails within two (2) business days of a written notice from the Owner or Engineer, or such longer time as may be stated in such notice, to correct, or take reasonable steps to commence to correct, defective Work or to remove and replace, or take reasonable steps to remove and replace, rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may correct or remedy any such deficiency. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor all the 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) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09. 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 Paragraph 13.09.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

~~C. All claims, 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) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.~~

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

~~A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.~~

A. The Schedule of Values established as provided in Paragraph 2.05.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. The Engineer-approved version of the Application for Payment form, which includes information on completed Schedule of Values items, is to be used by the Contractor when making an Application for Progress Payment. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

~~1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. At least by the 20th day of the month (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment (including a Schedule of Values described in Paragraph 2.05.A of these Modified General Conditions) filled out and signed by Contractor covering the Work completed as of the date of the Application, and accompanied by a properly completed Contractor's Payment Application Checklist, all the documentation required to be submitted with such Checklist, and any other supporting documentation required by the Contract Documents or by the Engineer. 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. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.~~

2. Beginning with the second Application for Payment, each Application shall include a) an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment a Waiver and Release Agreement for itself and a Subcontractor's - Supplier's Waiver and Release Agreement for each of its subcontractors, and b) a Contractor's Affidavit with List of Subcontractors and Suppliers with Amounts Withheld.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement. The Owner and the Contractor agree that any escrow account required in connection with the Project shall be established at a bank or savings and loan association in the State of Ohio used by the Owner, and the escrow agent shall be compensated for its services in accordance with the schedule approved by the Owner from the income from the escrow account.

B. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
- b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and
- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

- a. to supervise, direct, or control the Work, or
- b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
- c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
- d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
- e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; ~~or~~
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A; or
- e. the Contractor is in default of any other Agreement it has with the Owner.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation and the approval of any agencies and/or lenders, the amount recommended and approved will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed

by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

F. *Time for Completion of Items on Tentative List and Remedies.* The time fixed by the Engineer for the completion of all items on the list accompanying the tentative certificate of Substantial Completion shall not be greater than forty-five (45) days. The Contractor shall complete all items on the list within such 45-day period. 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 to 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 Price 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 Engineer's fees. The Contractor's warranties 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 Engineer for purposes of evaluating corrected Work is required, it will be performed at the Contractor's expense.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. Owner may at any time request Contractor in writing to permit Owner to take over operation and/or occupancy of any part of the Work although it is not substantially complete. A copy of such request will be

sent to Engineer, and within a reasonable time thereafter, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If Contractor does not object in writing to Owner and Engineer that such part of the Work is not ready for separate operation and/or occupancy by Owner, Engineer will finalize the list of items to be completed or corrected and will deliver such lists to Owner and Contractor together with a written recommendation as to the division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, utilities, insurance, warranties, and guarantees for that part of the Work which will become binding upon Owner and Contractor at the time when Owner takes over such operation and/or occupancy (unless they shall have otherwise agreed in writing and so informed Engineer). During such operation and/or occupancy and prior to Substantial Completion of such part of the Work, Owner shall allow Contractor reasonable access to complete or correct items on said list and to complete other related Work.

~~4.5.~~ No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.7;

b. consent of the surety, if any, to final payment;

c. a list of all Claims against Owner that Contractor believes are unsettled; and

d. a Contractor's Waiver and Release Agreement for itself as of the date of the Final Application for Payment and Subcontractor's - Supplier's Waiver and Release Agreements for each of its Subcontractors and Suppliers as of the date of the Final Application for Payment. ~~complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.~~

~~3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.~~

B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and , will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, 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 to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work

on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's ~~persistent~~ failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; ~~or~~

4. Contractor's violation in any substantial way of any provisions of the Contract Documents; or

5. Contractor is in material default of any other Agreement with the Owner.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) ~~seven~~ three business days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion),

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

Such termination shall be effective as of the date stated in the termination notice provided to Contractor.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, 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) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within ~~three~~ seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

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

~~F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.~~

15.03 Owner May Terminate For Convenience

A. Upon ~~seven~~ three business days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. Such termination shall be effective as of the date stated in the written notice. In such case, Contractor shall be paid for (without duplication of any items):

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

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

~~3. all claims, 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) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

3. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

C. Contractor shall require similar provisions contained in Paragraph 15.03 in each of its subcontracts to protect Contractor from claims by Subcontractors arising from the Owner's termination for convenience, or to minimize claims by such subcontractors. The remedy provided to Contractor under this Paragraph 15.03 shall be the Contractor's sole remedy in the event of termination for convenience by Owner.

15.04 Contractor May Stop Work or Terminate

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 Methods and Procedures

~~A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of~~

~~the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.~~

A. Settlement, Methods and Procedures

1. In the event that Contractor files a Claim or files an action against Owner, Owner shall be entitled to make an offer of settlement of the Claim to Contractor at any time up to the date of trial. Such offer of settlement shall not be admissible into evidence at the litigation except on the issue of entitlement to recovery of attorneys' fees, costs and expenses. If at any stage of the litigation, including any appeals, Contractor's claim is dismissed or found to be without merit, or if the damages awarded to Contractor on its claim do not exceed Owner's offer of settlement, Contractor shall be liable to Owner and shall reimburse Owner for all attorneys fees, costs and expenses incurred by Owner from the date of the offer of settlement until the date of the final adjudication and resolution of Contractor's claim.

2. Any dispute, claim or other matter not settled by negotiation or other means as mutually agreed upon by Owner, Contractor, and surety where applicable, shall be determined by the Court of Common Pleas for county in which the Owner's principal office is located, which shall have exclusive venue and jurisdiction over such matters and claims.

~~B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.~~

~~C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:~~

~~1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or~~

~~2. agrees with the other party to submit the Claim to another dispute resolution process, or~~

~~3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.~~

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the State of Ohio, ~~state in which the Project is located.~~

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these

CONTRACTOR'S PAYMENT APPLICATION CHECKLIST

THE CONTRACTOR MUST COMPLETE THIS CHECKLIST AND SUBMIT IT TO THE DESIGN PROFESSIONAL WITH ITS PAYMENT APPLICATION AND ALL REQUIRED DOCUMENTATION.

1. Contractor's Name: _____

2. Name, title, and telephone and fax numbers of Contractor's representative to contact regarding the Payment Application and required documentation:

Name: _____ Title: _____

Office Telephone No.: (____) _____ FAX No.: (____) _____

3. Payment Application Number and Date:

No. _____ Date: _____, 20____

4. The following is a list of required documentation that must accompany its Payment Application. The Contractor certifies that it has submitted the documentation listed below with its Payment Application. If the Contractor cannot do so, the Contractor should explain why in Paragraph 5. Such explanations shall not excuse the Contractor from the requirements for submitting this documentation.

_____ .1 Five (5) copies of a properly completed and executed Application for Payment with a properly completed and executed Schedule of Values attached to each;

_____ .2 Properly Completed Contractor's Affidavit with List of Subcontractors and Suppliers and Any Amounts Withheld;

_____ .3 Contractor's Wavier and Release Agreement (beginning with the second Application for Payment);

_____ .4 For each of its Subcontractors and Suppliers, a Subcontractor's – Supplier's Waiver and Release Agreement (beginning with the second Application for Payment);

_____ .5 Schedule of all materials and equipment stored on-site;

_____ .6 For materials and equipment stored off-site:

_____ A list of the materials and equipment consigned and stored off-site in connection with the Project (which shall be clearly identified), giving the place of storage, together with copies of invoices and reasons why the materials and equipment cannot be delivered to the site;

_____ Certification that all items have been tagged for delivery to the Project and that they will not be used for any other purpose;

_____ A letter from the Contractor's surety bonding company indicating agreement to the arrangements and that payment to the Contractor shall not relieve either party of its responsibility to complete the facility;

_____ Evidence of adequate insurance covering the material and equipment in storage, which shall name the Owner as additional insured;

_____ Evidence that the Design Professional has visited the Contractor's place of storage and found that all the materials and equipment set forth in the payment request and represented to be stored off-site are stored at the place of storage (any costs incurred by the Design Professional to inspect material and equipment in off-site storage shall be paid by the Contractor); and

_____ Itemization of the materials and equipment and their cost, which were approved on previous Pay Applications and which remain in off-site storage.

_____ .7 Other documentation or information required by the Contract Documents or by the Design Professional or Owner.

5. Reason why required documentation is not submitted:

NOTE: The failure to submit required documentation, regardless of the reason, may result in non-payment, partial payment, and/or late payment.

Signature

Printed Name

Date

DESIGN PROFESSIONAL'S REVIEW

_____ Checklist and documentation complete.

_____ Checklist and documentation incomplete.

Signature

Printed Name

Date

NOTARY PUBLIC

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

Signature of Notary Public

Notary Public: _____

My Commission Expires: _____

Contractor's Application For Payment No. _____

	Application Period:	Application Date:
To (Owner):	From (Contractor):	Via (Engineer)
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

APPLICATION FOR PAYMENT

Change Order Summary

Approved Change Orders		
Number	Additions	Deductions
TOTALS		
NET CHANGE BY CHANGE ORDERS		

1. ORIGINAL CONTRACT PRICE	\$	
2. Net change by Change Orders.....	\$	
3. CURRENT CONTRACT PRICE (Line 1 ± 2)	\$	
4. TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)	\$	
5. RETAINAGE:		
a. ____ % x \$ _____ Work Completed	\$	
b. ____ % x \$ _____ Stored Material.....	\$	
c. Total Retainage (Line 5a + Line 5b)	\$	
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)	\$	
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)	\$	
8. AMOUNT DUE THIS APPLICATION	\$	
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above).....	\$	

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies that: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By:	Date:
-----	-------

Payment of:	\$ _____	(Line 8 or other - attach explanation of other amount)
is recommended by:	_____	_____ (Date)
	(Engineer)	
Payment of:	\$ _____	(Line 8 or other - attach explanation of other amount)
is approved by:	_____	_____ (Date)
	(Owner)	
Approved by:	_____	_____ (Date)
	Funding Agency (if applicable)	

Progress Estimate

Contractor's Application

For (contract):						Application Number:					
Application Period:						Application Date:					
A				B	C	D	E	F		G	
Bid Item No.	Description		Bid Quantity	Unit Price	Bid Value	Estimated Quantity Installed	Value	Materials Presently Stored (not in C)	Total Completed and Stored to Date (D + E)	% (E) B	Balance to Finish (B - F)
	Totals										

Stored Material Summary

Contractor's Application

For (contract):					Application Number:				
Application Period:					Application Date:				
A	B	C	D		E		F		G
Invoice No.	Shop Drawing Transmittal No.	Materials Description	Stored Previously		Stored this Month		Incorporated in Work		Materials Remaining in Storage (\$) (D + E - F)
			Date (Month/Year)	Amount (\$)	Amount (\$)	Subtotal	Date (Month/Year)	Amount (\$)	
		Totals							

**CONTRACTOR'S WAIVER & RELEASE AGREEMENT
("AGREEMENT")**

Project: Lift Station 39 Generator Improvements

The undersigned hereby acknowledges receipt of payment from the Owner for all Work on the Project through the date of its prior Application for Payment. The undersigned acknowledges and agrees that the terms in this Agreement shall have the same meaning as in the Contract Documents for the Project.

In return for said payment, and/or pursuant to certain contractual obligations of the undersigned, the undersigned hereby waives and releases any rights it has or may have through the date of its last Application for Payment to any and all Claims and liens related to the Project, including without limitation: Claims of payment, mechanic's liens, liens against funds, surety bond Claims, and Claims for breach of contract or unjust enrichment. The sole exception to this waiver and release is for any Claims the undersigned has made by properly and timely submitting a Statement of Claim form. The undersigned acknowledges and agrees that this waiver and release is intended to be a comprehensive release of all Claims and liens related to the Project, including without limitation all Claims against the Owner, the Design Professional, any Construction Manager, and the employees, board members, agents and representatives of any of the foregoing persons. The undersigned further certifies that this Agreement covers Claims and liens by all persons with which it did business related to the Project, including without limitation subcontractors and suppliers, through the date of its last Application for Payment. The undersigned represents that all such persons have signed an agreement in the form of this Agreement releasing any and all Claims and liens related to the Project, except for any Claims made by properly and timely submitting a Statement of Claim form, a copy of which has been delivered to the Design Professional and the Owner. The undersigned hereby represents and warrants that it has paid any and all welfare, pension, vacation or other contributions required to be paid on account of the employment by the undersigned of any laborers on the Project.

This Agreement is for the benefit of, and may be relied upon by the Owner, Design Professional and any Construction Manager. The undersigned hereby agrees to indemnify, defend and hold harmless each of the foregoing, the Project, work or improvement, and real property from any and all Claims, or liens that are or should have been released in accordance with this Agreement.

Company Name	State of: _____ County of _____
Authorized Signature (Company Officer)	Subscribed and sworn to before me this _____
Title	day of _____
Date	Notary Public: _____
	My Commission Expires: _____

**SUBCONTRACTOR'S – SUPPLIER'S
WAIVER & RELEASE AGREEMENT
("AGREEMENT")**

Project: Lift Station 39 Generator Improvements

The undersigned hereby acknowledges receipt of payment for all Work on the Project through the date of the prior Application for Payment by the Prime Contractor ("Prime Contractor") with which it has a contract. The undersigned acknowledges and agrees that the terms in this Agreement shall have the same meaning as in the Contract Documents for the Project.

In return for said payment, and/or pursuant to certain contractual obligations of the undersigned, the undersigned hereby waives and releases any rights it has or may have through the date of the Prime Contractor's last Application for Payment and to any and all Claims and liens related to the Project, including without limitation: Claims of payment, mechanic's liens, liens against funds, surety bond Claims, and Claims for breach of contract or unjust enrichment. The sole exception to this waiver and release is for any Claims the undersigned has made by properly and timely submitting a Statement of Claim form, a copy of which the undersigned represents has been delivered to the Owner and the Design Professional. The undersigned acknowledges and agrees that this waiver and release is intended to be a comprehensive release of all Claims and liens related to the Project, including without limitation all Claims against the Prime Contractor, the Prime Contractor's surety, the Owner, the Design Professional, any Construction Manager, and the employees, board members, agents and representatives of any of the foregoing persons. The undersigned further certifies that this Agreement covers Claims and liens by all persons with which it did business related to the Project, including without limitation sub-subcontractors and suppliers, through the date of the Prime Contractor's last Application for Payment. The undersigned represents that all such persons have signed an agreement in the form of this Agreement releasing any and all Claims and liens related to the Project, except for any Claims made by properly and timely submitting a Statement of Claim form, a copy of which has been delivered to the Design Professional and the Owner. The undersigned hereby represents and warrants that it has paid any and all welfare, pension, vacation or other contributions required to be paid on account of the employment by the undersigned of any laborers on the Project.

The undersigned agrees that upon receipt of the payment from the Prime Contractor with respect to the Prime Contractor's current Application for Payment, it shall, upon request of the Prime Contractor, Owner, Design Professional, or any Construction Manager, execute a waiver and release agreement in the form of this Agreement, except that such Agreement shall be current through the date of the Prime Contractor's current Payment Application. The undersigned further agrees that, upon receipt of such payment, it shall execute any other documents requested to cause the prejudicial release of any and all Claims and liens through the date of the Prime Contractor's current Payment Application.

This Agreement is for the benefit of, and may be relied upon by, the Prime Contractor, the Prime Contractor's surety, the Owner, the Design Professional and any Construction Manager. The undersigned hereby agrees to indemnify, defend and hold harmless each of the foregoing: the Project, its Work, and real property from any and all Claims and/or liens that are or should have been released in accordance with this Agreement and from any liability, cost, or expense incurred as a result of any breach of this Agreement by the undersigned.

_____ State of: _____ County of _____
Company Name

_____ Subscribed and sworn to before me this _____
Authorized Signature (Company Officer) day of _____

_____ Notary Public: _____

Title My Commission Expires: _____

_____ 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 _____, 200__.

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 8 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

INSTRUCTIONS FOR COMPLETION AND MAINTENANCE OF THE NOTICE OF COMMENCEMENT FOR THE CONSTRUCTION PROJECT

This is a protected document with tab stops in which you will insert project specific information. Complete the form once contracts are awarded for a construction project. The original Notice of Commencement should be kept in your file. Most of the contractor, surety, and surety agent information will be included on the Bid Form and Bid Guaranty documents.

Do not include this form in the Project Manual.

Here are some reminders relating to the Notice of Commencement (“NOC”):

1. Every owner is required to prepare a NOC for a construction project, no matter the size.
2. The Fiscal Officer or other person in charge of a project generally signs the NOC. The signature must be notarized.
3. On public projects, the NOC is **not** required to be recorded with the County Recorder's Office. You may receive requests for a copy of the recorded NOC, but this is simply a request from contractors and subcontractors who are using a service and/or forms that do not distinguish between public and private project requirements. Remember that a mechanic's lien or claim on a public construction project is not a lien against the real property on which the project is located; it is a claim against the balance of the prime contractor's contract.
4. The NOC does not have to be served on anyone. However, you must provide a copy to anyone who requests it. Keep a record of requests and responses. We recommend sending a copy of the complete NOC to each contractor with the signed construction contract. Each prime contractor has a similar obligation to provide a copy of the NOC if requested to any of its subcontractors and material suppliers. Coordinate with the Design Professional to respond to requests for the NOC. The request may also include a request for a copy of the Contractor's bond.
5. There is no timeline defined in the Revised Code for providing the requested NOC. However, providing a copy within 10 days is reasonable (and matches the time defined for private construction projects).
6. The NOC is **not** required to be posted at the project.
7. A Notice of Furnishing (“NOF”) may be sent to you by subcontractors and material suppliers to a prime contractor. Keep these with the NOC or the individual contractor's contract. The NOF can be important if an affidavit of claim or mechanic's lien is alleged later. Read the NOF to see if the company sending it is also requesting a copy of the NOC and/or a copy of the prime contractor's bond. It is easy to overlook, and we have found that requests often include a request for one of these items. Subcontractors and material suppliers with a contract directly with the prime contractor are not required to furnish a NOF; however, you may receive them from direct subcontractors and material suppliers. Subcontractors and material suppliers with contracts with a subcontract to the prime contractor are required to serve a NOF on the prime contractor to let the contractor know that they are involved with the project. The Owner is often copied on these transmittals.
8. If you receive an Affidavit of Claim or a Mechanic's Lien Affidavit, a copy must be sent to the prime contractor within 5 days of receipt. The prime contractor is being notified of the alleged claim and given 20 days to dispute the claim/lien. By statute this must be done, even if the prime contractor is also copied on the initial notice to you.
9. If you receive an Affidavit of Claim, you are required to set aside the amount of the claim from funds currently due the contractor and place it in an escrow account (or interest-bearing savings account) until resolution of the dispute. If the funds are not placed in an escrow account, you may have to pay a higher rate of interest. We can assist you in determining the appropriate amount to set aside and the timing for deposit of the funds into the separate account. For example, if the claim is for \$100,000 and the balance to be paid on the contract is only \$50,000, you are only obligated to withhold the \$50,000 remaining to be paid on the contract.
10. If contracts are awarded for future phases of the same project, you can deal with this by either simply adding the required information for each contractor to the list attached to the Notice or prepare a new Notice of Commencement.

**NOTICE OF COMMENCEMENT
FOR PUBLIC IMPROVEMENT
(Ohio Revised Code § 1311.252)**

State of Ohio,
County of _____; ss:

_____ name (fiscal officer or other person responsible for the project), the _____ title for _____ public owner, being first duly sworn, gives the following information with respect to the public improvement described herein:

1. The name of the public improvement is the Lift Station 39 Generator Improvements (the "Project").
2. The Project is located at Richland County Pump Station 39.
3. The Project Number is _____.
4. The name and address of the public authority are:
_____ name and address
5. The name and address of the principal contractor(s) working on the Project, its trade, and the name and address of its surety are as follows:

Contractor: _____	Trade: _____
Address: _____	Date Contract Entered: _____
Contact: _____	
Surety: _____	Tel: _____
Surety Address: _____	Fax: _____
Surety Agent: _____	Tel: _____
Surety Agent Address: _____	Fax: _____
Surety Agent Contact: _____	

If additional contracts are awarded for the Project, this Notice of Commencement will be updated to reflect any such additional principal contractors.

6. The following representative of the public authority should be served with a lien affidavit:
_____ name and address

with a copy to: Bricker & Eckler LLP
Attn: Construction Department
100 S. Third Street
Columbus, Ohio 43215

The foregoing is true and accurate to the best of my knowledge and the information available to me.

[signature]

[printed name]

Subscribed and sworn to before me a notary public this ____ day of _____, 200__, by _____, the _____ for _____.

My Commission Expires: _____

Notary Public

NOTICE OF COMMENCEMENT
(Ohio Revised Code § 1311.252)

ADDITIONAL CONTRACTORS for [REDACTED]

Contractor: [REDACTED]
Address: [REDACTED]
Contact: [REDACTED]
Surety: [REDACTED]
Surety Address: [REDACTED]
Surety Agent: [REDACTED]
Surety Agent Address: [REDACTED]
Surety Agent Contact: [REDACTED]

Trade: [REDACTED]
Date Contract Entered: [REDACTED]

Tel: [REDACTED]
Fax: [REDACTED]
Tel: [REDACTED]
Fax: [REDACTED]

Contractor: [REDACTED]
Address: [REDACTED]
Contact: [REDACTED]
Surety: [REDACTED]
Surety Address: [REDACTED]
Surety Agent: [REDACTED]
Surety Agent Address: [REDACTED]
Surety Agent Contact: [REDACTED]

Trade: [REDACTED]
Date Contract Entered: [REDACTED]

Tel: [REDACTED]
Fax: [REDACTED]
Tel: [REDACTED]
Fax: [REDACTED]

Contractor: [REDACTED]
Address: [REDACTED]
Contact: [REDACTED]
Surety: [REDACTED]
Surety Address: [REDACTED]
Surety Agent: [REDACTED]
Surety Agent Address: [REDACTED]
Surety Agent Contact: [REDACTED]

Trade: [REDACTED]
Date Contract Entered: [REDACTED]

Tel: [REDACTED]
Fax: [REDACTED]
Tel: [REDACTED]
Fax: [REDACTED]

Escrow Agreement

Name of Construction Project: Lift Station 39 Generator Improvements ("Project")

This Escrow Agreement (this "Agreement") is dated as of the date signed by the [REDACTED] (the "Owner"), and [REDACTED] Bank (the "Escrow Agent").

1. In accordance with certain contracts entered into between the various contractors set forth on the attached Exhibit A, and addendum thereto, (the "Contractors") and the Owner in connection with the Project, the Escrow Agent is hereby appointed to hold the funds for Contractors as set forth on Exhibit A, and any addenda thereto, being delivered to the Escrow Agent by the Owner herewith in compliance with Owner's obligations set forth in Ohio Revised Code Sections 153.13, 153.14 and 153.63 ("Escrow Funds") in one or more interest-bearing accounts, as requested by the Owner. The Escrow Agent hereby accepts such appointment.
2. The Escrow Agent shall hold the Escrow Funds (including income which shall become part of the Escrow Funds) and shall invest and reinvest the Escrow Funds in bank deposits as selected by Escrow Agent.
3. All earnings or other income received from such investment and reinvestment, less losses, if any, incurred on such investment and reinvestment, shall be added to the Escrow Funds and shall be disbursed as part of the Escrow Funds in accordance with Section (4) hereof. Escrow Agent shall provide Owner with a monthly statement accounting for principal and interest on each account established under this Agreement.
4. The Escrow Funds shall be held by the Escrow Agent and not disbursed until one of the following events has occurred, in which event the Escrow Agent is authorized and directed to disburse the Escrow Funds, or a portion thereof, in the manner indicated:
 - (a) As soon as practicable after receipt of written notice signed by the Owner and one or more individual Contractors set forth on the attached Exhibit A, and any addenda thereto, indicating that each such Contractor's contract has been completed ("Completion Certificate") and specifying the amount of the Escrow Funds to be released and the person to whom such funds are to be released.
 - (b) As soon as practicable after receipt of an arbitration order or an order of a court with appropriate jurisdiction, specifying the amount of the Escrow Funds to be released and the person(s) to whom the Escrow Funds are to be released ("Order").
 - (c) As soon as practicable after receipt of a written certificate signed by the Owner ("Owner Certificate") stating that either (i) a Contractor is in default or has breached its contract with the Owner and has not cured such violation to the Owners' satisfaction within thirty (30) days of written notice to such Contractor; or (ii) that a Contractor cannot be located and requesting the Escrow Funds be returned to the Owner. The Escrow Agent may reasonably request such other certifications, representations or legal opinions as it deems necessary to comply with such written request. Once such Escrow Funds are returned to the Owner pursuant to such request, the Escrow Agent shall have no duty or responsibility regarding such Escrow Funds.

Within 30 days of receipt by the Escrow Agent of a Completion Certificate, an Order or an Owner Certificate, the Escrow Agent shall pay the specified amount of Escrow Funds and an proportionate amount of the accrued income, less any applicable Escrow Agent fees and expenses, to the person so indicated in such Completion Certificate, Order or Owner Certificate. In no event shall the Escrow Agent be required to take any action under this Section 4 until it shall have received proper written notification in the form of either a Completion Certificate, an Order or an Owner Certificate.

5. The Escrow Agent's ordinary compensation for its services under this Agreement shall be fixed in the amount of [REDACTED] percent of income earned on the Escrow Funds, payable monthly, prorated among all accounts making up such Escrow Funds, but in no event shall the compensation exceed the interest earnings on the Escrowed Funds. In the event that it should become necessary for the Escrow Agent to perform extraordinary services, it shall be entitled to reasonable compensation therefore and to reimbursement for all advances, counsel fees and other expenses reasonably and

necessarily paid or incurred without negligence or bad faith by it, including costs and expenses of the Escrow Agent in defending itself against any such claim, action or proceeding brought against the Escrow Agent in connection with the exercise or performance of any of its powers or duties under this Agreement. In case any action or proceeding is brought against the Escrow Agent, the Owner shall have the right to assume the defense of the action or Proceeding. At its own expense, the Escrow Agent may employ separate counsel and participate in the defense.

6. The Escrow Agent may resign and be discharged from its duties and obligations hereunder by giving thirty (30) days written notice to the Owner and the Contractors. Upon any such resignation of the Escrow Agent, the Owner shall appoint a successor Escrow Agent who shall have all rights of an Escrow Agent hereunder and be bound by the provisions hereof. The Escrow Agent shall deliver the Escrow Funds in its possession at the time to the successor Escrow Agent so appointed.
7. The Escrow Agent undertakes to perform only such duties as are expressly set forth herein and shall not be subject to, nor have liability or responsibility under, nor be obligated to recognize any other agreement between, or directions or instructions of, any of the parties hereto or any other person in carrying out its duties hereunder, except for written directions or notices delivered to the Escrow Agent in accordance with Section 4 of this Agreement. The Escrow Agent's duties and obligations are purely ministerial in nature, and nothing herein shall be construed to give rise to any fiduciary obligations of the Escrow Agent.
8. The Owner and the Contractors shall furnish the Escrow Agent with a list of persons authorized on their behalf, together with specimen signatures of such persons. The Escrow Agent may rely upon any written Completion Certificate, Order, Owner Certificate, notice, instruction or request furnished to it hereunder and reasonably believed by it to be genuine and to have been signed or presented by the proper party or parties. The Escrow Agent may act in reliance upon the reasonable advice of counsel satisfactory to it in reference to any matter connected with its obligations hereunder and shall not incur any liability for any action taken in accordance with such advice.
9. The Escrow Agent shall not be responsible for any act or failure to act hereunder except in the case of its negligence.
10. In case of any dispute regarding this Agreement, the Escrow Agent shall not be required to institute legal proceedings of any kind and shall be entitled to deposit the Escrow Fund with any court of competent jurisdiction and thenceforth be relieved of any further duty or responsibility hereunder.
11. If all or part of the Escrow Funds held by the Escrow Agent hereunder shall be attached, garnished or levied upon under any order of court, or if the delivery thereof shall be stayed or enjoined by any order of court, or if any other order, judgment, or decree shall be made or entered by any court affecting the Escrow Funds or any part thereof, the writs, orders, judgments, or decrees so entered or issued, whether with or without jurisdiction, and in case it obeys and complies with any such writ, order judgment, or decree, it shall not be liable to the Owner or the Contractors, their successors, or assigns, notwithstanding that such writ, order, judgment or decree be subsequently reversed, modified, annulled, set aside, or vacated.
12. Any corporation or association into which the Escrow Agent may be converted or merged, or with which it or any successor to it may be consolidated, or to which it may sell or transfer its corporate trust assets and business as a whole or substantially as a whole, or any corporation or association resulting from any such conversion, sale, merger, consolidation or transfer to which it is a party, or any subsidiary corporation or association to which it may assign this Agreement shall, ipso facto, be and become successor escrow agent herewith, vested with the immunities, privileges and all other matters as was its predecessor, without the execution of filing or any instrument or any further act on the part of any of the parties hereto, notwithstanding anything herein to the contrary.
13. All escrow accounts which are held by the Escrow Agent shall be made available for audit by the Auditor of the State of Ohio.
14. This Agreement shall terminate and be of no further force and effect on the date when all monies comprising the Escrow Funds have been disbursed in accordance with the terms hereof.

15. This Agreement may be amended, modified or supplemented only by a writing signed by each of the parties, and any such amendment shall be effective only to the extent specifically set forth in such writing.
16. This Agreement shall be a contract under the laws of the State of Ohio and for all purposes shall be governed by and construed and enforced in accordance with the laws of said State.

IN WITNESS WHEREOF the parties hereto executed this agreement on the date and year first above written.

OWNER: Richland County Board of Commissioners

ESCROW AGENT: [REDACTED]

By: _____

By: _____

Name/Title: [REDACTED]

Name/Title: [REDACTED]

Date: _____

Date: _____

RETAINAGE ESCROW AGREEMENT

EXHIBIT A-1

[If more than one contractor, please attach additional Exhibits, e.g. A-1, A-2, etc.]

Contractor: _____

Address _____

Tax ID No.: _____

Signature (Authorized Representative)

Title

Date: _____

Contract No. _____

Retainage Escrow Deposit Amount: _____

Account No. _____

RETAINAGE ESCROW AGREEMENT

EXHIBIT A-__

[If more than one contractor, please attach additional Exhibits, e.g. A-1, A-2, etc.]

Contractor: _____

Address _____

Tax ID No.: _____

Signature (Authorized Representative)

Title

Date: _____

Contract No. _____

Retainage Escrow Deposit Amount: _____

Account No. _____



STEC-CC
Rev. 3/04

Sales and Use Tax Construction Contract Exemption Certificate

Identification of Contract:

Contractee's (owner's) name: _____

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 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 that 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 Ohio Revised Code (R.C.) section 5739.02(B)(12);	<input type="checkbox"/>	a building under a construction contract with an organization exempt from taxation under Internal Revenue Code section 501(c)(3) 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 R.C. section 307.696;	<input type="checkbox"/>	a hospital facility entitled to exemption under R.C. section 140.08;
<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: _____

Signed by: _____

Title: _____

Street address: _____

City, state, ZIP code: _____

Date: _____

Subcontractor

Name: _____

Signed by: _____

Title: _____

Street address: _____

City, state, ZIP code: _____

Date: _____

Political Subdivision

Name: _____

Signed by: _____

Title: _____

Street address: _____

City, state, ZIP code: _____

Date: _____

INSTRUCTIONS FOR COMPLETING AND USING THE CONSTRUCTION CONTRACT EXEMPTION CERTIFICATE

The tax exemption certificate permits the contractor to purchase materials to be incorporated into the project without paying Ohio sales tax. Complete one copy for each Contractor and provide the signed original certificate to each Contractor with the signed contract. **The certificate is not part of the Contract Documents.** Keep a copy of the signed certificate for the contract file.

Notes about completing the Form:

1. The correct box to check is usually the one at the top of the left column. Read the description carefully to be sure this applies to the project.
2. The Owner/Contractee at the bottom right of the form is usually the same as the Political Subdivision. If so, you can insert "same as above" in the Political Subdivision blank. If not, insert the correct information for the Political Subdivision.

Go to the following website link to obtain the form. Once there, you may fill in the form, print it out, and save it for future use.

http://tax.ohio.gov/documents/forms/fill-in/sales_and_use/exemption_certificates/STEC_CC_FI.doc

Do not include this form in the Project Manual.

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

Project:
Lift Station 39 Generator Improvements

Contract For:
[REDACTED]

Owner:
Richland County Board of Commissioners

CONTRACTOR: [insert name and address]
[REDACTED]

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:

[REDACTED]
(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): [REDACTED]
2. Additional days added to Date for Substantial Completion by Change Order: [REDACTED]
3. Additional days added by Claims that have been Finally Resolved: [REDACTED]
4. Date for Substantial Completion in the Contract Adjusted by days under No. 2 and No. 3 [REDACTED]

"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 [REDACTED].

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 [REDACTED] 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 [REDACTED].

Design Professional: [REDACTED]

Signature:

Date: [REDACTED]

991-7898.001
2022

Richland County, Ohio
Lift Station 39 Generator Improvements

ARPA EXHIBIT

AMERICAN RESCUE PLAN ACT (ARPA) Supplemental Conditions

Note: If any of these supplemental conditions are addressed in other areas of the contract documents the requirements that are more protective of the Owner will be enforced.

1. Contractor(s) agrees to comply with the requirements of section 603 of the Act, regulations adopted by Treasury pursuant to section 603(f) of the Act, and guidance issued by Treasury regarding the foregoing. Selected Contractor(s) also agrees to comply with all other applicable federal statutes, regulations, and executive orders, and Selected Contractor(s) shall provide for such compliance by other parties in any agreements it enters into with other parties relating to this award.
2. 2) Statutes and regulations prohibiting discrimination applicable to this award include, without limitation, the following:
 - a. Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.) and Treasury's implementing regulations at 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;
 - b. The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§ 3601 et seq.), which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;
 - c. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;
 - d. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.), and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and
 - e. Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§ 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.
3. Breach of Contract Terms. Any violation or breach of terms of this contract on the part of the Contractor may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this contract. The duties and obligations imposed by the contract documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.
4. Termination of Contract for Cause. If, through any cause, the Contractor shall fail to fulfill in timely and proper manner his obligations under this Contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this Contract, the Owner shall thereupon have the right to terminate this Contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least three (3) business days before the effective date of such termination. In such event, all finished or unfinished documents, materials, and construction work product delivered and/or prepared by the

Contractor under this Contract shall, at the option of the Owner, become its property and the Contractor shall be entitled to receive just and equitable compensation for any work satisfactorily completed hereunder.

Notwithstanding the above, the Contractor shall not be relieved of liability to the Owner for damages sustained by the Owner by virtue of any breach of the Contract by the Contractor, and the Owner may withhold any payment to the Contractor for the purpose of set-off until such time as the exact amount of damages due the Owner from the Contractor is determined.

5. Termination for Convenience. The Owner may terminate this Contract at any time giving at least three (3) business days' notice in writing to the Contractor. If the Contract is terminated by the Owner as provided herein, the Contractor will be paid for the time provided and expenses incurred up to the termination date. If this Contract is terminated due to the fault of the Contractor, the Termination of Contract for Cause paragraphs shall apply.
6. Compliance with the Copeland Anti-Kickback Act. The Contractor shall comply with 18 U.S.C. §874, 40 U.S.C. §3145, and the requirements of 29 CFR Part 3 as may be applicable, which are incorporated by reference into this contract.
7. 2 C.F.R. § 200.321 Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms. The Contractor will take affirmative steps to solicit and include small, minority, and women-owned businesses when possible in an effort to encourage participation and fair competition in providing supplies/services described in this solicitation. As set forth in 2 C.F.R. § 200.321(b)(1)-(5), such affirmative steps must include:
 - a. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
 - b. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
 - c. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
 - d. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
 - e. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.
 - f. If subcontracts are to be let, Contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms as required by 2 C.F.R. § 200.321
8. Compliance with the Contract Work Hours and Safety Standards Act.
 - a) No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or

- permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek.
- b) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (a) of this section, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States, for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph a of this section.
 - c) Withholding for unpaid wages and liquidated damages. The Owner or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph b of this section.
 - d) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraphs a through d of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs a through d of this section.
9. Access to Records. The Owner or its designee shall have access to any books, documents, papers and records of the Contractor which are directly pertinent to this specific contract, for the purpose of audits, examinations, and making excerpts and transcriptions.
10. Records and Audits. The Contractor shall maintain accounts and records, including personnel, property, and financial records, adequate to identify and account for all costs pertaining to the Contract and such other records as may be deemed necessary by the Owner to assure proper accounting for all project funds, both Federal and non-Federal shares. These records will be made available for audit purposes to the Owner or any authorized representative, and will be retained for three years after the expiration of this Contract unless permission to destroy them is granted by the Owner.
11. Clean Air Act and Federal Water Pollution Control Act. Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C.

7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

12. Domestic preferences for procurements. Contractor will comply with 2 CFR § 200.322. As appropriate and to the extent consistent with law, Contractor should, to the greatest extent practicable, prefer the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all Contracts and purchase orders for work or products under this award.
13. Procurement of recovered materials (2 CFR §200.323). All parties agree to comply with all applicable requirements of Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
 - a. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - b. Meeting contract performance requirements; or
 - c. At a reasonable price.

Information about this requirement, along with the list of EPA-designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurementguideline-cpg-program>.

14. Energy Efficiency. The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Public Law 94-163).
15. Interest of Member of the Governing Body. No member of the governing body of the Owner and no other officer, employee, or agent of the Owner, who exercises any functions or responsibilities in connection with the planning and carrying out of the program, shall have any personal financial interest, direct or indirect, in this Contract; and the Contractor shall take appropriate steps to assure compliance.
16. Interest of Other Local Public Officials. No other member of the governing body of the locality and no other public official of such locality, who exercises any functions or

responsibilities in connection with the planning and carrying out of the program, shall have any personal financial interest, direct, or indirect, in this Contract; and the Contractor shall take appropriate steps to assure compliance.

17. Interest of Contractor and Employees. The Contractor covenants that the Contractor presently has no interest and shall not acquire interest, direct, or indirect, in the study area or any parcels therein or any other interest which would conflict in any manner or degree with performance of the services hereunder. The Contractor further covenants that in the performance of this Contract, no person having any such interest shall be employed.

18. During the performance of this contract, the contractor agrees as follows:

- a. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

- b. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- c. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- d. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the

contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

- e. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- f. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- g. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- h. The contractor will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

19. Debarment and Suspension. This award is a covered transaction for purposes of 2 CFR Part 180 and 2 CFR Part 3000. As such, the Contractor is required to verify that none of the Contractor's principals (defined at 2 CFR §180.995) or its affiliates (defined at 2 CFR §180.905) are excluded (defined at 2 CFR §180.940) or disqualified (defined at 2 CFR §180.935). Contractor must comply with 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. This certification is a material representation of fact relied upon by the Owner. If it is later determined that the Selected Respondent(s) did not comply with 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C, in addition to remedies available to the Owner, the federal government may pursue available remedies, including but not limited to, suspension and/or debarment. The bidder or proposer agrees to comply with the requirements of 2 CFR Part 180, subpart C and 2 CFR Part 3000, subpart C, while this offer is valid and throughout the period of any contract that may arise from this offer. This Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

Mandated Affirmations

AFFIRMATION # 1: VENDOR AFFIDAVIT FORM

NON-DELINQUENCY OF PERSONAL PROPERTY TAXES:

The undersigned, being duly sworn, if a contract is awarded to you, states that we (the Vendor) are not charged at the time the bid was submitted with delinquent personal property taxes on the general tax list of personal property of any county in which you as a taxing district have territory and that we were not charged with delinquent property taxes on any such tax list. Nor do I have any debt owed to the State of Ohio.

NON-COLLUSION:

That the bid being submitted is genuine and not collusive or sham; that we/I have not colluded, conspired, connived, or agreed, directly or indirectly, with any other bidder or person, to submit a sham bid, or refrain from bidding; have not in any manner, directly or indirectly sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or any other bidder, to fix any overhead, profit or cost element of said bid price, or of that of any other bidder; to secure advantages against the County of Richland or any person or persons interested in the proposed contract; that all statements contained in said proposal of bid are true, and that, such bidder has not, directly or indirectly submitted this bid, or the contents thereof, or divulged information or data relative thereto to any other potential information or date relative thereto to any other potential bidder. Further, Affiant affirms that no county employee has any financial interest in this company or the bid being submitted.

That we do hereby affirm the above statements to be true and in consideration of the award of the aforementioned contract, the above statements are incorporated in said contract as a covenant of the undersigned.

**AFFIRMATION # 2: ASSURANCES OF COMPLIANCE WITH CIVIL RIGHTS
REQUIREMENTS ASSURANCES OF COMPLIANCE WITH TITLE VI OF
THE CIVIL RIGHTS ACT OF 1964**

As a condition of receipt of federal financial assistance from the Department of the Treasury, the recipient/contractor named below (hereinafter referred to as the "Recipient") provides the assurances stated herein. The federal financial assistance may include federal grants, loans and contracts to provide assistance to the Recipient's beneficiaries, the use or rent of Federal land or property at below market value, Federal training, a loan of Federal personnel, subsidies, and other arrangements with the intention of providing assistance. Federal financial assistance does not encompass contracts of guarantee or insurance, regulated programs, licenses, procurement contracts by the Federal government at market value, or programs that provide direct benefits. The assurances apply to all federal financial assistance from or funds made available through the Department of the Treasury, including any assistance that the Recipient may request in the future.

The Civil Rights Restoration Act of 1987 provides that the provisions of the assurances apply to all of the operations of the Recipient's program(s) and activity(ies), so long as any portion of the Recipient's program(s) or activity(ies) is federally assisted in the manner prescribed above.

1. Recipient ensures its current and future compliance with Title VI of the Civil Rights Act of 1964, as amended, which prohibits exclusion from participation, denial of the benefits of, or subjection to discrimination under programs and activities receiving federal financial assistance, of any person in the United States on the ground of race, color, or national origin (42 U.S.C. S 2000d et seq.), as implemented by the Department of the Treasury Title VI regulations at 31 CFR Part 22 and other pertinent executive orders such as Executive Order 13166, directives, circulars, policies, memoranda, and/or guidance documents.

2. Recipient acknowledges that Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency," seeks to improve access to federally assisted programs and activities for individuals who, because of national origin, have Limited English proficiency (LEP). Recipient understands that denying a person access to its programs, services, and activities because of LEP is a form of national origin discrimination prohibited under Title VI of the Civil Rights Act of 1964 and the Department of the Treasury's implementing regulations. Accordingly, Recipient shall initiate reasonable steps, or comply with the Department of the Treasury's directives, to ensure that LEP persons have meaningful access to its programs, services, and activities. Recipient understands and agrees that meaningful access may entail providing language assistance services, including oral interpretation and written translation where necessary, to ensure effective communication in the Recipient's programs, services, and activities.

3. Recipient agrees to consider the need for language services for LEP persons when Recipient develops applicable budgets and conducts programs, services, and activities. As a resource, the Department of the Treasury has published its LEP guidance at 70 FR 6067. For more information on taking reasonable steps to provide meaningful access for LEP persons, please visit <http://www.lep.gov>.

4. Recipient acknowledges and agrees that compliance with the assurances constitutes a condition of continued receipt of federal financial assistance and is binding upon Recipient and Recipient's successors, transferees, and assignees for the period in which such assistance is provided.

5. Recipient acknowledges and agrees that it must require any sub-grantees, contractors, subcontractors, successors, transferees, and assignees to comply with assurances 1-4 above, and agrees to incorporate the following language in every contract or agreement subject to Title VI and its regulations between the Recipient and the Recipient's sub-grantees, contractors, subcontractors, successors, transferees, and assignees:

The sub-grantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. SS 2000d et seq.), as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, which are herein

incorporated by reference and made apart of this contract (or agreement). Title VI also includes protection to persons with "Limited English Proficiency" in any program or activity receiving federal financial assistance, 42 U.S. C. 2000d et seq., as implemented by the Department of the Treasury's Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement.

6. Recipient understands and agrees that if any real property or structure is provided or improved with the aid of federal financial assistance by the Department of the Treasury, this assurance obligates the Recipient, or in the case of a subsequent transfer, the transferee, for the period during which the real property or structure is used for a purpose for which the federal financial assistance is extended or for another purpose Involving the provision of similar services or benefits. If any personal property is provided, this assurance obligates the Recipient for the period during which it retains ownership or possession of the property.

7. Recipient shall cooperate in any enforcement or compliance review activities by the Department of the Treasury of the aforementioned obligations. Enforcement may include investigation, arbitration, mediation, litigation, and monitoring of any settlement agreements that may result from these actions. The Recipient shall comply with information requests, on-site compliance reviews and reporting requirements.

8. Recipient shall maintain a complaint log and inform the Department of the Treasury of any complaints of discrimination on the grounds of race, color, or national origin, and limited English proficiency covered by Title VI of the Civil Rights Act of 1964 and implementing regulations and provide, upon request, a list of all such reviews or proceedings based on the complaint, pending or completed, including outcome. Recipient also must inform the Department of the Treasury if Recipient has received no complaints under Title VI.

9. Recipient must provide documentation of an administrative agency's or court's findings of non-compliance of Title VI and efforts to address the non-compliance, including any voluntary compliance or other agreements between the Recipient and the administrative agency that made the finding. If the Recipient settles a case or matter alleging such discrimination, the Recipient must provide documentation of the settlement. If Recipient has not been the subject of any court or administrative agency finding of discrimination, please so state.

10. If the Recipient makes sub-awards to other agencies or other entities, the Recipient is responsible for ensuring that sub-recipients also comply with Title VI and other applicable authorities covered in this document State agencies that make sub-awards must have in place standard grant assurances and review procedures to demonstrate that that they are effectively monitoring the civil rights compliance of subrecipients.

The United States of America has the right to seek judicial enforcement of the terms of this assurances document and nothing in this document alters or limits the federal enforcement measures that the United States may take in order to address violations of this document or applicable federal law.

Under penalty of perjury, the undersigned official(s) certifies that official(s) has read and understood the Recipient's obligations as herein described, that any information submitted in conjunction with this assurances document is accurate and complete, and that the Recipient is in compliance with the aforementioned nondiscrimination requirements.

AFFIRMATION # 3: CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

AFFIRMATION # 4: CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION FOR LOWER TIER COVERED TRANSACTIONS

Instructions for Certification

1. By signing and submitting this contract or proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or had become erroneous by reason of changed circumstances.

4. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meaning set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. The term "principals" includes, but is not limited to, officers, directors, owners, partners, and principal investigators. You may contact the person to which this proposal or contract is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by signing and submitting this contract or proposal that should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion- Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not proposed for debarment under 48 CFR part 9, subpart 9.4, debarred, suspended, ineligible, or voluntarily excluded from covered transactions, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is proposed for debarment under 48 CFR part 9, subpart 9.4, suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary
Exclusion For Lower Tier Covered Transactions**

(1) The prospective lower tier participant certifies, by signing and/or submission of this proposal or contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**AFFIRMATION # 5: CERTIFICATION REGARDING CERTAIN
TELECOMMUNICATIONS/VIDEO SURVEILLANCE
SERVICE/EQUIPMENT PROHIBITIONS. (“HUAWEI BAN”).**

The Contractor and any sub-Contractors affirms that they have not and will not obligate or loan or expend funds received through this Agreement to procure or obtain; extend or renew a contract to procure or obtain; or enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems, or that they will provide or are providing products that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities) including:

- (i) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- (ii) Telecommunications or video surveillance services provided by such entities or using such equipment.
- (iii) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

GLOBAL AFFIRMATION:

I, the undersigned, on behalf of myself and the Company I represent as noted below, affirm that I have read the entirety of this seven (7) page document and the text of the five (5) separate affirmation sections contained within them. I further hereby affirm that I will abide by those provisions noted above that are a required part of my Company being awarded the contract at issue, and that none of the circumstances noted above that would prevent me from legally being awarded this contract exist.

Company Name

Company Tax I.D. Number

Vendor Signature

Print Name & Title

Sworn to before me and subscribed in my presence this _____ day of _____, 20_____.

Notary Public Signature

Date Commission Expires

991-7898.001
2022

Richland County, Ohio
Lift Station 39 Generator Improvements

WAGE RATES

Prevailing Wage Rate Skilled Crafts

Name of Union: Asbestos Local 84 Heat & Frost Insulators

Change # : LCN01-2018fbLoc84

Craft : Asbestos Worker Effective Date : 06/06/2018 Last Posted : 06/06/2018

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Asbestos Insulation Worker	\$31.47		\$9.49	\$8.36	\$0.36	\$0.00	\$3.39	\$0.24	\$0.00	\$0.00	\$53.31	\$69.04
Apprentice	Percent											
1st Year	50.00	\$15.74	\$9.49	\$8.36	\$0.36	\$0.00	\$3.39	\$0.24	\$0.00	\$0.00	\$37.58	\$45.44
2nd Year	60.00	\$18.88	\$9.49	\$8.36	\$0.36	\$0.00	\$3.39	\$0.24	\$0.00	\$0.00	\$40.72	\$50.16
3rd Year	70.00	\$22.03	\$9.49	\$8.36	\$0.36	\$0.00	\$3.39	\$0.24	\$0.00	\$0.00	\$43.87	\$54.88
4th Year	80.00	\$25.18	\$9.49	\$8.36	\$0.36	\$0.00	\$3.39	\$0.24	\$0.00	\$0.00	\$47.02	\$59.60

Special Calculation Note : Other is Industry and Labor Management Fund

Ratio :

3 Journeymen to 1 Apprentice per shop

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ASHTABULA*, CARROLL, COLUMBIANA, COSHOCTON, ERIE*, 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. Erie except Sandusky city limits.

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: Asbestos Local 207 OH

Change # : LCN01-2018fbLoc207OH

Craft : Asbestos Worker Effective Date : 08/23/2018 Last Posted : 08/23/2018

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Asbestos Abatement	\$25.50	\$7.25	\$6.45	\$0.65	\$0.00	\$0.00	\$0.07	\$0.00	\$0.00	\$39.92	\$52.67
Trainee	\$16.50	\$7.25	\$1.50	\$0.65	\$0.00	\$0.00	\$0.07	\$0.00	\$0.00	\$25.97	\$34.22

Special Calculation Note :

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, 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 : Butler County:(townships of Fairfield,Hanover,Liberty,Milford,Morgan,Oxford,Ripley,Ross,StClair,Union & Wayne.) (Lemon & Madison) Warren County: (townships of: Deerfield, Hamilton, Harlan, Salem, Union & Washington). (Clear Creek, Franklin, Mossie, Turtle Creek & Wayney). Ashtabula County: (post offices & townships of Ashtabula, Austinburg, Geneva, Harperfield, Jefferson, Plymouth & Saybrook) (townships of Andover, Cherry Valley, Colbrook, Canneaut, Denmark, Dorset, East Orwell, Hartsgrrove, Kingville, Lenox, Monroe,Morgan,New Lyme,North Kingsville, Orwell, Pierpoint, Richmond Rock Creek, Rome, Sheffield, Trumbull, Wayne, Williamsfield & Windsor) Erie County:(post offices & townships of Berlin, Berlin Heights,Birmingham,Florence ,Huron, Milan, Shinrock & Vermilion)

Details :

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.

An Abatement Journeyman is anyone who has more than 300 hours in the Asbestos Abatement field.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Boilermaker Local 85

Change # : LCN01-2012kpLoc85

Craft : Boilermaker Effective Date : 03/28/2012 Last Posted : 03/28/2012

	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	\$69.69
Apprentice	Percent											
1st 6 months	70.00	\$21.71	\$6.97	\$0.25	\$0.35	\$0.00	\$0.25	\$2.09	\$0.00	\$0.00	\$31.62	\$42.47
2nd 6 months	72.50	\$22.48	\$6.97	\$0.25	\$0.35	\$0.00	\$0.25	\$2.09	\$0.00	\$0.00	\$32.39	\$43.63
3rd 6 months	75.00	\$23.26	\$6.97	\$0.25	\$0.35	\$0.00	\$0.25	\$2.09	\$0.00	\$0.00	\$33.17	\$44.80
4th 6 months	77.50	\$24.03	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$47.21	\$59.23
5th 6 months	80.00	\$24.81	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$47.99	\$60.39
6th 6 months	85.00	\$26.36	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$49.54	\$62.72
7th 6 months	90.00	\$27.91	\$6.97	\$10.77	\$0.35	\$0.00	\$3.00	\$2.09	\$0.00	\$0.00	\$51.09	\$65.04
8th 6 months	95.00	\$29.46	\$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 40

Change # : LCN01-2021fbLoc40

Craft : Bricklayer Effective Date : 06/03/2021 Last Posted : 06/03/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer	\$31.93		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$54.47	\$70.43
Pointer Caulker Cleaner	\$31.93		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$54.47	\$70.43
Tile Setter, Stone, Marble & Cement Masons, Plasterer and Terrazzo & Mosaic Workers	\$31.93		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$54.47	\$70.43
Tile Marble Terrazzo Finishers	\$28.68		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$51.22	\$65.56
Lay Out Man	\$31.93		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$54.47	\$70.43
Saw Man	\$31.93		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$54.47	\$70.43
Stack Worker	\$33.43		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$55.97	\$72.68
Refractory Hot Work	\$34.43		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$56.97	\$74.18
Carbon Masonry and Swing Sand Blasting	\$33.43		\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$55.97	\$72.68
Masonry Maintenance Specialist	\$15.97		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$15.97	\$23.96
Apprentice	Percent											
1st year	60.00	\$19.16	\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$41.70	\$51.28
2nd year	70.00	\$22.35	\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$44.89	\$56.07
3rd year	80.00	\$25.54	\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$48.08	\$60.86

4th year	92.00	\$29.38	\$9.75	\$11.29	\$0.75	\$0.00	\$0.75	\$0.00	\$0.00	\$0.00	\$51.92	\$66.60
Mason Trainee												
1-90 Days	45.00	\$14.37	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14.37	\$21.55
91-365 Days	45.00	\$14.37	\$9.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$24.12	\$31.30
2nd Year	50.00	\$15.97	\$9.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.71	\$33.70

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***

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CRAWFORD, HARDIN, HOLMES,
 MARION, MORROW, RICHLAND, WAYNE,
 WYANDOT

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

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: Carpenter Commercial NE Zone 2D

Change # : LCN01-2021fbLocNEZone2D

Craft : Carpenter Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	\$28.23		\$7.81	\$10.23	\$0.56	\$0.00	\$1.60	\$0.00	\$0.00	\$0.00	\$48.43	\$62.55
Apprentice	Percent											
1st 3 Months	60.00	\$16.94	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16.94	\$25.41
2nd 3 Months	60.00	\$16.94	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.31	\$33.78
2nd 6 Months is 1st year	60.00	\$16.94	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.31	\$33.78
3rd 6 Months	60.00	\$16.94	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.31	\$33.78
4th 6 Months is 2nd year	60.00	\$16.94	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.31	\$33.78
5th 6 Months	70.00	\$19.76	\$7.81	\$7.16	\$0.56	\$0.00	\$1.12	\$0.00	\$0.00	\$0.00	\$36.41	\$46.29
6th 6 Months is 3rd year	75.00	\$21.17	\$7.81	\$7.67	\$0.56	\$0.00	\$1.20	\$0.00	\$0.00	\$0.00	\$38.41	\$49.00
7th 6 Months	80.00	\$22.58	\$7.81	\$8.18	\$0.56	\$0.00	\$1.28	\$0.00	\$0.00	\$0.00	\$40.41	\$51.71
8th 6 Months is 4th year	85.00	\$24.00	\$7.81	\$8.70	\$0.56	\$0.00	\$1.36	\$0.00	\$0.00	\$0.00	\$42.43	\$54.42

Special Calculation Note :

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ERIE, HURON, RICHLAND

Special Jurisdictional Note :

Details :

Prevailing Wage Rate

Skilled Crafts

Name of Union: Carpenter Floorlayer NE Zone 2D

Change # : LCN01-2021fbLocNEZone2D

Craft : Carpenter Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Floorlayer	\$28.23		\$7.81	\$10.23	\$0.58	\$0.00	\$1.60	\$0.00	\$0.00	\$0.00	\$48.45	\$62.57
Apprentice	Percent											
1st 3 Months	60.00	\$16.94	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16.94	\$25.41
2nd 3 Months	60.00	\$16.94	\$7.81	\$0.00	\$0.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.33	\$33.80
2nd 6 Months	60.00	\$16.94	\$7.81	\$0.00	\$0.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.33	\$33.80
3rd 6 Months	60.00	\$16.94	\$7.81	\$0.00	\$0.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.33	\$33.80
4th 6 Months	60.00	\$16.94	\$7.81	\$0.00	\$0.58	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.33	\$33.80
5th 6 Months	70.00	\$19.76	\$7.81	\$7.16	\$0.58	\$0.00	\$1.12	\$0.00	\$0.00	\$0.00	\$36.43	\$46.31
6th 6 Months	75.00	\$21.17	\$7.81	\$7.67	\$0.58	\$0.00	\$1.20	\$0.00	\$0.00	\$0.00	\$38.43	\$49.02
7th 6 Months	80.00	\$22.58	\$7.81	\$8.18	\$0.58	\$0.00	\$1.28	\$0.00	\$0.00	\$0.00	\$40.43	\$51.73
8th 6 Months	85.00	\$24.00	\$7.81	\$8.70	\$0.58	\$0.00	\$1.36	\$0.00	\$0.00	\$0.00	\$42.45	\$54.44

Special Calculation Note :

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ERIE, HURON, RICHLAND

Special Jurisdictional Note :

Details :

Prevailing Wage Rate

Skilled Crafts

Name of Union: Carpenter Insulation NE Zone 2D

Change # : LCN01-2021fbLocNEZone2D

Craft : Carpenter Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Insulation	\$22.58		\$7.81	\$10.23	\$0.56	\$0.00	\$1.60	\$0.00	\$0.00	\$0.00	\$42.78	\$54.07
Apprentice	Percent											
1st 3 Months	50.00	\$11.29	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$11.29	\$16.93
2nd 3 Months	50.00	\$11.29	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.66	\$25.30
2nd 6 Months	50.00	\$11.29	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19.66	\$25.30
3rd 6 Months	55.00	\$12.42	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20.79	\$27.00
4th 6 Months	60.00	\$13.55	\$7.81	\$0.00	\$0.56	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$21.92	\$28.69
5th 6 Months	70.00	\$15.81	\$7.81	\$7.16	\$0.56	\$0.00	\$1.12	\$0.00	\$0.00	\$0.00	\$32.46	\$40.36
6th 6 Months	75.00	\$16.93	\$7.81	\$7.67	\$0.56	\$0.00	\$1.20	\$0.00	\$0.00	\$0.00	\$34.18	\$42.64
7th 6 Months	80.00	\$18.06	\$7.81	\$8.18	\$0.56	\$0.00	\$1.28	\$0.00	\$0.00	\$0.00	\$35.89	\$44.93
8th 6 Months	85.00	\$19.19	\$7.81	\$8.70	\$0.56	\$0.00	\$1.36	\$0.00	\$0.00	\$0.00	\$37.62	\$47.22

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, ERIE, HURON, RICHLAND

Special Jurisdictional Note :

Details :

Prevailing Wage Rate

Skilled Crafts

Name of Union: Carpenter Millwright NE Zone M1

Change # : LCN01-2021fbLocNEZoneM1

Craft : Carpenter Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Millwright	\$30.95		\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$54.90	\$70.37
Certified Welder	\$31.95		\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$55.90	\$71.87
Layout man on Monorail	\$32.70		\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$56.65	\$73.00
Apprentice	Percent											
1st 6 months	60.00	\$18.57	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$42.52	\$51.81
2nd 6 months	60.00	\$18.57	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$42.52	\$51.81
3rd 6 months	62.00	\$19.19	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$43.14	\$52.73
4th 6 months	65.50	\$20.27	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$44.22	\$54.36
5th 6 months	69.00	\$21.36	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$45.31	\$55.98
6th 6 months	72.50	\$22.44	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$46.39	\$57.61
7th 6 months	76.00	\$23.52	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$47.47	\$59.23
8th 6 months	80.00	\$24.76	\$7.85	\$10.73	\$0.56	\$0.00	\$4.76	\$0.05	\$0.00	\$0.00	\$48.71	\$61.09

Special Calculation Note : Other \$0.05 is for UBC Millwright Promotional Fund

Ratio :

2 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 NE District Industrial Dock & Door

Change # : LCN01-2014fbCarpNEStatewide

Craft : Carpenter Effective Date : 03/05/2014 Last Posted : 03/05/2014

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter	\$19.70		\$5.05	\$1.00	\$0.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$25.90	\$35.75
Trainee	Percent											
1st Year	60.00	\$11.82	\$5.05	\$1.00	\$0.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$18.02	\$23.93
2nd Year	80.20	\$15.80	\$5.05	\$1.00	\$0.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22.00	\$29.90

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

1 Journeymen to 1 Trainee

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 : Industrial Dock and Door is the installation of overhead doors, roll up doors and dock leveling equipment

Details :

10/27/10 New Contract jc

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Pile Driver NE Zone P1

Change # : LCN01-2021fbLocNEZoneP1

Craft : Carpenter Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Pile Driver	\$31.24		\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$54.90	\$70.52
Diver	\$46.86		\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$70.52	\$93.95
Certified Welder	\$32.29		\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$55.95	\$72.10
Apprentice	Percent											
1st 6 months	60.00	\$18.74	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$42.40	\$51.78
2nd 6 months	60.00	\$18.74	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$42.40	\$51.78
3rd 6 months	62.00	\$19.37	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$43.03	\$52.71
4th 6 months	65.50	\$20.46	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$44.12	\$54.35
5th 6 months	69.00	\$21.56	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$45.22	\$55.99
6th 6 months	72.50	\$22.65	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$46.31	\$57.63
7th 6 months	76.00	\$23.74	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$47.40	\$59.27
8th 6 months	80.00	\$24.99	\$7.84	\$10.73	\$0.56	\$0.00	\$4.53	\$0.00	\$0.00	\$0.00	\$48.65	\$61.15

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

2 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 Bricklayer Local 97 HevHwy A

Change # : LCN01-2021fbHvyHwy

Craft : Bricklayer Effective Date : 06/01/2021 Last Posted : 05/26/2021

	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	\$30.40		\$9.50	\$7.57	\$0.48	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.95	\$63.15
Apprentice	Percent											
1st year	50.00	\$15.20	\$9.50	\$7.57	\$0.48	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.75	\$40.35
2nd year	70.00	\$21.28	\$9.50	\$7.57	\$0.48	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.83	\$49.47
3rd year	90.00	\$27.36	\$9.50	\$7.57	\$0.48	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.91	\$58.59

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

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 :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

(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: Cement Mason Bricklayer Local 97 HevHwy B

Change # : LCN01-2021fbHvyHwy

Craft : Bricklayer Effective Date : 06/01/2021 Last Posted : 05/26/2021

	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	\$31.39		\$9.50	\$7.57	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.95	\$64.64
Apprentice	Percent											
1st year	50.00	\$15.70	\$9.50	\$7.57	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.26	\$41.10
2nd year	70.00	\$21.97	\$9.50	\$7.57	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.53	\$50.52
3rd year	90.00	\$28.25	\$9.50	\$7.57	\$0.49	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.81	\$59.94

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

3 Journeymen to 1 Apprentice
 6 Journeymen to 2 Apprentice
 9 Journeymen to 2 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 :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

(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: Cement Mason Local 132 (Columbus)

Change # : LCN01-2021fbLoc132

Craft : Cement Effective Date : 06/01/2021 Last Posted : 05/26/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	\$27.98		\$7.85	\$4.55	\$0.65	\$0.00	\$3.10	\$0.00	\$0.00	\$0.00	\$44.13	\$58.12
Apprentice	Percent											
1st yr	70.00	\$19.59	\$7.85	\$4.55	\$0.65	\$0.00	\$3.10	\$0.00	\$0.00	\$0.00	\$35.74	\$45.53
2nd yr	80.00	\$22.38	\$7.85	\$4.55	\$0.65	\$0.00	\$3.10	\$0.00	\$0.00	\$0.00	\$38.53	\$49.73
3rd yr	90.00	\$25.18	\$7.85	\$4.55	\$0.65	\$0.00	\$3.10	\$0.00	\$0.00	\$0.00	\$41.33	\$53.92

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

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 or window jack scaffold shall receive the following rates:

\$0.50 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 Statewide HevHwy Exhibit A District III

Change # : OCN01-2021fbCementHevHwy

Craft : Cement Mason Effective Date : 05/01/2021 Last Posted : 04/23/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	\$30.50		\$8.25	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$49.07	\$64.32
Apprentice	Percent											
1st Year	70.00	\$21.35	\$8.25	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$39.92	\$50.60
2nd Year	80.00	\$24.40	\$8.25	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$42.97	\$55.17
3rd Year	90.00	\$27.45	\$8.25	\$7.35	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$46.02	\$59.75

Special Calculation Note : Other \$0.07 is for International Training Fund

Ratio :

1 Journeymen to 1 Apprentice
2 to 1 thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ATHENS, BELMONT, CHAMPAIGN, CLARK, CLINTON, COSHOCTON, CRAWFORD, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GREENE, GUERNSEY, HARRISON, HOCKING, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, MADISON, MARION, MEIGS, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, UNION, VINTON, WASHINGTON, WYANDOT

Special Jurisdictional Note : (A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site, Heavy Construction, Airport Construction Or Railroad Construction Work.

Details :

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 71 High Tension Pipe Type Cable

Change # : LCN01-2021fbLoc7

Craft : Lineman Effective Date : 03/16/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$45.61	\$6.75	\$1.37	\$0.46	\$0.00	\$10.95	\$0.60	\$0.00	\$0.00	\$65.74	\$88.54
Certified Lineman Welder	\$45.61	\$6.75	\$1.37	\$0.46	\$0.00	\$10.95	\$0.60	\$0.00	\$0.00	\$65.74	\$88.54
Certified Cable Splicer	\$45.61	\$6.75	\$1.37	\$0.46	\$0.00	\$10.95	\$0.60	\$0.00	\$0.00	\$65.74	\$88.54
Operator A	\$40.88	\$6.75	\$1.23	\$0.41	\$0.00	\$9.81	\$0.60	\$0.00	\$0.00	\$59.68	\$80.12
Operator B	\$36.20	\$6.75	\$1.09	\$0.36	\$0.00	\$8.69	\$0.60	\$0.00	\$0.00	\$53.69	\$71.79
Operator C	\$29.12	\$6.75	\$0.87	\$0.29	\$0.00	\$6.99	\$0.60	\$0.00	\$0.00	\$44.62	\$59.18
Groundman 0-12 months Exp	\$22.81	\$6.75	\$0.68	\$0.23	\$0.00	\$5.47	\$0.60	\$0.00	\$0.00	\$36.54	\$47.94
Groundman 0-12 months Exp w/CDL	\$25.09	\$6.75	\$0.75	\$0.25	\$0.00	\$6.02	\$0.60	\$0.00	\$0.00	\$39.46	\$52.01
Groundman 1 yr or more	\$25.09	\$6.75	\$0.75	\$0.25	\$0.00	\$6.02	\$0.60	\$0.00	\$0.00	\$39.46	\$52.01
Groundman 1 yr or more w/CDL	\$29.65	\$6.75	\$0.85	\$0.28	\$0.00	\$6.50	\$0.60	\$0.00	\$0.00	\$44.63	\$59.46
Equipment Mechanic A	\$36.20	\$6.75	\$1.09	\$0.36	\$0.00	\$8.69	\$0.60	\$0.00	\$0.00	\$53.69	\$71.79
Equipment Mechanic B	\$32.66	\$6.75	\$0.98	\$0.33	\$0.00	\$7.84	\$0.60	\$0.00	\$0.00	\$49.16	\$65.49
Equipment Mechanic C	\$29.12	\$6.75	\$0.87	\$0.29	\$0.00	\$6.99	\$0.60	\$0.00	\$0.00	\$44.62	\$59.18
X-Ray Technician	\$45.61	\$6.75	\$1.37	\$0.46	\$0.00	\$10.95	\$0.60	\$0.00	\$0.00	\$65.74	\$88.54

Apprentice	Percent											
1st 1000 hrs	60.00	\$27.37	\$6.75	\$0.82	\$0.27	\$0.00	\$6.57	\$0.60	\$0.00	\$0.00	\$42.38	\$56.06
2nd 1000 hrs	65.00	\$29.65	\$6.75	\$0.89	\$0.30	\$0.00	\$7.12	\$0.60	\$0.00	\$0.00	\$45.31	\$60.13
3rd 1000 hrs	70.00	\$31.93	\$6.75	\$0.96	\$0.32	\$0.00	\$7.66	\$0.60	\$0.00	\$0.00	\$48.22	\$64.18
4th 1000 hrs	75.00	\$34.21	\$6.75	\$1.03	\$0.34	\$0.00	\$8.21	\$0.60	\$0.00	\$0.00	\$51.14	\$68.24
5th 1000 hrs	80.00	\$36.49	\$6.75	\$1.09	\$0.36	\$0.00	\$8.76	\$0.60	\$0.00	\$0.00	\$54.05	\$72.29
6th 1000 hrs	85.00	\$38.77	\$6.75	\$1.16	\$0.39	\$0.00	\$9.30	\$0.60	\$0.00	\$0.00	\$56.97	\$76.35
7th 1000 hrs	90.00	\$41.05	\$6.75	\$1.23	\$0.41	\$0.00	\$9.85	\$0.60	\$0.00	\$0.00	\$59.89	\$80.41

Special Calculation Note : Other is Health Retirement Account

Operator "A"

John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater then 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.

*All Operators of cranes 45 ton or larger shall be paid the journeyman rate of pay. \$0.30 is for Health Retirement 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 :

Heli - Arc Welding will be paid \$.30 above Journeyman rate. Additional compensation of 10% over the Journeyman Lineman and Journeyman Technician for performing work on structures outside of buildings such as water towers, smoke stacks, radio and television towers, more than 75' above the ground.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 71 Outside (Central OH Chapter)

Change # : LCR01-2021fbLoc71CentralOhio

Craft : Lineman Effective Date : 03/16/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$40.31	\$6.75	\$1.21	\$0.40	\$0.00	\$7.66	\$0.06	\$0.00	\$0.00	\$56.39	\$76.54
Traffic Signal & Lighting Journeyman	\$38.77	\$6.75	\$1.16	\$0.39	\$0.00	\$7.37	\$0.06	\$0.00	\$0.00	\$54.50	\$73.89
Equipment Operator	\$35.41	\$6.75	\$1.06	\$0.35	\$0.00	\$6.73	\$0.06	\$0.00	\$0.00	\$50.36	\$68.06
Groundman 0-12 months (W/O CDL)	\$21.47	\$6.75	\$0.64	\$0.21	\$0.00	\$4.08	\$0.06	\$0.00	\$0.00	\$33.21	\$43.95
Groundman 0-12 Months W/CDL	\$23.46	\$6.75	\$0.70	\$0.23	\$0.00	\$4.46	\$0.06	\$0.00	\$0.00	\$35.66	\$47.39
Groundman greater than 1 Year W/CDL	\$25.45	\$6.75	\$0.76	\$0.25	\$0.00	\$4.84	\$0.06	\$0.00	\$0.00	\$38.11	\$50.83
Traffic Signal Apprentices											
1st 1,000 hours	\$23.26	\$6.75	\$0.70	\$0.23	\$0.00	\$4.42	\$0.06	\$0.00	\$0.00	\$35.42	\$47.05
2nd 1,000 hours	\$25.20	\$6.75	\$0.76	\$0.25	\$0.00	\$4.79	\$0.06	\$0.00	\$0.00	\$37.81	\$50.41
3rd 1,000 hours	\$27.14	\$6.75	\$0.81	\$0.27	\$0.00	\$5.16	\$0.06	\$0.00	\$0.00	\$40.19	\$53.76
4th 1,000 hours	\$29.08	\$6.75	\$0.87	\$0.29	\$0.00	\$5.53	\$0.06	\$0.00	\$0.00	\$42.58	\$57.12
5th 1,000 hours	\$31.01	\$6.75	\$0.93	\$0.31	\$0.00	\$5.89	\$0.06	\$0.00	\$0.00	\$44.95	\$60.46
6th 1,000 hours	\$34.89	\$6.75	\$1.05	\$0.35	\$0.00	\$6.63	\$0.06	\$0.00	\$0.00	\$49.73	\$67.17

Apprentice Lineman	Percent											
1st 1,000 Hours	60.00	\$24.19	\$6.75	\$0.73	\$0.24	\$0.00	\$4.60	\$0.06	\$0.00	\$0.00	\$36.57	\$48.66
2nd 1,000 Hours	65.00	\$26.20	\$6.75	\$0.79	\$0.26	\$0.00	\$4.98	\$0.06	\$0.00	\$0.00	\$39.04	\$52.14
3rd 1,000 Hours	70.00	\$28.22	\$6.75	\$0.85	\$0.28	\$0.00	\$5.36	\$0.06	\$0.00	\$0.00	\$41.52	\$55.63
4th 1,000 Hours	75.00	\$30.23	\$6.75	\$0.91	\$0.30	\$0.00	\$5.74	\$0.06	\$0.00	\$0.00	\$43.99	\$59.11
5th 1,000 Hours	80.00	\$32.25	\$6.75	\$0.97	\$0.32	\$0.00	\$6.13	\$0.06	\$0.00	\$0.00	\$46.48	\$62.60
6th 1,000 Hours	85.00	\$34.26	\$6.75	\$1.03	\$0.34	\$0.00	\$6.51	\$0.06	\$0.00	\$0.00	\$48.95	\$66.09
7th 1,000 Hours	90.00	\$36.28	\$6.75	\$1.09	\$0.36	\$0.00	\$6.89	\$0.06	\$0.00	\$0.00	\$51.43	\$69.57

Special Calculation Note : Other is Safety & Education Fund.

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 that 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

Change # : LCN01-2021fbLoc7

Craft : Lineman Effective Date : 03/16/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$43.22	\$6.75	\$1.30	\$0.43	\$0.00	\$10.37	\$0.60	\$0.00	\$0.00	\$62.67	\$84.28
Substation Technician	\$43.22	\$6.75	\$1.30	\$0.43	\$0.00	\$10.37	\$0.60	\$0.00	\$0.00	\$62.67	\$84.28
Cable Splicer	\$45.26	\$6.75	\$1.36	\$0.45	\$0.00	\$10.86	\$0.60	\$0.00	\$0.00	\$65.28	\$87.91
Operator A	\$38.75	\$6.75	\$1.16	\$0.39	\$0.00	\$9.30	\$0.60	\$0.00	\$0.00	\$56.95	\$76.32
Operator B	\$34.27	\$6.75	\$1.03	\$0.34	\$0.00	\$8.22	\$0.60	\$0.00	\$0.00	\$51.21	\$68.34
Operator C	\$27.54	\$6.75	\$0.83	\$0.28	\$0.00	\$6.61	\$0.60	\$0.00	\$0.00	\$42.61	\$56.38
Groundman 0-12 months Exp	\$21.61	\$6.75	\$0.65	\$0.22	\$0.00	\$5.19	\$0.60	\$0.00	\$0.00	\$35.02	\$45.82
Groundman 0-12 months Exp w/CDL	\$23.77	\$6.75	\$0.71	\$0.24	\$0.00	\$5.70	\$0.60	\$0.00	\$0.00	\$37.77	\$49.66
Groundman 1 yr or more	\$23.77	\$6.75	\$0.71	\$0.24	\$0.00	\$5.70	\$0.60	\$0.00	\$0.00	\$37.77	\$49.66
Groundman 1 yr or more w/CDL	\$28.09	\$6.75	\$0.84	\$0.28	\$0.00	\$6.74	\$0.60	\$0.00	\$0.00	\$43.30	\$57.35
Equipment Mechanic A	\$34.27	\$6.75	\$1.03	\$0.34	\$0.00	\$8.22	\$0.60	\$0.00	\$0.00	\$51.21	\$68.34
Equipment Mechanic B	\$30.91	\$6.75	\$0.93	\$0.31	\$0.00	\$7.42	\$0.60	\$0.00	\$0.00	\$46.92	\$62.38
Equipment Mechanic C	\$27.54	\$6.75	\$0.83	\$0.28	\$0.00	\$6.61	\$0.60	\$0.00	\$0.00	\$42.61	\$56.38
Line Truck w/uuger	\$30.44	\$6.75	\$0.91	\$0.30	\$0.00	\$7.31	\$0.60	\$0.00	\$0.00	\$46.31	\$61.53
Apprentice	Percent										

1st 1000 hrs	60.00	\$25.93	\$6.75	\$0.78	\$0.26	\$0.00	\$6.22	\$0.60	\$0.00	\$0.00	\$40.54	\$53.51
2nd 1000 hrs	65.00	\$28.09	\$6.75	\$0.84	\$0.28	\$0.00	\$6.74	\$0.60	\$0.00	\$0.00	\$43.30	\$57.35
3rd 1000 hrs	70.00	\$30.25	\$6.75	\$0.91	\$0.30	\$0.00	\$7.26	\$0.60	\$0.00	\$0.00	\$46.07	\$61.20
4th 1000 hrs	75.00	\$32.42	\$6.75	\$0.97	\$0.32	\$0.00	\$7.78	\$0.60	\$0.00	\$0.00	\$48.84	\$65.04
5th 1000 hrs	80.00	\$34.58	\$6.75	\$1.04	\$0.35	\$0.00	\$8.30	\$0.60	\$0.00	\$0.00	\$51.62	\$68.90
6th 1000 hrs	85.00	\$36.74	\$6.75	\$1.10	\$0.37	\$0.00	\$8.82	\$0.60	\$0.00	\$0.00	\$54.38	\$72.75
7th 1000 hrs	90.00	\$38.90	\$6.75	\$1.17	\$0.39	\$0.00	\$9.34	\$0.60	\$0.00	\$0.00	\$57.15	\$76.60

Special Calculation Note : Other is Health Retirement Account

Operator "A"

John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater then 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.

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 : 0.30 is for Health Retirement Account.

Details :

Heli - Arc Welding will be paid \$.30 above Journeyman rate. Additional compensation of 10% over the Journeyman Lineman and Journeyman Technician for performing work on structures outside of buildings such

as water towers, smoke stacks, radio and television towers, more than 75' above the ground.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 71 Voice Data Video Outside

Change # : LCR01-2017fbLoc71VDV

Craft : Voice Data Video Effective Date : 10/18/2017 Last Posted : 10/18/2017

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Installer Technician I	\$23.46	\$5.50	\$0.70	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$29.96	\$41.69
Installer Technician II	\$22.37	\$5.50	\$0.67	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$28.84	\$40.03
Equipment Operator I	\$22.37	\$5.50	\$0.67	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$28.84	\$40.03
Equipment Operator II	\$18.43	\$5.50	\$0.55	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$24.78	\$33.99
Installer /Repair Outside	\$22.37	\$5.50	\$0.67	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$28.84	\$40.03
Ground Driver W/CDL	\$15.83	\$5.50	\$0.47	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$22.10	\$30.01
Groundman	\$13.24	\$5.50	\$0.40	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$19.44	\$26.06
Cable Splicer	\$23.46	\$5.50	\$0.70	\$0.00	\$0.00	\$0.30	\$0.00	\$0.00	\$0.00	\$29.96	\$41.69

Special Calculation Note :

Ratio :

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.

Journeyman 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.

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 I: Able to operate a digger derrick or bucket truck. Have at least 5 years of experience and must have a valid CDL license.

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 downguys, 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 downguys, making up material, and getting appropriate tools for the job. Experience 0-5 years.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 688 Inside Lt Commercial South West

Change # : LCN01-2021fbLoc688in

Craft : Electrical Effective Date : 06/29/2021 Last Posted : 06/29/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$31.00		\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.93	\$0.00	\$0.00	\$52.29	\$67.79
Over 50 feet	\$62.00		\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$1.86	\$0.00	\$0.00	\$84.22	\$115.22
CE-3 12,001-14,000 Hrs	\$22.99		\$6.35	\$0.69	\$0.68	\$0.00	\$0.69	\$0.00	\$0.00	\$0.00	\$31.40	\$42.89
CE-2 10,001-12,000 Hrs	\$18.06		\$6.35	\$0.54	\$0.68	\$0.00	\$0.54	\$0.00	\$0.00	\$0.00	\$26.17	\$35.20
CE-1 8,001-10,000 Hrs	\$16.42		\$6.35	\$0.49	\$0.68	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$24.43	\$32.64
CW-4 6,001-8,000 Hrs	\$14.78		\$6.35	\$0.44	\$0.68	\$0.00	\$0.44	\$0.00	\$0.00	\$0.00	\$22.69	\$30.08
CW-3 4,001-6,000 Hrs	\$13.14		\$6.35	\$0.39	\$0.68	\$0.00	\$0.39	\$0.00	\$0.00	\$0.00	\$20.95	\$27.52
CW-2 2,001-4,000 Hrs	\$12.32		\$6.65	\$0.37	\$0.68	\$0.00	\$0.37	\$0.00	\$0.00	\$0.00	\$20.39	\$26.55
CW-1 0-2,000 Hrs	\$11.49		\$6.35	\$0.35	\$0.68	\$0.00	\$0.35	\$0.00	\$0.00	\$0.00	\$19.22	\$24.97
Apprentice Indentured After 01/01/2021												
1st 45%	\$13.95		\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$23.87	\$30.84
2nd 50%	\$15.50		\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.47	\$0.00	\$0.00	\$25.47	\$33.22
3rd 55%	\$17.05		\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.51	\$0.00	\$0.00	\$37.92	\$46.45
Percent												
4th	65.00	\$20.15	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.60	\$0.00	\$0.00	\$41.11	\$51.19
5th	75.00	\$23.25	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.70	\$0.00	\$0.00	\$44.31	\$55.94
6th	85.00	\$26.35	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.79	\$0.00	\$0.00	\$47.50	\$60.67

Apprentice Indentured Before 01/01/2021												
1st	40.00	\$12.40	\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.37	\$0.00	\$0.00	\$22.27	\$28.47
2nd	45.00	\$13.95	\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$23.87	\$30.85
3rd	50.00	\$15.50	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.47	\$0.00	\$0.00	\$36.33	\$44.08
4th	65.00	\$20.15	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.60	\$0.00	\$0.00	\$41.11	\$51.19
5th	70.00	\$21.70	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.65	\$0.00	\$0.00	\$42.71	\$53.56
6th	85.00	\$26.35	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.79	\$0.00	\$0.00	\$47.50	\$60.67

Special Calculation Note : Other is NEBF (National Electrical Benefit Fund) and Administration Fund

Ratio :

Journeyman 1-3 to 2 Apprentice
 Journeyman 4-6 to 4 Apprentice
 Journeyman 7-9 to 6 Apprentice
 Etc.

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CRAWFORD, HURON*, KNOX*,
 MARION, MORROW, RICHLAND, WYANDOT*

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.

Special Jurisdictional Note : 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. In Huron County the following townships: Richland, New Haven, Ripley, and Greenwich.

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.

Details :

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 688 Inside

Change # : LCON1-2021fbLoc688in

Craft : Electrical Effective Date : 06/29/2021 Last Posted : 06/29/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrician	\$31.00	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.93	\$0.00	\$0.00	\$52.29	\$67.79
Over 50 feet	\$62.00	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$1.86	\$0.00	\$0.00	\$84.22	\$115.22
1st Level Construction Wireman 0-2000 hours	\$11.49	\$6.35	\$0.35	\$0.68	\$0.00	\$0.35	\$0.00	\$0.00	\$0.00	\$19.22	\$24.97
2nd Level CW 2001-4000 hours	\$12.32	\$6.35	\$0.37	\$0.68	\$0.00	\$0.37	\$0.00	\$0.00	\$0.00	\$20.09	\$26.25
3rd Level CW 4001-6000 hours	\$13.14	\$6.35	\$0.39	\$0.68	\$0.00	\$0.39	\$0.00	\$0.00	\$0.00	\$20.95	\$27.52
4th Level CW 6001-8000 hours	\$14.78	\$6.35	\$0.44	\$0.68	\$0.00	\$0.44	\$0.00	\$0.00	\$0.00	\$22.69	\$30.08
1st Level Construction Electrician 8001-10000 hours	\$16.42	\$6.35	\$0.49	\$0.68	\$0.00	\$0.49	\$0.00	\$0.00	\$0.00	\$24.43	\$32.64
2nd Level CE 10001-12000 hours	\$18.06	\$6.35	\$0.54	\$0.68	\$0.00	\$0.54	\$0.00	\$0.00	\$0.00	\$26.17	\$35.20
3rd Level CE 12001-14000 hours	\$22.99	\$6.35	\$0.69	\$0.68	\$0.00	\$0.69	\$0.00	\$0.00	\$0.00	\$31.40	\$42.89
Apprentice Indentured After 01/01/2021 45% 1st	\$13.95	\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$23.87	\$30.84
50% 2nd	\$15.50	\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.47	\$0.00	\$0.00	\$25.47	\$33.22
55% 3rd	\$17.05	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.51	\$0.00	\$0.00	\$37.92	\$46.45
65% 4th	\$20.15	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.60	\$0.00	\$0.00	\$41.11	\$51.19
75% 5th	\$23.25	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.70	\$0.00	\$0.00	\$44.31	\$55.94

	Percent											
85% 6th	85.01	\$26.35	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.79	\$0.00	\$0.00	\$47.50	\$60.68
Apprentice Indentured Before 01/01/2021												
1st	40.00	\$12.40	\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.37	\$0.00	\$0.00	\$22.27	\$28.47
2nd	45.00	\$13.95	\$8.90	\$0.00	\$0.60	\$0.00	\$0.00	\$0.42	\$0.00	\$0.00	\$23.87	\$30.85
3rd	50.00	\$15.50	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.47	\$0.00	\$0.00	\$36.33	\$44.08
4th	65.00	\$20.15	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.60	\$0.00	\$0.00	\$41.11	\$51.19
5th	70.00	\$21.70	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.65	\$0.00	\$0.00	\$42.71	\$53.56
6th	85.00	\$26.35	\$8.90	\$7.75	\$0.60	\$0.00	\$3.11	\$0.79	\$0.00	\$0.00	\$47.50	\$60.67

Special Calculation Note : Other is NEBF (National Electrical Benifit Fund).

Ratio :

1-3 Jourenymen to 2 Apprentice
4-6 Jourenymen to 4 Apprentice
7-9 Jourenymen to 6 Apprentice
Etc.

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 the following townships: Sycamore, Crane, Eden, Pitt, Antrim and Tymochee. In Huron County the following townships: Richmond, New Haven, Ripley, and Greenwich.

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. Changes were sent in by mistake for apprentice and journeyman updates that where not in effect yet by Carl Neutzling. made changes back to old rates on 3-22.17. fb

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 688 Voice Data Video

Change # : LCN01-2021fbLoc688VDV

Craft : Voice Data Video Effective Date : 07/14/2021 Last Posted : 07/14/2021

	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	\$28.75		\$8.90	\$0.86	\$0.70	\$0.55	\$1.21	\$0.66	\$0.00	\$0.00	\$41.63	\$56.00
Installer Technician A	\$29.75		\$8.90	\$0.89	\$0.70	\$0.57	\$1.21	\$0.69	\$0.00	\$0.00	\$42.71	\$57.59
Cable Puller	\$14.75		\$8.90	\$0.44	\$0.70	\$0.28	\$1.21	\$0.34	\$0.00	\$0.00	\$26.62	\$34.00
Apprentice	Percent											
1st 750 hours	55.00	\$15.81	\$8.90	\$0.48	\$0.70	\$0.30	\$1.21	\$0.37	\$0.00	\$0.00	\$27.77	\$35.68
2nd 750 hours	60.00	\$17.25	\$8.90	\$0.52	\$0.70	\$0.33	\$1.21	\$0.40	\$0.00	\$0.00	\$29.31	\$37.94
3rd 750 hours	65.00	\$18.69	\$8.90	\$0.56	\$0.70	\$0.36	\$1.21	\$0.43	\$0.00	\$0.00	\$30.85	\$40.19
4th 750 hours	70.00	\$20.12	\$8.90	\$0.60	\$0.70	\$0.39	\$1.21	\$0.47	\$0.00	\$0.00	\$32.40	\$42.46
5th 750 hours	75.00	\$21.56	\$8.90	\$0.65	\$0.70	\$0.42	\$1.21	\$0.50	\$0.00	\$0.00	\$33.94	\$44.72
6th 750 hours	80.00	\$23.00	\$8.90	\$0.69	\$0.70	\$0.44	\$1.21	\$0.53	\$0.00	\$0.00	\$35.47	\$46.97

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: Elevator Local 45

Change # : LCN01-2012kpLoc45

Craft : Elevator Effective Date : 04/04/2012 Last Posted : 04/04/2012

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Elevator Mechanic	\$41.92		\$11.03	\$6.96	\$0.55	\$3.35	\$5.00	\$0.00	\$0.00	\$0.00	\$68.81	\$89.77
Helper	\$29.34		\$11.03	\$6.96	\$0.55	\$1.76	\$5.00	\$0.00	\$0.00	\$0.00	\$54.64	\$69.31
Apprentice												
Percent												
Apprentice												
0-6 months Probation	50.00	\$20.96	\$11.03	\$6.96	\$0.55	\$1.26	\$5.00	\$0.00	\$0.00	\$0.00	\$45.76	\$56.24
1st year	55.00	\$23.06	\$11.03	\$6.96	\$0.55	\$1.38	\$5.00	\$0.00	\$0.00	\$0.00	\$47.98	\$59.50
2nd year	65.00	\$27.25	\$11.03	\$6.96	\$0.55	\$1.64	\$5.00	\$0.00	\$0.00	\$0.00	\$52.43	\$66.05
3rd year	70.00	\$29.34	\$11.03	\$6.96	\$0.55	\$1.76	\$5.00	\$0.00	\$0.00	\$0.00	\$54.64	\$69.32
4th year	80.00	\$33.54	\$11.03	\$6.96	\$0.55	\$2.01	\$5.00	\$0.00	\$0.00	\$0.00	\$59.09	\$75.85

Special Calculation Note : Vacation moves to 8% of BHR after 5 years

Ratio :

The total number of Helpers & Apprentices employed shall not exceed the number of Mechanics on any one job, except on jobs where (2) teams or more are working, (1) extra Helper or Apprentice may be employed for the first (2) teams and an extra Helper or Apprentice for each additional (3) teams.

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

Change # : LCN01-2021fbLoc1162

Craft : Glazier Effective Date : 05/21/2021 Last Posted : 05/21/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Glazier	\$27.77		\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.79	\$55.68
Apprentice	Percent											
1st 6 months	50.00	\$13.89	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.91	\$34.85
2nd 6 months	55.00	\$15.27	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.29	\$36.93
3rd 6 months	60.00	\$16.66	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.68	\$39.01
4th 6 months	65.00	\$18.05	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$32.07	\$41.10
5th 6 months	70.00	\$19.44	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.46	\$43.18
6th 6 months	75.00	\$20.83	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.85	\$45.26
7th 6 months	80.00	\$22.22	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.24	\$47.34
8th 6 months	90.00	\$24.99	\$6.88	\$6.79	\$0.35	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.01	\$51.51

Special Calculation Note :

Ratio :

1 Journeyman to 1 Apprentice
2 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 Glass & Curtain Wall

Change # : LCN01-2017fbLoc550

Craft : Ironworker Effective Date : 07/01/2017 Last Posted : 06/28/2017

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Ironworker Glass & Curtain Wall	\$22.00		\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$36.89	\$47.89
Apprentice	Percent											
1st 6 months	60.00	\$13.20	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$28.09	\$34.69
2nd 6 months	65.00	\$14.30	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$29.19	\$36.34
3rd 6 months	70.00	\$15.40	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$30.29	\$37.99
4th 6 months	75.00	\$16.50	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$31.39	\$39.64
5th 6 months	80.00	\$17.60	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$32.49	\$41.29
6th 6 months	85.00	\$18.70	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$33.59	\$42.94
7th 6 months	90.00	\$19.80	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$34.69	\$44.59
8th 6 months	95.00	\$20.90	\$7.00	\$7.47	\$0.09	\$0.00	\$0.33	\$0.00	\$0.00	\$0.00	\$35.79	\$46.24

Special Calculation Note :

Ratio :

1 Apprentice to 1 Journeymen

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 Locals 17 and 550 is determined as follows: All territory North of Old Route 224 line is 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.

Prevailing Wage Rate Skilled Crafts

Name of Union: Ironworker Local 550

Change # : OCR01-2022sksLoc550

Craft : Ironworker Effective Date : 04/14/2021 Last Posted : 03/25/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Ironworker	\$30.17		\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$51.66	\$66.75
Apprentice	Percent											
1st 6 months	60.00	\$18.10	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$39.59	\$48.64
2nd 6 months	65.00	\$19.61	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$41.10	\$50.91
3rd 6 months	70.00	\$21.12	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$42.61	\$53.17
4th 6 months	75.00	\$22.63	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$44.12	\$55.43
5th 6 months	80.00	\$24.14	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$45.63	\$57.69
6th 6 months	85.00	\$25.64	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$47.13	\$59.96
7th 6 months	90.00	\$27.15	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$48.64	\$62.22
8th 6 months	95.00	\$28.66	\$8.58	\$9.02	\$0.75	\$0.00	\$2.73	\$0.41	\$0.00	\$0.00	\$50.15	\$64.48

Special Calculation Note : OTHER IS: JOURNEYMAN UPGRADE AND WELLNESS FUND.

Ratio :

- 4 Journeymen to 1 Apprentice
- 1 Journeymen to 1 Apprentice, spinning of cable for suspension bridge
- 1 Journeymen to 1 Apprentice, ornamental work
- 2 Journeymen to 1 Apprentice, reinforcing work
- 1 Journeymen to 2 Apprentice, 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

Change # : LCN01-2021fbLocalHevHwy3

Craft : Laborer Group 1 Effective Date : 05/01/2021 Last Posted : 04/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$33.27		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.22	\$61.86
Group 2	\$33.44		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.39	\$62.11
Group 3	\$33.77		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.72	\$62.61
Group 4	\$34.22		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$46.17	\$63.28
Watch Person	\$26.00		\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$37.95	\$50.95
Apprentice	Percent											
0-1000 hrs	60.00	\$19.96	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$31.91	\$41.89
1001-2000 hrs	70.00	\$23.29	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$35.24	\$46.88
2001-3000 hrs	80.00	\$26.62	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$38.57	\$51.87
3001-4000 hrs	90.00	\$29.94	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$41.89	\$56.86
More than 4000 hrs	100.00	\$33.27	\$7.50	\$3.90	\$0.45	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$45.22	\$61.86

Special Calculation Note : Watchmen have no Apprentices. Tunnel Laborer rate with air-pressurized add \$1.00 to the above wage rate.

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), Yarner, 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, Guniting 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

Change # : LCN01-2021fbLoc1216

Craft : Laborer Effective Date : 05/01/2021 Last Posted : 04/21/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$30.42		\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.32	\$57.53
Group 2	\$30.62		\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.52	\$57.83
Group 3	\$30.92		\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.82	\$58.28
Group 4	\$27.75		\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$39.65	\$53.53
Apprentice	Percent											
0-1000HRS	60.00	\$18.25	\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$30.15	\$39.28
1001-2000	70.00	\$21.29	\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$33.19	\$43.84
2001-3000	80.00	\$24.34	\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$36.24	\$48.40
3001-4000	90.00	\$27.38	\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$39.28	\$52.97
More than 400 Hours	100.00	\$30.42	\$7.50	\$3.90	\$0.40	\$0.00	\$0.00	\$0.00	\$0.10	\$0.00	\$42.32	\$57.53

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

Gunite 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

Change # : LCN01-2021sksLoc18zone3

Craft : Operating Engineer Effective Date : 08/13/2021 Last Posted : 08/13/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Group A	\$39.14		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$55.09	\$74.66
Operator Group B	\$39.02		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$54.97	\$74.48
Operator Group C	\$37.98		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.93	\$72.92
Operator Group D	\$36.80		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$52.75	\$71.15
Operator Group E	\$31.34		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$47.29	\$62.96
Master Mechanic	\$39.39		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$55.34	\$75.03
Cranes 150'-180'	\$39.64		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$55.59	\$75.41
Cranes 180'-249'	\$40.14		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$56.09	\$76.16
Cranes 249' and over	\$40.39		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$56.34	\$76.53
Apprentice	Percent											
1st Year	50.00	\$19.57	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$35.52	\$45.31
2nd Year	60.00	\$23.48	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$39.43	\$51.18
3rd Year	70.00	\$27.40	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$43.35	\$57.05
4th Year	80.00	\$31.31	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$47.26	\$62.92
Field Mechanic Trainee												
1st Year	50.00	\$19.57	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$35.52	\$45.31
2nd Year	60.00	\$23.48	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$39.43	\$51.18
3rd Year	70.00	\$27.40	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$43.35	\$57.05
4th Year	80.00	\$31.31	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$47.26	\$62.92

Special Calculation Note : Other: Education & Safety \$0.09

Ratio :

Jurisdiction (* denotes special jurisdictional

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 78, will not be subject to the apprenticeship ratios in this collective bargaining agreement

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. Mechanic Trainees will receive 10% increase if required to have CDL

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

(Insert/Remover); Rotovator (Lime-Soil Stabilizer); Submersible Pumps (4" and over discharge); Switch & Tie Tamper (without lifting and aligning device); Trench Machines (24" and under); Utility Operators.

Group D - Backfillers and Tamper; 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

Change # : LCN01-2021sksLoc18hevhwylI

Craft : Operating Engineer Effective Date : 08/13/2021 Last Posted : 08/13/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Class A	\$39.14		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$55.09	\$74.66
Operator Class B	\$39.02		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$54.97	\$74.48
Operator Class C	\$37.98		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$53.93	\$72.92
Operator Class D	\$36.80		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$52.75	\$71.15
Operator Class E	\$31.34		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$47.29	\$62.96
Master Mechanic	\$39.39		\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$55.34	\$75.03
Apprentice	Percent											
1st Year	50.00	\$19.57	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$35.52	\$45.31
2nd Year	60.00	\$23.48	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$39.43	\$51.18
3rd Year	70.00	\$27.40	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$43.35	\$57.05
4th Year	80.00	\$31.31	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$47.26	\$62.92
Field Mech Trainee Class 2												
1st year	50.00	\$19.57	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$35.52	\$45.31
2nd year	60.00	\$23.48	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$39.43	\$51.18
3rd year	70.00	\$27.40	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$43.35	\$57.05
4th year	80.00	\$31.31	\$8.76	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.00	\$47.26	\$62.92

Special Calculation Note : Other: Education & Safety Fund is \$0.09 per hour.

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

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,

65 will not be subject to the apprenticeship ratios in this collective bargaining agreement

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. Mechanic Trainees will receive 10% increase if they are required to have CDL.

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

Prevailing Wage Rate

Skilled Crafts

Name of Union: Painter Local 639 Zone 1 Sign

Change # : LCN01-2021fbLoc639

Craft : Painter Effective Date : 06/29/2021 Last Posted : 06/29/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Sign Erector Service/Patteren/Metal Fab/Neon Class A	\$24.35		\$7.16	\$5.57	\$0.25	\$0.71	\$0.00	\$1.00	\$0.00	\$0.00	\$39.04	\$51.22
Painter Sign Erector/Service/Patteren/Metal Fab/Neon Class B	\$24.35		\$7.16	\$5.57	\$0.25	\$1.42	\$0.00	\$1.00	\$0.00	\$0.00	\$39.75	\$51.93
Painter Sign Erector/Service/Patteren/Metal Fab/Neon Class C	\$24.35		\$7.16	\$5.57	\$0.25	\$2.13	\$0.00	\$1.00	\$0.00	\$0.00	\$40.46	\$52.64
Painter Sign Erector/Service/Patteren/Metal Fab/Neon Class D	\$24.35		\$7.16	\$5.57	\$0.25	\$2.84	\$0.00	\$1.00	\$0.00	\$0.00	\$41.17	\$53.35
Computer Operator, Router, Spray Painter/Wood Class A	\$22.83		\$7.16	\$5.57	\$0.25	\$0.68	\$0.00	\$0.96	\$0.00	\$0.00	\$37.45	\$48.87
Computer Operator, Router, Spray Painter/Wood Class B	\$22.83		\$7.16	\$5.57	\$0.25	\$1.36	\$0.00	\$0.96	\$0.00	\$0.00	\$38.13	\$49.55
Computer Operator, Router, Spray Painter/Wood Class C	\$22.83		\$7.16	\$5.57	\$0.25	\$2.04	\$0.00	\$0.96	\$0.00	\$0.00	\$38.81	\$50.23
Computer Operator, Router, Spray Painter/Wood Class D	\$22.83		\$7.16	\$5.57	\$0.25	\$2.72	\$0.00	\$0.96	\$0.00	\$0.00	\$39.49	\$50.91
Final Assembly,Helper Class A	\$18.33		\$7.16	\$5.57	\$0.25	\$0.60	\$0.00	\$0.84	\$0.00	\$0.00	\$32.75	\$41.92
Final Assembly,Helper Class B	\$18.33		\$7.16	\$5.57	\$0.25	\$1.20	\$0.00	\$0.84	\$0.00	\$0.00	\$33.35	\$42.52
Final Assembly,Helper Class C	\$18.33		\$7.16	\$5.57	\$0.25	\$1.80	\$0.00	\$0.84	\$0.00	\$0.00	\$33.95	\$43.12
Final Assembly,Helper Class D	\$18.33		\$7.16	\$5.57	\$0.25	\$2.40	\$0.00	\$0.84	\$0.00	\$0.00	\$34.55	\$43.72
Apprentice	Percent											
1-2000 hrs	50.00	\$12.18	\$7.16	\$5.57	\$0.25	\$0.00	\$0.00	\$0.67	\$0.00	\$0.00	\$25.83	\$31.91
2001-3000 hrs	55.00	\$13.39	\$7.16	\$5.57	\$0.25	\$0.50	\$0.00	\$0.70	\$0.00	\$0.00	\$27.57	\$34.27
3001-4000 hrs	60.00	\$14.61	\$7.16	\$5.57	\$0.25	\$0.53	\$0.00	\$0.74	\$0.00	\$0.00	\$28.86	\$36.17
4001-5000 hrs	65.00	\$15.83	\$7.16	\$5.57	\$0.25	\$0.55	\$0.00	\$0.77	\$0.00	\$0.00	\$30.13	\$38.04
5001-6000 hrs	70.00	\$17.04	\$7.16	\$5.57	\$0.25	\$1.15	\$0.00	\$0.80	\$0.00	\$0.00	\$31.97	\$40.50

6001-7000 hrs	85.00	\$20.70	\$7.16	\$5.57	\$0.25	\$1.29	\$0.00	\$0.90	\$0.00	\$0.00	\$35.87	\$46.22
7001-8000 hrs	90.00	\$21.92	\$7.16	\$5.57	\$0.25	\$1.33	\$0.00	\$0.93	\$0.00	\$0.00	\$37.16	\$48.11

Special Calculation Note : Other is for paid holidays. Apprentice Pay Rate should be based on proper Classification.

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 639

Change # : LCNO1-2015fbLoc639

Craft : Painter Effective Date : 06/10/2015 Last Posted : 06/10/2015

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Metal Finisher/Helpers											
Top Helper Class A	\$19.09	\$3.65	\$0.00	\$0.00	\$0.66	\$0.00	\$0.00	\$0.00	\$0.00	\$23.40	\$32.94
Top Helper Class B	\$19.09	\$3.65	\$0.65	\$0.00	\$1.03	\$0.00	\$0.37	\$0.00	\$0.00	\$24.79	\$34.33
Top Helper Class C	\$19.09	\$3.65	\$1.00	\$0.00	\$1.76	\$0.00	\$0.37	\$0.00	\$0.00	\$25.87	\$35.41
Helper Class A	\$14.69	\$3.65	\$0.00	\$0.00	\$0.51	\$0.00	\$0.00	\$0.00	\$0.00	\$18.85	\$26.19
Helper Class B	\$14.69	\$3.65	\$0.65	\$0.00	\$0.79	\$0.00	\$0.28	\$0.00	\$0.00	\$20.06	\$27.40
Helper Class C	\$14.69	\$3.65	\$1.00	\$0.00	\$1.64	\$0.00	\$0.28	\$0.00	\$0.00	\$21.26	\$28.60
New Hire 90 Days	\$11.00	\$3.65	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$14.65	\$20.15

Special Calculation Note : Other is Sick and Personal Time

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 :

Top Helper: Shall perform the responsibilities of a Helper and be responsible for the setup, break down, safety and quality of the company's product.

Helper : Shall be responsible for performing tasks in refinishing, compliance with safety procedures, setting up and breaking down job sites, scaffolding and swing stages and preparing surfaces for refinishing including but not limited to, masking and stripping and cleaning, oxidizing, polishing and scratch removal on various surfaces

Class A Workers: Less than 1 Year of Service.

Class B Workers: More than 1 and less than 8 Years of Service.

Class C Workers: More than 8 Years of Service.

Metal Polisher Scope of Work: Polishing, buffing, stripping, coloring, lacquering, spraying, cleaning and maintenance of ornamental and architectural metals, iron, bronze, nickel, aluminum and stainless steel and in mental specialty work, various stone finishes, stone specialty work and any other work pertaining to the finishing of metal, stones, woods, and any window washing/cleaning done in conjunction with this work, 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 and the use of all tools required to perform such work, including but not limited to polishes, spray equipment and scaffolding.

Swing State Rate: All work on scaffold 4 sections or higher, including any boom lifts and swing stage scaffolds including the rigging and derigging of hanging/suspended swing stage systems and rappelling/bolson chair work, ADD \$1.50 per hour.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Painter Local 788

Change # : LCN01-2021sksLoc788

Craft : Drywall Finisher Effective Date : 12/31/2021 Last Posted : 12/22/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Drywall Finisher	\$25.33		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.95	\$54.62
REFINERY RATE												
Painter Drywall Finisher	\$28.22		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.84	\$58.95
POWERHOUSE RATE												
Painter Drywall Finisher	\$29.27		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.89	\$60.53
Apprentice	Percent											
1st Year	60.00	\$15.20	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.82	\$39.42
2nd Year	70.00	\$17.73	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.35	\$43.22
3rd Year	80.00	\$20.26	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.88	\$47.02
4th Year	90.00	\$22.80	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.42	\$50.82

Special Calculation Note : Apprentice rate based upon % of each classification.

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 :

B. \$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.

C. \$0.50 per hour shall be added to the rate of pay for the classification of work, while operating: Spray guns to apply oil based paint spray bar joist ceilings or epoxy coatings, Sandblasting, Cob blasting, High Pressure Water blasting (4000 PSI), and for Automatic Taping & Finishing Tools for Drywall.

D. \$0.50 per hour shall be added to the rate of pay for the classification of work, for tending: three (3) or more

sprayers.

E. \$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.

F. \$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.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Painter Local 788 Hvy Hwy

Change # : LCN01-2021sksLoc788HvyHwy

Craft : Painter Effective Date : 12/31/2021 Last Posted : 12/22/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Bridge Class 1 Bridge Blaster	\$35.81		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.43	\$70.34
Class 2 Bridge Painter, RiggerContainment Builder, Spot Blaster	\$32.81		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.43	\$65.84
Class 3 Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control Boat Person, Driver (0-5 Years Exp.)	\$25.81		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.43	\$55.34
Class 3 Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control Boat Person, Driver (5 Plus Years Exp.)	\$28.81		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.43	\$59.84
Class 4 Concrete Sealing, Concrete Blasting/Power Washing/Etc	\$28.81		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.43	\$59.84
Class 5 Quality Control.Quality Assurance, Traffic Safety, Competent Person	\$28.81		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.43	\$59.84
Apprentice	Percent											
1st Year	60.00	\$21.49	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.11	\$48.85
2nd Year	70.00	\$25.07	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.69	\$54.22
3rd Year	80.00	\$28.65	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.27	\$59.59

4th Year	90.00	\$32.23	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.85	\$64.96
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Special Calculation Note : *Apprentice pay based upon % 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: Painter Local 788

Change # : LCN01-2021sksLoc788

Craft : Painter Effective Date : 12/31/2021 Last Posted : 12/22/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Brush Roll	\$24.33		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.95	\$53.12
Paperhanger	\$24.73		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.35	\$53.71
Structural Steel	\$25.93		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.55	\$55.51
REFINERY RATE												
Painter Brush Roll	\$26.12		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.74	\$55.80
Paperhanger	\$27.32		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.94	\$57.60
Structural Steel	\$27.52		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.14	\$57.90
POWERHOUSE RATE												
Painter Brush Roll	\$28.77		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.39	\$59.78
Paperhanger	\$29.03		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.65	\$60.17
Structural Steel	\$29.22		\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.84	\$60.45
Apprentice	Percent											
1st Year	60.00	\$14.60	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.22	\$38.52
2nd Year	70.00	\$17.03	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33.65	\$42.17
3rd Year	80.00	\$19.46	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$36.08	\$45.82
4th Year	90.00	\$21.90	\$7.92	\$8.30	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.52	\$49.47

Special Calculation Note : Apprentice rate based upon % of each classification.

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 :

B. \$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.

C. \$0.50 per hour shall be added to the rate of pay for the classification of work, while operating: Spray guns to apply oil based paint spray bar joist ceilings or epoxy coatings, Sandblasting, Cob blasting, High Pressure Water blasting (4000 PSI), and for Automatic Taping & Finishing Tools for Drywall.

D. \$0.50 per hour shall be added to the rate of pay for the classification of work, for tending: three (3) or more sprayers.

E. \$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.

F. \$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.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Plasterer Local 132 (Columbus)

Change # : LCN02-2021fbLoc132

Craft : Plasterer Effective Date : 06/29/2021 Last Posted : 06/29/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Plasterer	\$26.69		\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$40.89	\$54.24
Apprentice	Percent											
1st 800 hrs	70.00	\$18.68	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$32.88	\$42.22
2nd 800 hrs	74.00	\$19.75	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$33.95	\$43.83
3rd 800 hrs	78.00	\$20.82	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$35.02	\$45.43
4th 800 hrs	82.00	\$21.89	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$36.09	\$47.03
5th 800 hrs	86.00	\$22.95	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$37.15	\$48.63
6th 800 hrs	90.00	\$24.02	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$38.22	\$50.23
7th 800 hrs	94.00	\$25.09	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$39.29	\$51.83
8th 800 hrs	98.00	\$26.16	\$7.50	\$4.20	\$0.50	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$40.36	\$53.43

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

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 :

PLASTERER IMPROVERS:

Is a person who has skills between an Apprentice and a Journeyman can be signed in as an Improver. An Improver receives 85% of the current wage and pension. All other benefits are same as Journeyman. The Improver has the opportunity to advance to Journeyman level by:

- (1) Working through a trial period of no more than 2,000 hrs.
- (2) Attending all safety and upgrading classes held or required.

Working on swing stage, slip scaffold or window jack scaffold 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: Plumber Pipefitter Local 42

Change # : LCR01-2021fbLoc42

Craft : Plumber/Pipefitter Effective Date : 07/01/2021 Last Posted : 06/24/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Plumber Pipefitter	\$33.42		\$12.52	\$11.35	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$58.39	\$75.10
Plumber Pipefitter Heavy Industrial	\$35.42		\$12.52	\$11.35	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$60.39	\$78.10
Apprentice Heavy Industrial												
1st yr-1st half	\$14.17		\$12.52	\$0.00	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.79	\$34.88
1st yr-2nd half	\$15.94		\$12.52	\$0.00	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.56	\$37.53
2nd yr-1st half	\$17.71		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.98	\$51.84
2nd yr-2nd half	\$19.48		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.75	\$54.49
3rd yr-1st half	\$21.25		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.52	\$57.14
3rd yr-2nd half	\$23.02		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.29	\$59.80
4th yr-1st half	\$24.79		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.06	\$62.46
4th yr-2nd half	\$26.57		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.84	\$65.12
5th yr-1st half	\$28.34		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.61	\$67.78
5th yr-2nd half	\$30.11		\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$55.38	\$70.43
Apprentice	Percent											
1st Year 1st Half	40.00	\$13.37	\$12.52	\$0.00	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$26.99	\$33.67
1st Year 2nd Half	45.00	\$15.04	\$12.52	\$0.00	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.66	\$36.18

2nd Year 1st Half	50.00	\$16.71	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.98	\$50.34
2nd Year 2nd Half	55.00	\$18.38	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.65	\$52.84
3rd Year 1st Half	60.00	\$20.05	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.32	\$55.35
3rd Year 2nd Half	65.00	\$21.72	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.99	\$57.85
4th Year 1st Half	70.00	\$23.39	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.66	\$60.36
4th Year 2nd Half	75.00	\$25.07	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.34	\$62.87
5th Year 1st Half	80.00	\$26.74	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.01	\$65.37
5th Year 2nd Half	85.00	\$28.41	\$12.52	\$11.65	\$1.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.68	\$67.88

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

- 1 Journeyman to 1 Apprentice
- 2 Journeymen to 2 Apprentice
- 3 Journeymen to 3 Apprentice
- 4-6 Journeymen to 4 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CRAWFORD, ERIE, HURON, KNOX,
LORAIN, MORROW, RICHLAND, WYANDOT

Water Treatment Work described below is a ratio of:

- 1 Journeyman to 1 Apprentice

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

Change # : LCN01-2021fbLoc88

Craft : Roofer Effective Date : 06/09/2021 Last Posted : 06/09/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Roofer	\$27.47		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$48.25	\$61.99
HELPERS												
Helper -500 Hrs. 1st 6 months	\$15.38		\$2.25	\$0.00	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$19.71	\$27.40
Helper - 500 Hrs. 2nd 6 months	\$17.03		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$37.81	\$46.33
2nd year Helper	\$18.68		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$39.46	\$48.80
3rd year Helper	\$20.33		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$41.11	\$51.27
4th year Helper	\$21.98		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$42.76	\$53.75
5th year Helper	\$23.62		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$44.40	\$56.21
6th year Helper	\$25.27		\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$46.05	\$58.69
Apprentice		Percent										
1st 6 months w/500 hrs	56.00	\$15.38	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$36.16	\$43.85
2nd 6 months w/500 hrs	62.00	\$17.03	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$37.81	\$46.33
3rd 6 months w/500 hrs	68.00	\$18.68	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$39.46	\$48.80
4th 6 months w/500 hrs	74.00	\$20.33	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$41.11	\$51.27
5th 6 months	80.00	\$21.98	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$42.76	\$53.74

w/500 hrs												
6th 6 months w/500 hrs	86.00	\$23.62	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$44.40	\$56.22
7th 6 months w/500 hrs	92.00	\$25.27	\$8.90	\$9.80	\$0.40	\$0.00	\$1.50	\$0.18	\$0.00	\$0.00	\$46.05	\$58.69

Special Calculation Note : Roofers working in any form of coal tar pitch, whether hot or cold, installing and/or removing will be paid \$.25 more per hour. Other \$0.18 is for C.I.D.B.

Ratio :

No helper shall be used on any one job unless 1 Journeymen, and 1 Apprentices are working on said job .One (1) Journeymen to One (1) Apprentice to One (1) Helper

Jurisdiction (* denotes special jurisdictional note) :

ASHLAND, CARROLL, COSHOCTON, CRAWFORD, HOLMES, HURON, LORAIN*, MEDINA, PORTAGE, RICHLAND, STARK, SUMMIT, TUSCARAWAS, WAYNE

Special Jurisdictional Note : In Lorain County (South of the Turnpike)

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Sheet Metal Local 33 (Akron)

Change # : LCN02-2021fbLoc33Akron

Craft : Sheet Metal Worker Effective Date : 08/01/2021 Last Posted : 07/28/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Sheet Metal Worker	\$32.65	\$9.00	\$13.04	\$0.93	\$0.00	\$7.20	\$0.00	\$0.00	\$0.00	\$62.82	\$79.14
Industrial Door	\$23.36	\$8.27	\$5.44	\$0.17	\$0.00	\$2.15	\$0.00	\$0.00	\$0.00	\$39.39	\$51.07
Apprentice Helper Trainee											
1st 60 Days Probationary Period	\$12.15	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$12.15	\$18.23
61 days-12 Months	\$13.55	\$8.27	\$1.88	\$0.17	\$0.00	\$1.41	\$0.00	\$0.00	\$0.00	\$25.28	\$32.06
2nd Year	\$15.89	\$8.27	\$1.88	\$0.17	\$0.00	\$1.59	\$0.00	\$0.00	\$0.00	\$27.80	\$35.75
3rd Year	\$17.05	\$8.27	\$1.88	\$0.17	\$0.00	\$1.69	\$0.00	\$0.00	\$0.00	\$29.06	\$37.59
4th Year	\$18.69	\$8.27	\$1.88	\$0.17	\$0.00	\$1.80	\$0.00	\$0.00	\$0.00	\$30.81	\$40.16
5th Year	\$20.09	\$8.27	\$1.88	\$0.17	\$0.00	\$1.91	\$0.00	\$0.00	\$0.00	\$32.32	\$42.37
Apprentice	Percent										
Apprentice											
1st year	45.00	\$14.69	\$9.00	\$3.54	\$0.17	\$0.00	\$0.00	\$0.00	\$0.00	\$27.40	\$34.75
2nd year	50.00	\$16.32	\$9.00	\$3.93	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$33.78	\$41.95
3rd year	55.00	\$17.96	\$9.00	\$4.32	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$35.81	\$44.79
4th year	65.00	\$21.22	\$9.00	\$5.11	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$39.86	\$50.47
5th year	80.00	\$26.12	\$9.00	\$6.29	\$0.93	\$0.00	\$3.60	\$0.00	\$0.00	\$45.94	\$59.00

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

Jurisdiction (* denotes special jurisdictional note) :

- ASHLAND, CARROLL, COSHOCTON,
- CRAWFORD, HOLMES, MEDINA, PORTAGE,
- RICHLAND, STARK, SUMMIT, TUSCARAWAS,
- WAYNE

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.

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: Sprinkler Fitter Local 669

Change # : LCN01-2022sksLoc669

Craft : Sprinkler Fitter Effective Date : 04/06/2022 Last Posted : 04/06/2022

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sprinkler Fitter	\$43.75		\$10.99	\$7.10	\$0.52	\$0.00	\$5.12	\$0.00	\$0.00	\$0.00	\$67.48	\$89.35
Apprentice Indentured after April 1, 2013	Percent											
CLASS 1	45.00	\$19.69	\$7.85	\$0.00	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.06	\$37.90
CLASS 2	50.02	\$21.88	\$7.85	\$0.00	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.25	\$41.20
CLASS 3	54.43	\$23.81	\$10.99	\$7.10	\$0.52	\$0.00	\$1.15	\$0.00	\$0.00	\$0.00	\$43.57	\$55.48
CLASS 4	59.43	\$26.00	\$10.99	\$7.10	\$0.52	\$0.00	\$1.15	\$0.00	\$0.00	\$0.00	\$45.76	\$58.76
CLASS 5	64.43	\$28.19	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$48.20	\$62.29
CLASS 6	69.43	\$30.38	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$50.39	\$65.57
CLASS 7	74.43	\$32.56	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$52.57	\$68.85
CLASS 8	79.42	\$34.75	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$54.76	\$72.13
CLASS 9	84.43	\$36.94	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$56.95	\$75.42
CLASS 10	89.44	\$39.13	\$10.99	\$7.10	\$0.52	\$0.00	\$1.40	\$0.00	\$0.00	\$0.00	\$59.14	\$78.70

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 Bldg & HevHwy Class 1
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCRO1-2021fbBldgHevHwy

Craft : Truck Driver Effective Date : 05/21/2021 Last Posted : 05/21/2021

	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 4 wheel service, dump, and batch trucks, Oil Distributor - Asphalt Distributor-Tandems	\$29.24		\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.44	\$60.06
Apprentice	Percent											
First 6 months	80.00	\$23.39	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.59	\$51.29
7-12 months	85.00	\$24.85	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.05	\$53.48
13-18 months	90.00	\$26.32	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.52	\$55.67
19-24 months	95.00	\$27.78	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.98	\$57.87
25-30 months	100.00	\$29.24	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.44	\$60.06

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

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 :

** Asphalt - Oil spray bar man when operating from cab shall receive \$0.20 cents per hour above their Basic Hourly Rate.

Prevailing Wage Rate Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 2
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : LCRO1-2021fbBldgHevHwy

Craft : Truck Driver Effective Date : 05/21/2021 Last Posted : 05/21/2021

	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 Tractor Trailer-Semi Tractor Trucks-Pole Trailers-Ready Mix Trucks-Fuel Trucks- Asphalt-Oil Spray bar men- 5 Axle & Over - Belly Dumps-End Dumps-Articulated Dump Trucks- Low boys-Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation-Truck Mechanics (when needed)	\$29.66		\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.86	\$60.69
Apprentice		Percent										
First 6 months	80.00	\$23.73	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.93	\$51.79
7-12 months	85.00	\$25.21	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.41	\$54.02
13-18 months	90.00	\$26.69	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.89	\$56.24
19-24 months	95.00	\$28.18	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.38	\$58.47
25-30 months	100.00	\$29.66	\$7.50	\$8.50	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.86	\$60.69

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

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 :

** Asphalt - Oil spray bar man when operating from cab shall receive \$0.20 cents per hour above their Basic Hourly Rate.

**SECTION 01010
DEFINITION OF CONTRACT ITEMS**

ITEM 0 GENERAL

0.01 FOREWORD

This Section describes the various Contract Items listed in the Bid.

0.02 WORK INCLUDED

Under each Item the Contractor shall furnish all labor, materials, tools, plant equipment, supplies, maintenance of equipment, heating, lighting and power, insurance and bonds, coordination, and all Work and in accordance with the Specifications Parts A, B, and Divisions 1 through 16 of Part C and necessary to complete the Work in accordance with the obvious or expressed intent of the Contract Documents.

The removal and proper disposal of debris generated by work under each Item shall be included in that corresponding Item.

0.03 WORKMANSHIP AND MATERIALS

The quality of workmanship and materials entering into any and all of the Items and the Work included shall conform to pertinent sections, paragraphs, sentences, and clauses, both directly and indirectly applicable thereto, contained in the Contract Documents, whether or not direct reference to such occurs under each Item in this Section.

0.04 PAYMENT

The lump sum and unit prices stated in the Bid shall be payment in full for the completion of all Work specified and described or required to be included in the Contract, complete, and ready for use.

0.05 CONTRACT ITEMS

- A. The Contract Items are defined on the following pages.
- B. The alternate bid items are identified by the suffix -alt on the bid form. Alternate Bid Items shall be measured and paid in accordance with their corresponding Base Bid Item number. The Owner may award the Alternate Bid Items at the Owner's discretion and contingent upon available funding for the work.

**ITEM 1
GENERATOR IMPROVEMENTS**

1.01 DESCRIPTION

- A. This Item includes all work shown on the Drawings and in accordance with the Specifications, Divisions 1 through 16.
- B. Under this Item, the Contractor shall include materials, equipment, electrical and controls, generator and accessories, labor, supervision, coordination, overhead, and profit as specified, shown on the Drawings, or otherwise required to complete and place in operation the new generator, including all specified accessories, and appurtenances with the expectation of a fully functional project at completion.
- C. Under this Item, the Contractor shall also include all materials, labor, supervision, coordination, and profit as specified for all site work related to this project.
- D. The provision of new electrical equipment and electrical work as required is included in this Item.

1.02 WORK NOT INCLUDED

None.

1.03 DEFINITION OF ITEMS

- A. Item 1 - Generator Improvements.

1.04 MEASUREMENT & PAYMENT

- A. The quantity to be paid for under Item 1 shall be a lump sum for the identified scope of work in accordance with the Specifications and Drawings.

END OF SECTION

SECTION 01043
COORDINATION AND CONTROL OF THE WORK

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes coordination and control of the Work.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
1. Information for the Record:
 - a. Plan and procedures for any shut downs and bypass pumping.
 - b. Coordination drawings shall include, but not be limited to, all process piping including, but not limited to, bill of material, laying length, embedded conduit runs, and embedded plumbing lines.

1.03 LINES AND GRADES - RESERVED

1.04 EXISTING STRUCTURES SHOWN ON DRAWINGS

- A. Where underground and surface structures are shown on the Drawings, the location, depth, and dimensions of such structures are believed to be reasonably correct but are not guaranteed.
- B. Such structures are shown for the information of the Contractor, but information so given is not to be construed as a representation that such structures will in all cases be found or encountered just where shown, or that they represent all the structures which may be encountered.

1.05 COOPERATION OF CONTRACTOR

- A. The Contractor shall conduct his operations so as to interfere as little as possible with those of the Owner, other contractors, utilities, or any public authority on or near the Work.
- B. The Owner reserves the right to perform other Work by contract or otherwise, and to permit other public bodies, public utility companies, and others to do Work on or near the project during progress of the Work. If a conflict arises, the Owner will determine when and how the Work shall proceed.
- C. Claims for delay or inconvenience due to operations of such other parties on Work specified, shown on the Drawings, as directed or which can be reasonably expected to be encountered by the nature and location of the Work will not be considered.

- D. Operations entailing the use of construction equipment and lights outside the hours of 8:00 am and 5:00 pm or outside the hours allowed for construction by local ordinances or regulations.
- E. Closing off clear access to any public alley, street, road, avenue or boulevard without the prior consent of municipal officials and the Engineer is prohibited.
- F. Contractor and subcontractors are required under Ohio Revised Code Section 149.53 to Notify the Ohio Historical Society and the Ohio Historic Site Preservation Board of archeological discoveries located in the project area and to cooperate with these entities in archeological and historical surveys.

1.06 RESERVED

1.07 PERMANENT PAVEMENT AND FINAL RESTORATION

- A. When construction is being done between April 15 and November 15, the final pavement restoration work shall be completed by November 15. When work is being performed between November 15 and April 15, temporary pavement as specified shall be provided. Final restoration of paved areas shall be completed within 30 days of the opening of asphalt plants for the season. The dates listed are intended to loosely define the period of operation of asphalt plants. Concrete pavement construction may continue beyond the dates listed with proper thermal protection as approved by the Owner.
- B. Pavement restoration shall include, but not limited to, replacement of pavement, driveways, and sidewalks.
- C. The fine grading, topsoil, and seeding operation shall be completed within 30 days of pavement restoration, unless weather conditions prevent such work from being completed.
- D. If at any time the pavement restoration and the fine grading, topsoil, and seeding operation does not meet the above conditions, no further mainline pipe construction will be permitted until the Contractor has completed restoration work to the satisfaction of the Engineer and Owner.
- E. In order to comply with the above conditions, the Contractor shall complete the pipeline and all appurtenances including, but not limited to, testing, in order to begin final pavement restoration and the fine grading, topsoil, and seeding operation.

1.08 RESERVED

1.09 RESERVED

1.10 RESERVED

1.11 DISPOSAL OF DEBRIS

- A. All debris resulting from construction operations, i.e., packaging, waste materials, damaged equipment, etc., shall be trucked from the Site by the Contractor and disposed of at spoil sites.
- B. The Contractor shall police the hauling of debris to ensure that all spillage from haul trucks is promptly and completely removed from public or private rights-of-way.
- C. All debris shall be disposed of in accordance with federal, state, and local laws and regulations.

1.12 CONTROL OF NOISE

- A. The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers. In the vicinity of hospitals, libraries, and schools, precautions shall be taken to avoid noise and other nuisance, and the Contractor shall require strict observances of all pertinent ordinances and regulations. Any blasting permitted in such locations shall be done with reduced charges.

1.13 DUST DEBRIS AND SMOKE PREVENTION

- A. Strict compliance with all ordinances regulating the production and emission of smoke will be required.
- B. Contractor shall control debris and dust at the Site.
- C. The Owner may require additional dust control measures during dry weather.
- D. The Contractor shall accept full responsibility for all damage that may occur to property as a result of negligence in providing required control.

1.14 SANITARY REGULATIONS

- A. The Contractor shall provide all necessary housing accommodations for the workers for changing clothes and for protection during inclement weather. Toilet accommodations shall also be maintained for the use of the employees on the Work. The accommodations shall be in approved locations, properly screened from public observance and shall be maintained in a strictly sanitary manner.
- B. The Contractor shall obey and enforce all other sanitary regulations and orders; shall take precautions against infectious diseases and the spread of same; and shall maintain

at all times satisfactory sanitary conditions around all shanties, tool and supply houses, and on all other parts of the Work.

1.15 RESERVED

1.16 EMERGENCY MAINTENANCE SUPERVISOR

- A. The Contractor shall submit to the Engineer the names, addresses, and telephone numbers of two employees responsible for performing emergency maintenance and repairs when the Contractor is not working, see GC 2.04 and 7.01. These employees shall be designated in writing by the Contractor to act as his representative and shall have full authority to act on his behalf.
- B. Contractor shall post at job Site, in a conspicuous location, the emergency numbers for the project.
- C. Contractor shall be responsible for contacting the local fire, police, and emergency response personnel and organizations in advance of the Work. The Contractor shall be responsible for the coordination and compliance with emergency response plans, whether developed by the governing agency, laws, or the Contractor for the project.
- D. At least one of the designated employees shall be available for a telephone call any time an emergency arises.

1.17 PUBLIC SERVICE STRUCTURES

- A. Public service structures shall be understood to include all poles, tracks, pipes, wires, conduits, house-service connections, vaults, manholes, and other appurtenances, whether owned or controlled by the Owner or other public bodies or by privately-owned corporations, used to supply the public with transportation, heating, electric, telephone, gas, water, sewer, or other services.
- B. At least a week in advance of breaking ground, the Contractor shall notify the registered underground protection service, all public bodies, and other owners of such facilities of the proposed location of his operations, advising them that their property may be affected and that such measures as they may deem necessary should be promptly taken to protect, adjust, remove, or build them.
- C. In developed residential and commercial areas, the Contractor shall assume each building and dwelling has gas, electric, cable television, telephone, water and sewer services and that they shall be protected and repaired as needed as part of the pipeline installation. No additional payment will be made for Work associated with supporting or repairs of such services.
- D. Three conditions which may be encountered will be dealt with as follows:
 - 1. Structures which are adjacent to but not included within the limits of an excavation required for performance of the Work shall be protected, supported, and maintained in service by the Contractor at his expense.

2. Structures within the limits of the Work which can be satisfactorily supported and maintained in service and which do not require removal and rebuilding in the judgment of the Engineer shall be thus supported by the Contractor at his expense, including cost of repair of damage incident to his operations.
 - a. Supports for water and gas mains, sewers, conduits, and similar structures shall be constructed of timber or other acceptable materials; shall be supported from undisturbed foundations, and shall be sufficiently substantial to ensure against settlement when pipe trenches or other excavations are backfilled. In all cases where permits or inspection fees are required by utilities in connection with changes to or temporary support of their conduits, the Contractor shall secure such permits and pay all permit and inspection fees.
 - b. The Contractor shall assume full responsibility for maintaining all public service structures in service and shall support and protect, or remove and rebuild them at his own expense. Such services shall not be interrupted without permission of the owner of the public service structure.
3. In case relocation of pipelines or other utility structures is required because of direct interference, as determined jointly by the Owner, Engineer, and Contractor, with the installation of the Work, the Contractor shall notify the Owners of the utility structure involved.
 - a. The Contractor will not be reimbursed for the cost of the relocation if the interference is shown on the Drawings, described in the Specifications, apparent on visual inspection, or specifically included in the Work to be performed by the Contractor.
 - b. The Contractor will not be paid for time lost because of such direct interference. Where it is the policy of any utility owner to perform such Work with his own forces, the Contractor shall cooperate to the fullest extent with such utility owner.

1.18 UNAUTHORIZED OR PROHIBITED WORK

- A. Work done beyond the lines shown on the Drawings or ordered, Work done without required inspection, except as herein provided, or any extra work done without authority will be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so done may be ordered removed at the Contractor's expense. Work done without lines and grades being given shall be considered as unauthorized and subject to rejection.
- B. Disposing of excess or unsuitable materials, including but not limited to excavated material, demolition debris, clearing and grubbing debris, in wetlands or flood plains.
- C. Locating stockpiles in environmentally sensitive areas.

- D. Pumping of sediment-laden water from trenches or excavations directly into any surface waters, stream, wetlands, or sewers. Pumped water shall be properly filtered and desilted prior to discharge.
- E. Open burning without a permit.
- F. Discharging injurious silica dust concentrations into the atmosphere within 200 feet of any residential or commercial, or public or private places of human occupancy.

1.19 RESERVED

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

PART 4 SPECIAL PROVISIONS

4.01 REQUIRED SAFETY DOCUMENTATION TO BE SUBMITTED

- A. The Contractor shall be expected to perform the work in accordance with the requirements of the Northwestern Water and Sewer District's Safety Program. The safety program documentation is included in the specification under 01043 section.

4.02 SUBGRADE INVESTIGATION

- A. The Contractor shall be aware that a detailed subgrade investigation has not been performed prior to the work. The Contractor is expected to make the necessary investigations sufficient for the Contractor to submit a bid for the work.

4.03 SEQUENCE OF CONSTRUCTION

- A. The following is a suggested sequence of construction to complete the pump station improvements while maintaining reliable pumping capabilities.
- B. The Contractor may modify this sequence but will still be responsible for meeting the contract complete dates outline in the Contract.
 - 1. Construct concrete foundation and pad for new generator and automatic transfer switch.
 - 2. Coordinate disconnection from utility transformer with utility and Owner.
 - 3. Remove power cables from manual transfer switch to utility transformer and main distribution panel.
 - 4. Remove manual transfer switch.
 - 5. Extend existing conduits as needed to new automatic transfer switch / rack.
 - 6. Install new conduits from automatic transfer switch to generator.

7. Install automatic transfer switch and generator.
8. Furnish and install new electrical cables, conduit and connections as needed for automatic transfer switch and generator.
9. Commissioning of automatic transfer switch and generator.
10. Final Restoration and cleanup.

4.04 COMMERCIAL BUILDING / ELECTRICAL PERMIT

- A. The County will be responsible for completing and paying for the permitting costs.

4.05 MAINTAINING FLOW IN EXISTING SEWERS

- A. Flow in existing sanitary and private sewers shall be maintained at all times during construction of this project. The Contractor shall furnish and install all necessary temporary facilities required to maintain the flow in existing sewers including bulkheads, plugs, stop planks, flumes, coffer dams, pumping equipment, valves, etc.
- B. Lift Station 39 can be out of service for roughly 1-hour. If a longer outage is required, the Contractor shall provide measures to bypass flow around the work area. The following sections outline the requirements for bypass pumping. The Contractor is expected to include bypass pumping required for the work in their bid.

Bypass Pumping Requirements

1. The Contractor shall provide a minimum of two pumps each with the firm pumping capacity outlined herein.
2. The pumps shall be operated by a power source supplied by the Contractor.
3. The pumps shall be provided with a level monitoring system with automatic dialing capabilities to notify the Contractor of pump failure or high levels in the bypass manhole. If monitoring capabilities are not provided, the Contractor shall be required to return the station to normal operation at the end of the work day.
4. See attached page titled *Richland County – Lift Station 39 Generator Improvements, Section 01043 – Bypass Pumping Layout showing the arrangement of the bypass pumping plan.*
5. Pump Performance Requirements
 - a. The bypass pumping system should be designed to meet the following operating conditions with one pump:
 - 1) The bypass shall be capable of achieving a discharge of 850 gpm.

- 2) This plan assumes the use of diesel-powered suction lift style pumping units. The Contractor is reminded to check the priming requirements of the bypass pumping equipment.
 - 3) Sound attenuated pumps are required.
- b. Alarming functionality shall be provided to alert the Contractor of trouble with the pumps or a need to increase pumping capacity.
 - c. The Contractor will use the Manhole 1 or the Wet Well as the location of the bypass pumps. Manhole 1 may be surcharged up to 3-feet above the invert of the sewer.
- C. The Contractor shall submit a bypass pumping plan for review by the Engineer. The bypass pumping plan shall include any details required to block flow in gravity sewers and piping proposed for discharging flow into existing manholes. The plan shall show the proposed locations for pumping equipment and temporary force main routing. The bypass pumping plan requirements provided by the Engineer shall be considered the minimum requirement for the work.
- D. Bypass pumping discharge piping shall be provided with check valves and air release capabilities as needed.
- E. The Contractor shall clean manholes used in the bypass work at the completion of the work.”

END OF SECTION

Richland County – Lift Station 39 Generator Improvements

Section 01043 – Bypass Pumping Layout



Note: Elevation information shown on this sheet from Richland County's record plans (1995) for the subject sewer system and have not been verified against elevations provided on the design plans.



**SECTION 01090
REFERENCE STANDARDS**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes reference standards.

1.02 DESIGNATION OF ASSOCIATIONS, INSTITUTIONS, SOCIETIES AND STANDARDS

- A. Whenever in these Specifications reference is made to Associations, Institutions, Societies, or Standards, they will be designated as follows:

AA	-	Aluminum Association
AAMA	-	Architectural Aluminum Manufacturers Association
AASHTO	-	American Association of State Highway and Transportation Officials
ACI	-	American Concrete Institute
ADAAG	-	Americans with Disabilities Act Accessibility Guidelines
AFBMA	-	Anti-Friction Bearing Manufacturers Association
AFI	-	Air Filter Institute
AGA	-	American Gas Association
AGMA	-	American Gear Manufacturers Association
AIHA	-	American Industrial Hygiene Association
AISC	-	American Institute of Steel Construction
AISI	-	American Iron & Steel Institute
AITC	-	American Institute of Timber Construction
AMCA	-	Air Moving and Conditioning Association
ANSI	-	American National Standards Institute
API	-	American Petroleum Institute
ARI	-	Air Conditioning and Refrigeration Institute
ASA	-	American Standards Association
ASHRAE	-	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	-	American Society of Mechanical Engineers
ASTM	-	American Society for Testing Materials
AWPB	-	American Wood Preservers Bureau
AWS	-	American Welding Society
AWWA	-	American Water Works Association
BLS	-	Bureau of Labor Standards
CISPI	-	Cast Iron Soil Pipe Institute
FM	-	Factory Mutual
FS	-	Federal Specifications
IBR	-	Institute of Boiler and Radiator Manufacturers
IEEE	-	Institute of Electrical and Electronic Engineers
INETA	-	International Electrical Testing Association

ISA	-	Instrument Society of America
JIC	-	Joint Industrial Council
ODOT	-	Ohio Department of Transportation
NBS	-	National Bureau of Standards
NEC	-	National Electrical Code
NEMA	-	National Electrical Manufacturers Association
NFPA	-	National Fire Protection Association
NICET	-	National Institute for Certification in Engineering Technologies
NSF	-	National Sanitation Foundation
NRTL	-	Nationally Recognized Testing Laboratory
OSHA	-	Occupational Safety and Health Act
SMACNA	-	Sheet Metal and Air Conditioning Contractors National Association, Inc.
SSPC	-	Steel Structures Painting Council
OBC	-	Ohio Building Code
IBC	-	International Building Code
UBC	-	Uniform Building Code
UL	-	Underwriters Laboratories, Inc.
USBM	-	United States Bureau of Mines

- B. Wherever specific standard numbers are indicated, i.e., ASTM C150, it shall be understood to mean the latest revision thereof.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 01300
SUBMITTALS**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes requirements for submittals.
- B. Contractor shall adhere to the submittal schedule as submitted under the provisions of the General Conditions. Contractor shall modify the schedule as required to allow sufficient time for submittal review based on current construction schedule.
- C. Owner, Contractor and Engineer shall utilize the electronic project management system EPMS as specified in Section 01320 for the central repository of project related documents including but not limited to submittals, information for the record and Operation and maintenance manuals.

1.02 COORDINATION OF SUBMITTALS

- A. The Contractor shall be responsible for the coordination of submittals and field verifications as required for the various parts of the Work.
- B. All submittals to the Engineer, unless otherwise specified, shall be made only by the Contractor. Direct submittals from subcontractors or suppliers will not be accepted.
- C. All submittals shall reference the Specification item that it covers, the Contractor's name, the Contract title and location, and the date of submission. Submittal shall also indicate whether the information is for the Engineer's review and approval, for record purposes, or for the fulfillment of the operation and maintenance requirements.

PART 2 PRODUCTS

2.01 GENERAL

- A. Two categories of information are normally required:
 - 1. Shop Drawings for review.
 - 2. Information for Record:
 - a. Operation and maintenance manuals.

2.02 SHOP DRAWINGS FOR REVIEW

- A. Shop Drawings:
 - 1. The Contractor shall submit Shop Drawings in accordance with the General Conditions, as required by individual Sections, shown on the Drawings or as directed.
 - 2. The Contractor shall indicate all variances from the requirements of the Contract Documents in accordance with the General Conditions.

3. The Contractor shall clearly indicate quantities and the exact intended use of the equipment or material contained in the submittal.
4. All Submittals shall be tailored to the project by high-lighting appropriate information and deleting or crossing out nonapplicable information or where applicable the Contractor shall provide a data sheet with all necessary information to correctly identify the applicable Sections of the manuals for the actual material or equipment furnished. All options furnished shall be indicated.

2.03 INFORMATION FOR RECORD

- A. Licenses and Permits - The Contractor shall submit copies of all licenses and permits required by Local, State, and Federal laws.
- B. Progress Schedules shall be submitted in accordance with the General Conditions and Section 01310.
- C. Schedule of Shop Drawings and Sample Submittals shall be submitted in accordance with the General Conditions.
- D. Schedule of Values shall be submitted in accordance with the General Conditions.

2.04 OPERATION AND MAINTENANCE INFORMATION

- A. Operation and maintenance manuals shall be submitted as information for the record.
- B. Operation and maintenance manuals shall be submitted as electronic documents prior to the printing of the record copy.
 1. Contractor shall provide one electronic copy of the manuals for preliminary review.
 2. The final accepted manuals shall be provided as one electronic copy of the manual and one printed copy as specified below.
- C. Electronic manuals shall be in Portable Document Format (PDF) as generated by Adobe Professional Version 7.0 or newer. The PDF file shall be fully indexed using the table of contents, searchable with thumbnails generated. PDF documents shall have bookmark created in the navigation frame for each major entry (Section, Chapter, Tab) in the table of contents. PDF images shall be at a readable resolution typically 300 dpi or higher. Optical Character Recognition (OCR) capture shall be performed on these images text can be searched, selected and copied from the PDF file.
 1. The opening view of each PDF document shall be the bookmarks to the left and cover page or table of contents.
 2. The PDF file name shall include the Name of Owner, Project title, Contract Number, and Specification Section. Commonly used abbreviations acceptable to the Owner may be used to minimize length of file name.
 3. The Contractors Name shall be the electronic "Author" of the PDF document.

- D. This information will be reviewed only if properly identified with Specification Section numbers and only after revised, where necessary, to conform to the Engineer's notes on previous submittals that have been marked "Make Corrections Noted." Manuals shall be tailored to suit the specific equipment provided.
- E. Submittals shall include but not limited to the following:
1. Descriptive literature, bulletins, or other data covering equipment or system.
 2. Complete list of equipment and appurtenances included with system, complete with manufacturer serial number and model number.
 3. General arrangement drawing.
 4. Dimension print.
 5. Parts list with assembly drawings.
 6. Recommended spare parts list with part and catalog number.
 7. Lubrication recommendations and instructions.
 8. Schematic wiring diagrams.
 9. Operating instructions.
 10. Maintenance instructions including trouble-shooting guidelines, lubrication, and preventive maintenance instructions with task schedule.
 11. Confirmation of all corrections noted on Shop Drawings marked "Make Corrections Noted."
 12. Manufacturer's name, address, and telephone number along with manufacturer's job number and Purchase Order number.
 13. Manufacturer's local sales representative, address, telephone number.
 14. All installation instructions that were provided to Contractor for use to install equipment.
- F. All manuals shall be tailored to the project by high-lighting appropriate information and deleting or crossing out nonapplicable information or the Contractor shall provide a data sheet with all necessary information to correctly identify the applicable Sections of the manuals for the actual equipment furnished. All options furnished shall be indicated.
- G. Equipment installations shall not be considered substantially complete until all associated operation and maintenance manual submittals are accepted by the Engineer.
- H. Field modifications to equipment during installation shall be included in the manual so that the manual reflects as-built conditions. Revisions to the manual may be submitted for incorporation into the manual where appropriate. However, the Engineer reserves the right to return all six manuals for revision to reflect as-built conditions.

PART 3 EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

- A. All submittals shall have a Submittal Identification & Approval cover sheet attached. A sample of the submittal cover sheet is attached for reference. The form will be provided by Engineer and coordinated with Contractor.
- B. All submittals shall be given a consecutive number when they are entered into the Electronic Project Management System (EPMS), See Section 01320.
- C. Resubmittals shall be entered into EPMS as resubmittals.
- D. Submittals to satisfy the operation and maintenance information requirements shall be entered into the EPMS as a submittal. The description shall have the prefix "OM".

3.02 PRINTING AND DISTRIBUTION

- A. Contractor shall provide printed copies of approved submittals and deliver them to the Owner and Engineers RPR at the Site.
- B. Contractor shall provide one printed copy of the approved operation and maintenance manual and the electronic copy on portable electronic media device to the Owner.
- C. Contractor shall provide printed copies of submittals, project information or documents required to satisfy the building permit and inspections as may be required by the governing agency.
 - 1. The Engineer will provide the stamped/sealed Contract Drawings for the initial filing of the building permit applications.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION



Submittal Identification & Approval

Date:	Spec Section
Submittal No.	Drawing Sheet No.
Description:	
Manufacturer(s)	

Contractor Comments/Deviations/Measurements

Contractor	Engineer																
<p>Contractor Name</p> <table border="1"><tr><td><input type="checkbox"/></td><td>Approved</td></tr><tr><td><input type="checkbox"/></td><td>Forwarded</td></tr><tr><td><input type="checkbox"/></td><td>Checked</td></tr></table> <p>By: _____ Date: _____</p>	<input type="checkbox"/>	Approved	<input type="checkbox"/>	Forwarded	<input type="checkbox"/>	Checked	<p>SHOP DRAWING REVIEW SUBJECT TO CONTRACT REQUIREMENTS Jones & Henry Engineers, Ltd.</p> <table border="1"><tr><td><input type="checkbox"/></td><td>Approved</td></tr><tr><td><input type="checkbox"/></td><td>Approved—Make Corrections Noted</td></tr><tr><td><input type="checkbox"/></td><td>Amend & Resubmit</td></tr><tr><td><input type="checkbox"/></td><td>Rejected—See Remarks</td></tr><tr><td><input type="checkbox"/></td><td>Distribute for Information</td></tr></table> <p>REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS</p> <p>Approval in no way relieves the Contractor of any responsibility for capacities, performance, functions, compliance with Federal, State, and Local Codes; accuracy of dimensions and details; or continuity and completeness of the Project nor does approval constitute or imply any increase in Contract Price.</p> <p>By: _____</p>	<input type="checkbox"/>	Approved	<input type="checkbox"/>	Approved—Make Corrections Noted	<input type="checkbox"/>	Amend & Resubmit	<input type="checkbox"/>	Rejected—See Remarks	<input type="checkbox"/>	Distribute for Information
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<input type="checkbox"/>	Distribute for Information																

Review Comments

**SECTION 01310
CONSTRUCTION SCHEDULES AND DOCUMENTATION**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes the requirements for construction schedules and construction sequences.
- B. This Section includes the requirements for the tracking and documentation of the progress and activities driving the completion of the Work as specified, shown on the Drawings and as directed.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Information for the Record:
 - a. Preliminary Construction Schedule.
 - b. Contractor's Construction Schedule and monthly updates.
 - c. Submittals Schedule.
- B. Contractor shall submit three copies of the 24-inch by 36-inch construction schedule, unless approved otherwise by the Engineer.

1.03 QUALITY ASSURANCE

- A. Scheduling conference shall be held prior to the commencement of the construction to discuss the following including, but not limited to:
 - 1. Construction sequencing.
 - 2. Contractor's coordination of subcontractors.
 - 3. Coordination with the Owner's operations.
 - 4. Coordination with other Contractor's or other Work.
 - 5. Project milestones.
 - 6. Owner's partial utilization.

PART 2 PRODUCTS

2.01 PRELIMINARY CONSTRUCTION SCHEDULE

- A. Preliminary construction schedule shall be completed in accordance with the General Conditions and prior to the scheduling conference.

- B. The preliminary schedule shall outline the Contractor's sequencing of tasks, activities, milestones, and all critical path items within the contract time.

2.02 CONSTRUCTION SCHEDULE

- A. The Contractor's submission of the construction schedule will not change the contract completion date, whether reviewed by the Owner and Engineer or not. The Contractor shall incorporate all approved change orders that have resulted in a contract time extension.
- B. The Contractor shall require all subcontractors engaged in the Work to submit to the Contractor construction schedules, as specified herein, for incorporation into the Contractor's construction schedule.
- C. The construction schedule shall include, but not limited to, the following dates:
 - 1. Notice to Proceed.
 - 2. Substantial Completion and Final Completion.
 - 3. Commencement of on-site operations.
 - 4. Milestones as specified, shown on the Drawings, and as directed.
 - 5. Ordering, submittals, fabrication, delivery, startup, and training time of major equipment items.
 - 6. Submittal schedule per the General Conditions.
- D. The Contractor shall incorporate into the construction schedule all constraints and work restrictions specified or otherwise required by the Contractor's operations, including, but not limited to, the following:
 - 1. Construction sequencing.
 - 2. Contractor's coordination of subcontractors.
 - 3. Coordination with the Owner's operations.
 - 4. Coordination with other Contractor's or other work.
 - 5. Project milestones.
 - 6. Owner's partial utilization.

2.03 UPDATING CONSTRUCTION SCHEDULE

- A. The Contractor shall keep the construction schedule current to the progress of the Work continually through closeout of the project. The construction schedule shall be submitted monthly for the Engineer's review.

2.04 WEEKLY CONSTRUCTION SCHEDULE

- A. The Contractor shall submit a schedule of his work for each week. This schedule shall identify the foreman of each work crew and the location and type of work the crew will

be doing each day. It shall be delivered no later than 4:00 p.m. of the next to last regular workday of the preceding week to the Resident Project Representative's office.

PART 3 EXECUTION

3.01 COORDINATION

- A. All phases of the Work requiring interference with normal operations of the existing facilities shall be scheduled in accordance with agreements among the Contractor, Owner, and Engineer. The Contractor shall notify the Owner at least one week before such Work is to begin.

PART 4 SPECIAL PROVISIONS

4.01 SCHEDULED NON-WORK DAYS

- A. The Contractor shall restrict Work to Monday thru Friday between 7:00 a.m. and 7:00 p.m. and consider the following list of holidays as mandatory non-work days, all of which shall be incorporated into the construction schedule:
 - 1. New Year's Day.
 - 2. Memorial Day.
 - 3. Fourth of July.
 - 4. Labor Day.
 - 5. Thanksgiving Day.
 - 6. Christmas Day.

END OF SECTION

SECTION 01320
ELECTRONIC PROJECT MANAGEMENT SYSTEM (EPMS)

PART 1 GENERAL

1.01 SCOPE

- A. This section describes the requirements for the Electronic Project Management System (EPMS) which will be required on this project.
- B. The Engineer will be responsible for setting up and paying for the cost of the EPMS.
 - 1. The EPMS shall be provided through eCommunication by Eastern Engineering, 866-884-4115; www.easternengineering.com.
- C. Engineer will implement an internet/web site based Electronic Project Management System (EPMS) for the administration of the Contract on this project. Owner, Contractors and Engineer shall be responsible to interface with EPMS and collaborating via the EPMS on this project. The EPMS is intended to supplement the Contract Documents and the provisions of the Contract Documents shall not be superseded by the EPMS.
 - 1. The EPMS is intended to provide a mode of communication which is electronic and to reduce the reliance upon printed documents. Printed documents transmitted will not be reviewed, and electronic documents emailed outside of the EPMS will not be reviewed. The Owner, Contractor and Engineer will collaborate on unique situations or circumstances in order to preserve the project electronic records.
- D. The Owner, Contractor and Engineer shall be required to provide project related information/documents via EPMS. In general, the EPMS will receive information via uploaded documents as PDF documents, in their native format (when permitted or required), or other electronic formats designated or required for functionality. The EPMS shall be a central repository for information to all project team members. The EPMS will provide viewing, printing, up/downloading of various information/documents.
- E. In general, the following is a partial list of information/documents which shall be tracked through the EPMS:
 - 1. Drawings, Specifications and Addendums (included revisions as necessary).
 - 2. Insurance.
 - 3. General Project Communication, Emails, Letters, Correspondence and Collaboration or any other document any participant wishes to make part of the project records.
 - 4. Request for Information (RFI).
 - 5. Submittals (Shop Drawings, Operation and maintenance manuals, color selections etc.)

6. Work Change Directives, Change Request and Change Orders.
 7. Schedule of Values, Pay Requests and Certified Payroll Reports.
 8. Reports and Photos (daily, monthly, etc.).
 9. Schedules (project, weekly and monthly).
 10. Meeting Agendas and Minutes.
 11. Permits and Special Inspections Reports.
 12. Laboratory Services (testing and reporting).
 13. Closeout procedures (deficiency list, warranty, substantial completion).
 14. Record Drawings.
- F. In an effort to protect proprietary information and prohibit unauthorized use or modifications, levels of access security will be assigned in order to provide safe and secure access to information with respects to involvement and responsibility on the project. The Owner, Contractor and Engineer shall establish these levels of access and rights which are appropriate for this project.
- G. Owner, Contractor and Engineer shall utilize the mark-up tool integral within the EPMS or have a PDF review software that includes the ability to mark up and apply electronic stamps (such as Adobe Acrobat, or Bluebeam PDF Revu).
- H. A high-speed internet connection is required.
- I. The EPMS will provide notifications regarding new or updated documents through an existing Email account outside of the EPMS.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 CONTRACT REQUIREMENTS

- A. All provisions of the Contract Documents are in full effect and enforcement. The submittal procedures specified in the Contract Documents are applicable with the understanding that they will be electronic documents and submitted via the EPMS.

3.02 PRINTING, REPRODUCTION AND DISTRIBUTION

- A. The Engineer will not be responsible for printing reproduction or preparation of any hard copy documents, or the cost of doing so.
- B. Contractor shall produce printed copies of all submittals as required in Section 01300 and in the Contract Documents.

3.03 TRAINING

- A. One training session by the Engineer and Eastern Engineering, Inc. will be provided to the team members at the beginning of the EPMS implementation. Training will be coordinated with the Preconstruction meeting and held at the same location. There are many tutorials, help features and technical support options located on the Eastern Engineering web site.
- B. Engineer will provide project related support as needed within their ability to provide it. Technical support will be available to all project team members from Eastern Engineering, Inc.

3.04 OPERATION

- A. Contractor and all Subcontractors shall maintain a Windows-based computer system including high speed internet access and ability to create/mark-up documents using Adobe Acrobat (pdf) and to scan documents.
- B. Engineer will facilitate the implementation and overall operation of the EPMS with Eastern Engineering. Eastern Engineering will provide and maintain the EPMS server and will back up the information.

3.05 ARCHIVE PROJECT CLOSE OUT

- A. All files on the EPMS web site will be archived at the end of the project. These archives will be made available to the Owner, Contractors and Engineer for download over the internet, at the end of the warranty period.

3.06 ELECTRONIC SUBMITTAL FILE NAMING CONVENTION

- A. The Contractor shall utilize the following file name convention for PDF files submitted through eComm:
 - 1. Spec Section - Number of Submittal from Section - Number of Times Submitted.
 - a. Example: 02552-01-03.
 - 2. The example represents the first submittal from Specification Section 02552 and the third time this Submittal has been submitted.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 01350
COMMON PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes general requirements for all materials, equipment and systems furnished or installed under this project.
- B. Additional specific requirements included under a particular Section shall take precedence.
- C. This Section includes, but is not limited to, the following procedural and administrative requirements:
 - 1. Product Delivery Storage and Handling.
 - 2. Warranties.
 - 3. Quality Assurance and Control.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and related specification sections.
- B. The specification sections and Drawings contain the specific submittal requirements.

1.03 QUALITY ASSURANCE

- A. Where Contractor is required to provide design services or certification of the design, the specified product, equipment or system shall comply with the specified criteria.
 - 1. Contractor shall submit a written request for clarification when specified criteria is incomplete or insufficient.
- B. Manufacturer's name, make, model number and other designations provided in the contract documents are to establish the significant characteristics, including but not limited to, type, function, dimensions and physical properties, performance, and appearance for the purpose of evaluating comparable products. Contractor shall verify product, equipment or system proposed meets or exceeds the requirements as specified or shown on the Drawings.

1.04 PROJECT HANDLING

- A. Schedule delivery to minimize the time goods are kept in storage.
- B. Deliver goods to Site in manufacturer's original packaging.
- C. Inspect the goods to determine if there is visible damage to the packaging.

1. The packaging shall be removed in a manner that will allow resealing for storage.
 2. If packaging cannot be removed and reused, the goods shall be repackaged per the manufacturer's recommendations.
- D. Goods that are susceptible to damage by the environmental or project conditions, including but not limited to, switchgear, motor control centers, panelboards, instrument control panels, fixtures shall be stored in a controlled environment per the manufacturer's recommendations. If no such area is available at the time such equipment is received, such space shall be provided by the Contractor at no expense to the Owner.
- E. Where construction is in roads or streets, that portion of the right-of-way not required for public travel may be used for temporary storage purposes unless otherwise prohibited. Materials shall not be stored in areas where such storage creates a hazard. Any other additional space required for construction or storage of materials and equipment shall be obtained by the Contractor at his expense.
- F. The Contractor shall confine his equipment, the storage of materials and equipment, and the operations of his workers to areas permitted by law, ordinances, permits, and the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.

1.05 GUARANTEE

- A. Manufacturer's warranty, extending beyond one-year after substantial completion for the specified product, equipment or system shall be provided to the Owner and endorsed by the manufacturer.
- B. Requirements for warranties extending beyond one-year after substantial completion are described in individual Sections of these specifications.
- C. Manufacturer's limitations and disclaimers shall not relieve the Contractor from warranty obligations under the Contract Documents.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Products shall be installed in accordance with the manufacturer's instructions and Contract Documents.
- B. Required appurtenances including but not limited to, anchors, grout, and leveling shims, shall be provided.

991-7898.001
2022

Richland County, Ohio
Lift Station 39 Generator Improvements

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 01810
VIDEO RECORDING**

PART 1 GENERAL

1.01 SCOPE

- A. Under this Section the Contractor shall furnish all personnel, transportation, recording equipment, power, and materials to produce color video records of existing topography along all pipeline routes and designated haul roads, in designated residences, and as directed.

1.02 SCHEDULE OF WORK

- A. Unless otherwise directed in writing by the Engineer, video recording shall be scheduled in conformance with the following:
 - 1. No recording shall be started on any portion of the Work until that portion of the Work is under Contract unless otherwise directed by the Owner.
 - 2. Recording shall not precede excavation for construction by more than three months.
 - 3. Video recording shall be performed only when foliage is visible on trees, except as authorized by the Engineer.
 - 4. Video recording shall not be performed when more than 10% of the ground is covered with snow or leaves, unless authorized by the Owner.
- B. Before proceeding with the Work, the video recording Contractor shall consult with the Engineer concerning the following:
 - 1. Scheduling recording to precede construction.
- C. All recording shall be completed on a section of Contract before the Contractor starts excavation or places material or equipment in that section.
- D. In areas where public utilities are to be relocated or replaced, a second video recording shall be made after the public utility has concluded their work but before the Contractor commences operations.
- E. The Owner shall obtain permission for the recording crew to enter private property not included in an easement. The Contractor shall give the Owner sufficient prior notice to obtain the permission.

1.03 DEFINITIONS

- A. Video Recording - Zone of Influence - Shall include producing video records as specified herein for the zone of influence. The zone of influence shall be defined as all surface area within street rights-of-way or easements in which project is to be installed or within areas 50 feet on each side of a proposed utility centerline, whichever is greater, and additional features in contiguous areas as specified or directed.

- B. Video Recording of Buildings - Entering - Shall include moving video equipment into buildings or residences (including attached or separate garages) designated by the Engineer for the purpose of recording existing conditions therein.
- C. Video Recording of Building - Panels - Shall include video recording of designated panels of buildings. Panel as used herein shall mean the full surface of a room wall, ceiling, or floor or the outer side of a building not viewable in any zone of influence recording.

1.04 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Provide a minimum of four copies of the video.

PART 2 PRODUCTS

2.01 VIDEO RECORDING

- A. Displays - All video shall, by electronic means, display (visible on the playback viewer) continuously and simultaneously generated transparent digital information which shall include the date and time of recording, as well as the corresponding planned station numbers. The date information shall contain the month, day, and year. The time information shall consist of hours, minutes, and seconds, separated by punctuation marks. Below the stationing, periodic transparent alpha/numeric information shall appear. The information shall consist of the name of the project, name of area covered, direction of travel, viewing side, and any other pertinent data.

2.02 VIDEO OUTPUTTING

- A. Video recording shall be a digital file format such as MPEG, MP3, MP4, Wave or WMV or other current standard file formats as approved by Engineer.
- B. The electronic file organization shall reasonably match the project stationing with file names including the station number and street names.
- C. The electronic files shall be stored on a single solid-state memory device, such as a DVD disc or jump/thumb drive, external hard drive. Solid state memory devices shall have a USB for connection to a computer. The memory volume on the storage device shall be adequate to store the electronic video files in an unzipped capacity along with any associated or embedded data files.

2.03 AUXILIARY LIGHTING

- A. Auxiliary lighting shall be used wherever necessary to ensure clarity of picture.

PART 3 EXECUTION

3.01 PERSONNEL

- A. The Work shall be performed by competent personnel with knowledge of the procedures and methods to produce satisfactory records as specified herein.

3.02 PRODUCTION

- A. Recording shall be composed in such a manner that filming shall, in general, proceed in the direction of the project stationing.
- B. Recorded Contents:
 - 1. All houses or buildings and other readily recognizable objects as required shall be identified visually in such a manner that they can be referenced to the stationing of the project. Objects selected shall be at intervals not exceeding 100 lineal feet and shall include all houses and buildings identified by house numbers.
 - 2. Within the zone of influence, the recording shall include but not be limited to all sidewalks, driveways, ditches, parkways, lawns, inlets, culvert pipe ends, trees, shrubs, fences, houses, and buildings that could conceivably be affected by the Contractor's operations. The video shall call attention to existing cracks or uneven areas in walks and driveways, damaged lawns, trees or shrubbery, broken or missing inlet castings, deteriorated fences, and, where feasible, broken or plugged culvert pipes.
 - 3. Within street rights-of-way, the recording shall include but not be limited to all pavement, curbs and inlets, mailboxes, traffic signs, and street signs. The video shall call attention to damaged mailboxes, signs, curbs and inlet castings. Damaged areas in pavements over proposed project or in pavements scheduled for resurfacing need not be referred to in the video.
 - 4. Video recording for designated residences shall include documentation of surface conditions inside and outside of the building prior to starting project construction.
- C. Control of Picture Quality - The camera carrier shall travel at a low speed to ensure against blur or distortion of the recorded pictures. A maximum rate of 48-feet per minute is recommended.

3.03 OWNER REVIEW

- A. As the video recording work progresses, the Contractor shall deliver completed sections to the Owner and Engineer. The Owner and Engineer will review the recordings and determine if they are acceptable for clarity and coverage. The recording may be rejected if the picture is of poor quality (i.e., blurred, distorted, too light, too dark, improper color), insufficient coverage, or does not meet specified requirements.

- B. The area of rejected recording shall be rerecorded by the Contractor and reinserted in the electronic file in the proper sequence.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 02110
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes demolition of existing structures and removal of pavement, piping, and equipment necessary to clear space for new construction and/or to rehabilitate existing construction.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
1. Information for the Record:
 - a. The Contractor shall submit, as specified, a copy of a signed permit from the owner of the property upon which the debris, removed under this Section, will be disposed.
 - b. Dust and noise control measures
 - c. Record documents, in accordance with the General Conditions, and photograph or video recording indicates the location of, but not limited to, the following existing, new, and abandoned:
 - 1) Utilities.
 - 2) Mechanical.
 - 3) Electrical.
 - 4) Structural.
 - 5) Any embedded items.
 - d. Inventory and documentation list for removed and salvaged materials for the Owner.

1.03 QUALITY ASSURANCE

- A. Contractor shall execute the Work in compliance with all federal, state, and local codes. Any removal or demolition shall not leave the Owner in violation of any such regulations or codes unless approved by the Owner and Engineer.

1.04 PROTECTION

- A. Structures shall be removed in such a manner as not to damage any portions of the existing structure which are to remain in place.

PART 2 PRODUCTS

2.01 FILL MATERIAL

- A. Fill material shall be in accordance with Section 02200.

PART 3 EXECUTION

3.01 COORDINATION

- A. Demolition work extending beyond the limits as specified, shown on the Drawings, or as required, will be considered unauthorized. The Contractor, at no additional cost to the Owner, shall repair said damage to a condition equal to or better than existed prior to commencement of the Work.
- B. Existing structures and equipment which are damaged in appearance or function by performance of demolition work shall be replaced or repaired, at Owner's discretion and to an approved condition, by the Contractor at no increase in Contract Price.

3.02 PAVEMENTS, SIDEWALKS, CURBING AND SIMILAR STRUCTURES

- A. Removal of existing pavements, sidewalks, curbing, and similar structures shall end at an existing joint or a sawed joint per ODOT 202. Sawed joints shall be straight, neat, and free from chipped or damaged edges.
- B. For removal of non-reinforced concrete, the minimum depth of saw cut shall be 3 inches.
- C. For removal of reinforced concrete, the depth of saw cut shall be sufficient to cut the steel unless specified otherwise.
- D. If the concrete is coated with a bituminous surface or other material, the depth shall be sufficient to cut into the concrete, not including the coating depth, as specified above.

3.03 EXCAVATION OF RIGID PAVEMENT - RESERVED

3.04 MANHOLES, CATCH BASINS, INLETS AND SIMILAR STRUCTURES - RESERVED

3.05 GROUT-FILLED ABANDONMENT OF PIPE, CONDUIT AND SIMILAR STRUCTURES - RESERVED

3.06 GUARDRAIL AND FENCE

- A. Where so required by the Drawings, existing guardrail and fence shall be carefully dismantled and stored for reuse or for salvage by the Owner.
- B. Wood posts and other materials not considered salvageable by the Owner shall be disposed of by the Contractor.

3.07 SUPERSTRUCTURES, TANKS, CHAMBERS AND SIMILAR STRUCTURES

- A. Care shall be used in demolishing structural elements which are continuous with structural elements remaining in service. Unless otherwise permitted by the Owner, concrete and masonry shall be cut through entirely with a masonry or concrete saw before removing the unwanted portions.
- B. Methods and equipment used in demolition work shall be chosen so the structural integrity and water tightness of both new construction and existing plant structures remain unimpaired by the performance of the demolition work.
- C. Portions of underground structures which are in the way of new sewers, piping, and structures shall be removed from the area of conflict to a distance not less than 6 inches from any point of the new construction.
- D. Care shall be used when removing existing concrete from around reinforcing steel which must be used for securing new concrete. If this reinforcing steel is damaged, the Contractor shall remove additional existing concrete until sufficient existing reinforcing steel is exposed to provide adequate embedment length in the new concrete, as approved by the Engineer.

3.08 EQUIPMENT REMOVAL

- A. All equipment, valves, piping, fittings, and miscellaneous steel structures that are removed shall remain the property of the Owner and shall be stored at a site selected by the Owner. The Owner reserves the right to require the Contractor to dispose of certain unwanted portions of removed equipment and materials. The Owner shall have the right to reject any or all materials removed during construction, and the Contractor shall haul away and dispose of these materials in a suitable manner at no additional cost to the Owner.
- B. See Section 16010 for removal of electrical equipment and appurtenances.
- C. The Contractor shall replace, at no cost to the Owner, equipment designated to be turned over to the Owner that is lost or damaged.

3.09 PRIVATE SIGNS - RESERVED

3.10 DISPOSAL OF DEBRIS

- A. All debris resulting from demolition operations; i.e., broken concrete, masonry, pipe, miscellaneous metal, trees and brush, equipment, etc., shall be trucked from the Work site by the Contractor and disposed of at spoil sites in a legal manner, in full compliance with applicable codes and ordinances.
- B. The Contractor shall police the hauling of debris to ensure that all spillage from haul trucks is promptly and completely cleaned up.

3.11 BACKFILLING

- A. All trenches, holes, and pits resulting from the removal and abandonment of any structure or obstruction shall be backfilled and compacted in accordance with the requirements of Section 02200.

3.12 MAINTAINING OF PLANT OPERATIONS - RESERVED

3.13 USE OF EXPLOSIVES

- A. The use of explosives for the Work of removal of structures and obstructions is PROHIBITED.

3.14 PIPING REMOVAL

- A. At the location where pipe removal stops, the remaining pipe end shall be capped. The cap must be pressure tight and restrained from movement due to pressures inside the pipe.
- B. Piping removal includes, but not limited to, all hangers, stands, and anchoring devices.

3.15 OPENINGS AND PATCHING

- A. The Contractor shall fill all openings created by equipment, piping, and conduit removals.
- B. The Contractor shall patch any marred surfaces created by equipment and piping removals.
- C. All filling and patching work shall be performed in accordance with the specifications.
- D. All anchor bolts shall be removed and holes filled or cut off flush.

PART 4 SPECIAL PROVISIONS

4.01 SCHEDULE OF REMOVALS

- A. The following list of items once removed shall remain the property of the Owner and shall be delivered to the Owner-designated location.
 - 1. Manual Transfer Switch
 - 2. Generator Plug

END OF SECTION

**SECTION 02200
EXCAVATION AND BACKFILL**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes all excavations and related Work for the construction of the designated structures, pipelines, and other incidental Work.
- B. Excavation includes the Work of making all necessary excavations for the construction of all Contract Work; of furnishing, placing, and use of sheeting, shoring, and sheet piling necessary in excavating for and protecting the Work and workers; of doing all pumping and fluming necessary to keep the excavation free from water; of providing for uninterrupted flow of existing streams, treatment plant processes, drains and sewers; of damming and cofferdamming where necessary; of supporting and protecting existing structures, pipes, conduits, sewers, culverts of all types of materials of construction, of supporting and protecting railroad tracks, posts, poles, wires, fences, buildings, and other public and private property adjacent to the Work; of removing and replacing existing sewers, culverts, pipelines, and bulkheads where necessary; of removing after completion of the Work all sheeting and shoring not necessary to support the sides of excavations; of removing and disposing of all surplus excavated material or material under structures that does not meet the soil design bearing capacities; of doing all backfilling, of compacting backfill to limits specified or ordered by the Engineer; and restoring all property damaged as a result of the Work involved in this Contract.
- C. The Work includes obtaining and transporting suitable fill material from off-site when on-site material is not available.
- D. The Work includes transporting surplus excavated material not needed for backfill at the location where the excavation is made, to other parts of the Work where filling is required, or disposal of all surplus on other sites selected by the Owner.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Sieve Analysis (ASTM C136) - One test for each material source.
 - b. Submit a moisture density curve (ASTM D698) for each type of material used for backfill. Test shall be referenced to appropriate sieve analysis test. The maximum dry weight and optimum moisture content shall be indicated.
 - c. Controlled Density Fill Material - Design Mix and Certified Test Results.
 - d. Test results for conformance with specified "Compaction Requirements":

- 1) Retests shall be referenced to the corresponding failing test.
- e. Stripped soil and topsoil test per ODOT 659.
2. Information for the Record:
 - a. When excess excavated material is disposed at locations off the Site, the Contractor shall obtain and submit written permission from the Owner of the property upon which the material is to be placed.
 - b. Details of the proposed method of installation and construction of dewatering wells.
 - c. Schedule of the proposed sequence of dewatering well construction.
 - d. Dewatering logs.
 - e. Submit method for abandoning dewatering well.

PART 2 PRODUCTS

2.01 TOPSOIL

- A. Soil stripped from the Site shall consist of loose, friable, loamy topsoil without admixture of subsoil or refuse. It shall be reasonably free from peat, muck, roots, hard clay, coarse gravel, stones, weeds, tall grass, brush, sticks, litter, ground debris and wood products. The stockpiled soil shall be subject to the approval of the Engineer.
- B. Topsoil provided shall be in accordance with ODOT 653 and be loose, friable, loamy soil without admixture of subsoil or refuse. In order for the topsoil to be considered loamy the fraction of topsoil, passing a No. 10 sieve, shall contain not more than 40% clay. Topsoil shall contain not less than 4% nor more than 20% organic matter as determined by loss on ignition of oven-dried samples to constant weight at 212 degrees F.
- C. Excess material shall be removed from Site, unless directed otherwise by Owner or Engineer.

2.02 SELECTED BACKFILL

- A. Selected backfill shall be clean excavated soil. It shall be free of rock and foreign debris of any kind and shall be tested in accordance with ASTM C136 sieve screen analysis and ASTM D2487 soil classification. The material's use as selected backfill shall be approved by the Engineer.
- B. Engineer may waive material testing of selected backfill. Such waiver shall apply only to the designated location and the source of the selected backfill. Such waiver shall not apply to excavated soil from locations not so designated.

2.03 SPECIAL BACKFILL MATERIAL

- A. Special backfill material shall conform to ODOT 304.

2.04 AGGREGATE BEDDING MATERIAL

- A. Aggregate bedding material shall be well-graded durable crushed gravel, crushed stone or meeting the graduation requirements of ODOT Table 703.01-1.
- B. Aggregate bedding material shall for water mains be as follows:
 - 1. For PVC, HDPE or plastic pipe, bedding material shall be No. 8 aggregate stone.
 - 2. For ductile iron hydrant leads, bedding material shall be No. 8 aggregate stone.
- C. Aggregate bedding material shall for sanitary and storm sewers be as follows:
 - 1. For PVC, HDPE or plastic pipe, bedding material shall be No. 57 or No. 8 aggregate stone.

2.05 CONTROLLED DENSITY FILL (CDF) MATERIAL - RESERVED

2.06 SLOPE AND CHANNEL PROTECTION - RESERVED

PART 3 EXECUTION

3.01 COORDINATION - RESERVED

3.02 REMOVING AND REPLACING TOPSOIL

- A. Removal
 - 1. Excavation for trenches in which pipelines, sewers, conduits and other utilities are to be installed: The Contractor may elect to strip soil and stockpile unless the Contract Documents direct stripping and stockpiling prior to excavation.
 - 2. General excavation, other than trench excavation: The Contractor shall remove, and stockpile the top 12 inches of the existing soils from all areas of construction including, but not limited to, excavation and embankment areas, stockpile sites, construction yard, storage areas, etc.
- B. Replacing stockpiled soil and topsoil
 - 1. Trench excavation areas disturbed as a result of trenching operations and which are to be restored with grass or other plantings shall be free of peat, muck, roots, hard clay, coarse gravel, stones, weeds, tall grass, brush, sticks, litter, ground debris and wood products. The surface shall be mechanically conditioned after removal of debris. After surface is prepared, it shall be covered with topsoil or stockpiled soil material to a minimum depth of 4 inches. Topsoils and stockpiled soil material shall meet the requirements specified herein and be tested.
 - 2. General excavation areas which are to be restored with grass or other plantings shall be free of peat, muck, roots, hard clay, coarse gravel, stones, weeds, tall grass, brush, sticks, litter, ground debris, wood products and construction debris

including loose stone. The surface shall be mechanically conditioned after removal of debris. After surface is prepared it shall be covered with stockpiled soil and then have a minimum of 4 inches of topsoil placed.

- C. The Work shall be in accordance with applicable portions of ODOT items 652 and 653.

3.03 GENERAL EXCAVATION

- A. All necessary excavation shall be performed to accommodate the completion of all Contract Work.
- B. The Drawings show the horizontal and the lower limits of structures, pipelines, sewers and other utilities. The methods and equipment used by the Contractor when approaching the bottom limits of excavation and when trimming the bottom of the excavation to a smooth surface shall be selected to prevent disturbing the soil below the bottom limits of excavation.
- C. Excavation which is carried below the bottom limits shall be classified as Unauthorized Excavation, unless said excavation has been authorized by the Engineer prior to each occurrence.
- D. Unauthorized excavation shall be filled with CDF material to the bottom limits. Under circumstances where structural integrity is not a factor, the Engineer may allow the filling of unauthorized excavation with pipe bedding material or special backfill material compacted to 100% density, as specified under compaction requirements.
- E. Sheeting, Shoring, and Bracing:
1. The Contractor shall furnish and install adequate sheeting, shoring, and bracing to maintain safe working conditions, and to protect newly built work and all existing adjacent and neighboring structures and utilities from damage by settlement.
 2. Sheeting, shoring and bracing shall be arranged so as not to place a strain on portions of completed Work until the construction has proceeded far enough to provide ample strength. Sheeting and bracing may be withdrawn and removed at the time of backfilling, but the Contractor shall be responsible for all damage to newly built Work and adjacent and neighboring structures and utilities.
 3. Sheeting, shoring and bracing shall be removed or cut-off at the time of backfilling to avoid problems with finish grade or future excavation.
- F. Removal of Water:
1. The Contractor shall at all times during construction provide and maintain ample means and devices with which to remove promptly and dispose of properly all water entering the excavations or other parts of the Work and shall keep said excavations dry until the structures to be built or pipelines to be placed therein are completed. No water shall be allowed to rise over or come in contact with concrete or masonry until the concrete and mortar has attained a satisfactory set, except in cases where the concrete has been tremied into place with the approval of the Engineer. Water shall not be allowed to rise above the

bottom of the bedding stone prior to placing pipe. In waterbearing sand, well points and/or sheeting shall be supplied, together with pumps and other appurtenances of ample capacity to keep the excavation free of water and in compliance with government regulations.

2. The Contractor shall dispose of water from the Work in a suitable manner without damage to adjacent property or structures and in compliance with all regulations.

3.04 TRENCH EXCAVATION

- A. Excavation for trenches in which pipelines, sewers, conduits and other utilities are to be installed shall provide adequate space for workers to place and joint the pipe properly. The trench shall be kept to a minimum width. The width of trench at the top of the pipe shall comply with the limits specified or shown on the Drawings.
- B. Excavation shall be to the depth necessary for placing aggregate bedding material under the pipeline, sewer, conduits and other utilities as shown on the Drawings. If over excavation occurs, the trench bottom shall be filled to grade with compacted aggregate bedding material.
- C. The amount of trench open at any one time in advance of completed Work shall be limited to the minimum necessary for conducting laying operations.
- D. In general, backfilling shall begin as soon as the pipeline, sewer, conduits and other utilities are in a condition to receive it and shall be carried to completion as rapidly as possible. New trenching shall not be started when earlier trenches need backfilling or the surfaces of streets or other areas need to be restored to a safe condition.

3.05 EXCAVATION OF UNSUITABLE MATERIAL

- A. Unsuitable materials existing below the Contract bottom limits for excavation shall be removed as required by the Engineer. The Engineer may rely upon the independent laboratory retained on this Project when determining unsuitable soil conditions, removal and backfill. Such excavation shall be conducted at a time when the Engineer and independent laboratory are present and shall not exceed the vertical and lateral limits prescribed by both.
- B. The voids left by removal of unsuitable material shall be filled with special backfill, pipe bedding material, or CDF material as listed in Part 4 or as prescribed by the independent laboratory and as approved and ordered by the Engineer. Special backfill or pipe bedding shall be installed as described in this Section and in general shall be compacted to 100% density as specified under compaction requirements.

3.06 DISPOSAL OF UNSUITABLE AND SURPLUS MATERIAL

- A. All excavated materials which are unsuitable for use in backfilling trenches or around structures, and materials excavated that are in excess of that required for backfilling and for constructing fills and embankments as shown on the Drawings, shall be disposed of by the Contractor at his expense and at sites provided by him as may be required,

except that the Owner reserves the right to require the Contractor to deposit such surplus at locations designated by the Owner within a five-mile radius of the Work.

- B. No surplus excavated material of any class shall be deposited in any stream or watercourse or be dumped on public property without the consent of the Owner. All spoil areas shall be left smooth, level, with drainage to a water course and proper erosion and runoff control shall be used.

3.07 BACKFILL AND COMPACTION

- A. Pipe and Conduit Bedding - Unless otherwise directed, pipe, conduits and other utilities shall be installed in specified aggregate bedding material as shown on the Drawings and as specified.
- B. Backfilling Under Existing Pipeline, Sewer, Conduits and Other Utilities - Where it is necessary to undercut or replace existing utility conduits and/or service lines, the excavation beneath such lines shall be backfilled the entire length with aggregate bedding material tamped in place in 6-inch layers to the required density. The aggregate bedding shall extend outward from the spring line of the conduit a distance of 2-feet on all sides and thence downward at its natural slope.
- C. Backfilling with Selected Backfill - Unless otherwise specified or directed, material excavated in connection with the Work may be used for backfilling and other filling purposes, if it meets all requirements given elsewhere in this specification for selected backfill. No material shall be used for backfilling that contains stones, rock, or pieces of masonry greater than 12 inches, frozen earth, debris, earth with an exceptionally high void content, organic material, or marl. No large pieces of rock or masonry shall be deposited closer than 24 inches from the completed outside surface of any structure or pipe.
- D. Backfill Immediately - All trenches and excavations shall be backfilled immediately after completion of construction therein, unless otherwise directed by the Engineer. Under no circumstances shall water be permitted to rise in unbackfilled excavation during construction or after pipe has been placed.
- E. Backfilling around and over structures, pipelines, conduits and other utilities comprising the Work shall be carefully done by hand and tamped with suitable tools of approved weight when within 2 feet of structures, pipeline, conduit and other utilities. Selected backfill or, where specified, shown on Drawings, or ordered by the Engineer, special backfill material shall be used in this area. The material shall be placed in uniform layers not exceeding 6 inches in depth up each side. Each layer shall be placed, then carefully and uniformly tamped to the specified density so as to eliminate the possibility of lateral displacement of pipe or structure.
- F. Backfilling may be done by machinery after the backfill has been placed and compacted beyond 2 feet horizontally of structures, pipelines, conduits and other utilities and to a minimum depth of 1 foot above the tops of any buried structures, pipelines, conduits, and other utilities. The backfill material shall be deposited in horizontal layers, not thicker than one foot, and each layer shall be thoroughly compacted to the specified density by approved methods before a succeeding layer is placed. In no case, will backfill

material from a bucket be allowed to fall directly on a structure or pipe and in all cases the bucket must be lowered so that the shock of the falling material will not cause damage.

- G. Backfilling Under Pavement and Walks - Where existing or new pavement, driveway, parking lot, curb and gutter, or walk is over an excavation, special backfill material shall be used to backfill the entire excavation from the bedding to surface. The material shall be placed and compacted to the required density in accordance with one of the following methods:
 - 1. The backfill material shall be deposited in 6-inch horizontal layers and each layer shall be thoroughly compacted to the proper density by approved compaction method before a succeeding layer is placed.
 - 2. No method of compaction which alters the gradation of the special backfill material or prevents compaction testing by standard testing methods shall be used.
- H. Backfilling with Controlled Density Fill Material (CDF) - Where called for on the Drawings, specified, or ordered, CDF material shall be used in lieu of special backfill or bedding material specified herein. Before placing CDF material, the Contractor shall take required measures to protect the Work against flotation.
- I. Backfilling Under Structures - Where structural slabs, mats or footings are to be placed on a backfilled area, special backfill material shall be used unless otherwise noted on the Drawings. The backfill material shall be placed in 6-inch horizontal layers and each layer shall be thoroughly compacted to the specified density by approved methods before a succeeding layer is placed. Where backfill is to be placed on undisturbed side slopes steeper than one vertical to six horizontal, steps shall be formed into the slope before each layer of the backfill is placed. These steps shall be cut vertically at no more than 2-foot intervals and shall have a horizontal dimension of not less than 3-feet.
- J. Prior to backfilling under structures the natural subgrade shall be evaluated at regular intervals in each direction by the independent testing laboratory to determine that the subgrade can obtain the design bearing capacity given by the "Structural Design Data" table on the Drawings. If the subgrade cannot obtain the design bearing capacity then the testing laboratory shall submit a remedy to the Engineer for approval and for the Contractor to perform.

3.08 COMPACTION REQUIREMENTS

- A. In areas to be filled, after the top 12-inches of soil is stripped, then the undisturbed subgrade shall be compacted to not less than 100% of maximum dry density per ASTM D698 (Standard Proctor) prior to placing of fill.
- B. Backfill placed under areas receiving concrete slabs, mats, footings, or within the interior of buildings shall be compacted to not less than 100% of maximum dry density per ASTM D698.

- C. Backfill placed around structures where other structures, pipelines, or slabs are to be constructed shall be compacted to not less than 100% of maximum dry density per ASTM D698.
- D. The material used to construct embankments and fills in locations other than under pavements, walks, structures, or slabs and around and over pipelines, shall be compacted to not less than 95% of maximum dry density per ASTM D698.
- E. All other backfill, including backfill around and over pipelines, and backfill around structures not covered in Paragraphs B. and C. above, shall be compacted to not less than 95% of maximum dry density per ASTM D698.
- F. The bottom of excavations upon which concrete slabs or structures are to be placed shall be compacted to obtain 100% maximum dry density per ASTM D698 in the top 12 inches.
- G. All soil subgrade which will provide bearing support for pavements or curbs, shall be compacted to a width of 6 inches beyond the back of curb and to a depth of 12 inches below the bottom of excavation to a density of not less than 100% of maximum dry density per ASTM D698. All fill below the subgrade shall be compacted to not less than 98% of maximum dry density, unless specified otherwise.
- H. Subgrade under the driveways and walks shall be compacted to a depth of 6 inches below the subgrade surface to density of not less than 100% of the maximum dry density determined by ASTM D698.
- I. Subgrade under structures shall be compacted to a depth of 12 inches below bottom of excavation surface to a density of not less than 100% of the maximum dry density determined by ASTM D698.

3.09 COMPACTION TESTS

- A. Trenches and excavation around structures shall be backfilled and consolidated in layers, as specified, to the existing ground surface. Initial test series for each type of backfill material shall be continued until the method of consolidation employed has proven to attain the required compaction. Any change in the proven method of consolidations will require additional testing and field verification of compaction.
- B. Subgrade below pavements, curbs, sidewalks, and structures shall be consolidated as specified. Compaction tests shall be performed to verify specified consolidation.
- C. Subsequent tests or series of tests shall be in locations and at depths ordered by the Engineer.

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3.10 STREAM CROSSINGS - RESERVED

3.11 STREAM BANK PROTECTION - RESERVED

3.12 SHAFT CONSTRUCTION - RESERVED

PART 4 SPECIAL PROVISIONS

Not Used.

END OF SECTION

**SECTION 02800
SODDING, SEEDING AND MULCHING**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes fine grading, placing sod, and seeding and mulching areas designated on the Drawings, specified, or ordered.
- B. The Work consists of fine grading; furnishing and placing topsoil; sod seed, mulching material; and fertilizer; and watering seeded or sodded areas until growth is established.
- C. The Contractor shall restore all grass areas damaged by his operations in construction of facilities included in the Contract.
- D. Unless otherwise specified herein or directed, Work shall be in conformance with ODOT Item 659 Seeding and Mulching, and Item 660 Sodding.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Manufacturer's project information for materials.
 - 2. Information for the Record:
 - a. Submit to Resident Project Representative:
 - 1) Invoices showing the weight, brand, and composite analysis of all fertilizer used on the Project.
 - 2) Bag tickets showing weight and composition of all seed used on the Project.

PART 2 PRODUCTS

2.01 SOD

- A. Sod shall conform to ODOT Item 660.02, unless otherwise specified in Part 4.

2.02 SEED

- A. Seed mixtures shall be in conformance with the requirements of ODOT Item 659.07 and ODOT Item 659.09 Class 1, unless otherwise specified in Part 4.

2.03 FERTILIZER

- A. Commercial fertilizers shall be from a dealer or manufacturer whose brands and grades are registered or licensed by the State of Ohio, Department of Agriculture. The content of nutrients shall be 12-12-12, unless otherwise approved by the Engineer.

2.04 MULCHING MATERIAL

- A. Mulching material shall be straw, wood fiber, or compost reasonably free of weed seed, and other foreign materials. Mulch shall meet the requirements of ODOT Item 659.13, and either Item 659.14, 659.15, or 659.16.

2.05 MATTING MATERIAL

- A. Matting material shall be in conformance with the requirements of ODOT Item 712.11 Type A or B.

2.06 TOPSOIL

- A. Topsoil furnished by the Contractor shall be as specified in Section 02200.

PART 3 EXECUTION

3.01 FURNISHING AND PLACING TOPSOIL

- A. Areas from which the top layer of soil has been removed or disturbed shall be recovered with a minimum of 4 inches of topsoil placed in conformance with Section 02200 or ODOT Item 659.11.

3.02 PREPARATION

- A. The operation of finish grading and sowing shall not be performed when the ground is frozen or muddy.
- B. Areas to be Sodded:
 - 1. Preparation of areas to be sodded shall be in conformance with ODOT Item 660.04.
- C. Areas to be Seeded:
 - 1. Unless otherwise shown on the Drawings or specified in Part 4, all areas of disturbed soils on the Site shall be seeded.
 - 2. The area to be seeded shall be prepared in accordance with Section 02200 or ODOT Item 659.
 - 3. Fertilizer shall be applied at a standard dry application rate of 10 pounds per 1000 square feet. Either dry or liquid fertilizer may be used and shall be distributed in an even pattern over the specified area, then thoroughly disked, harrowed, or raked into the soil to a depth of not less than 1 inch.

3.03 INSTALLATION

- A. Sodding:
 - 1. Sod shall be placed in conformance with ODOT Items 660.05 and 660.06.
 - 2. No sod shall be placed when the temperature is below 32 degrees F. No frozen sod shall be placed nor shall any sod be placed upon frozen soil. When sod is placed between the dates of June 1 and October 15, it shall be covered immediately with a straw mulch 1-inch thick, loose measurement.
- B. Seeding:
 - 1. The seed shall be mixed thoroughly and sown evenly at a rate specified in ODOT Item 659.09. The seed mixture may be sown dry or hydraulically unless directed otherwise in Part 4 of this Section.
 - 2. The seed mixture shall be applied when the soil is in a workable condition and shall be raked into a depth of approximately 1/4 inch.
 - 3. Seed shall be sown only between May 1 and October 15, unless otherwise permitted by the Engineer.
- C. Mulching:
 - 1. Within 24 hours after an area has been seeded, it shall be mulched in conformance with one of the following specified methods as designated in Part 4.
 - 2. Mulch:
 - a. Mulching with straw shall be in conformance with ODOT Item 659.14, except that in front of residences, the mulching material shall be kept in place by an approved non-tracking adhesive or other approved method in lieu of the specified asphalt emulsion. Mulching with wood fiber shall be in accordance with ODOT Item 659.15 and mulching with compost shall be in accordance with ODOT Item 659.16.
 - b. Matting shall be used as mulch on slopes greater than 3:1 and shall be placed in conformance with the applicable portions of ODOT Item 671.
- D. Seeded and sodded areas shall be watered and maintained as specified below until they are established.
 - 1. The seed bed shall be thoroughly watered, as soon as the seed is mulched.
 - 2. Water shall be applied by a hydro-seeder or water tank under pressure with a nozzle producing a spray that will not dislodge the mulching material.
 - 3. Water applications shall be made at rates and at frequencies necessary to establish the growth of grass to its full density and to a minimum height of 2 inches.
 - 4. The rate application shall be 120 gallons per 1,000 square feet.

5. The Contractor shall keep all sodded areas, including the subgrade, thoroughly moist for two weeks after sodding. After the two-week period, the Contractor shall water the sod as necessary to maintain its healthy condition until accepted by the Owner.
6. Matting areas shall be maintained until all Work on the Contract has been completed and accepted.
7. Seeded and sodded areas shall be maintained by the Contractor until acceptance by the Owner. The Contractor shall repair and restore any damaged areas. Repair of the damaged area shall be performed using the same materials and procedures as used for the original installation of the area.
8. The Contractor shall clean all surfaces coated with hydro-seeding overspray. Contractor shall be responsible for surface staining or damage caused by hydro-seeding and restoration damage or staining.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 03305
CAST-IN-PLACE CONCRETE**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes cast-in-place concrete along with formwork, waterstops, joint systems, stair nosings, reinforcing, mix design, placement procedures, and finishes as indicated on the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
1. Shop Drawings for Review:
 - a. Concrete mix designs including substantiating data and test records.
 - b. Product literature for admixtures, curing compounds, and miscellaneous materials.
 - c. Locations of construction and control joints not shown on Drawings, and proposed changes in locations.
 - d. Material certifications.
 - e. Aggregate gradation and percentages of deleterious substances.
 - f. Batch plant certification.
 - g. Placing drawings shall indicate:
 - 1) Construction joints, splice locations, and splice lengths.
 - 2) Bending schedules.
 - 3) Accessories.
 2. Information for the Record:
 - a. Manufacturer's application instructions for miscellaneous materials.
 - b. Quality control test reports.
 - c. Slab profile report.
- B. Copy of concrete delivery ticket shall be presented to Resident Project Representative for each batch. Delivery ticket shall indicate:
1. Name of ready-mixed company and plant designation.
 2. Truck number.
 3. Concrete class.

4. Quantity of concrete.
5. Date.
6. Time when batch was loaded.
7. Type and name of admixtures.
8. Actual batch weights of cement, fly ash, aggregates, and water.
9. Location of pour and time of unloading shall be added to the ticket at Site.

1.03 QUALITY ASSURANCE

- A. Concrete work shall comply with provisions of the current editions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified.
 1. ACI American Concrete Institute.
 2. CRSI "Manual of Standard Practice".
 3. AWS "Code for Welding in Building Construction".
- B. Concrete Manufacturer Qualifications - Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.
- C. Concrete Testing Service - A qualified independent testing agency shall perform material evaluation tests and shall design concrete mixes.
- D. Maintain adequate supervision and control of dewatering operation to ensure that stability of excavated and constructed slopes are not adversely affected by water, erosion is controlled, and flooding of excavation or damage to structures does not occur.
- E. Batch Plant:
 1. Batch Plant shall be central batch plant with automatic or semi-automatic control. Concrete may be mixed using either central-mixed, shrink-mixed, or truck-mixed methods. If concrete is shrink-mixed or truck-mixed, the truck and concrete producer shall conform to ASTM C94.
 2. Batch plant shall be certified by the Department of Transportation, National Ready Mixed Concrete Association (NRMCA) or an independent certification using NRMCA "Check list for Certification of Ready Mixed Concrete Production Facilities" executed and certified by independent Professional Engineer registered in state of Site. Evidence of current certification shall be submitted.
- F. Pre-Installation Conferences:
 1. Before beginning concrete work, Contractor shall hold a meeting to review detailed requirements for preparing concrete mix designs and to determine proper procedures for concrete construction.
 2. A representative of Contractor, testing laboratory, concrete producer, and Engineer shall be in attendance.

1.04 DELIVERY AND HANDLING

- A. Concrete shall be delivered in accordance with ASTM C94, except concrete shall be completely discharged within one hour after introduction of mixing water to cement.
- B. Concrete shall be delivered in agitating trucks or in mixing trucks operating at agitating speed.

PART 2 PRODUCTS

2.01 MATERIALS - Materials used in concrete construction shall meet all the requirements of applicable ASTM and other industry standards.

- A. Portland cement - ASTM C150, Type I or II unless indicated otherwise.
- B. Air-entraining Agent - ASTM C260, chloride ion free.
- C. Chemical Admixtures (Water Reducing Agents, Superplasticizers, Accelerator) - ASTM C494, chloride ion free.
- D. Pozzolan (Fly ASN) (Fly Ash) (GGBF Slag) - ASTM C618, Class F. ASTM C989 grade 100 or low and shall contain less than 12% alumina (C34).
- E. Aggregates - ASTM C33.
- F. Reinforcing Steel - ASTM A615, Grade 60, deformed.
- G. Welded Wire Fabric; Plain - ASTM A185, (undeformed wires) with weld intersections not exceeding 12 inches.
- H. Water - ASTM C94, clean and potable.
- I. Membrane Curing Compound - ASTM C309, minimum 30% solids content, non-yellowing, moisture loss not to exceed .039 grams per square cm in 72 hours when applied at a coverage rate of 250 square feet per gallon, VOC compliant, water-based acrylic polymer resin. "Safe Cure & Seal – 30% by Dayton Superior or equal.
- J. Sheet Curing Compound - ASTM C171.
- K. Formwork - ACI 301 and ACI 347R.
- L. Form Coating - Non-staining.
- M. Preformed Expansion Joint Filler:
 - 1. Exterior Walks and Pavements - "Fibre Expansion Joint" by W. R. Meadows or equal; asphalt impregnated cellular fibers securely bonded together in conformance with ASTM D1751.
 - 2. Other Location - "Sealtight Self-Expanding Cork" by W. R. Meadows or equal: self-expanding cork type expansion joint filler in conformance to ASTM D1752, Type III.
 - 3. Isolation Joints - "Ceramar Flexible Foam" by W. R. Meadows or equal; flexible foam expansion joint filler.

- N. Joint Sealer, Vertical - ASTM C920, Type M, Cass 25, Grade NS, Dymeric 240, by Tremco or Sikaflex-2c NS by Sika Corp. or equal.
- O. Joint Sealer, Horizontal - ASTM C920: THC-900 by Tremco or "Sikaflex - 2C SL" by Sika Corp. or equal.
- P. Vapor Barrier - ASTM D2103 - 6 mil polyethylene.
- Q. Waterstop:
 - 1. Type A waterstop shall be 9 inches wide by 3/8-inch nominal thickness ribbed waterstop with a 1/2 inch inside diameter center bulb, Greenstreak, Inc. No. 735, or equal. Type A water stop with split flange shall be Greenstreak No. 727, or equal.
 - 2. Type B waterstop shall be 6 inches wide by 3/8-inch nominal thickness ribbed waterstop without center bulb, Greenstreak No. 679, or equal. Type B water stop with split flange shall be Greenstreak No. 724, or equal.
 - 3. Type C Waterstop-bentonite/butyl rubber compound coiled strips with minimum bentonite content of 75%. For slabs and walls greater than 8 inches thick, waterstop strip shall be 1-1/4 inch by 1/2-inch trapezoidal shape with reinforcing scrim equal to American Colloid Company "Volclay" RX 101 T. For slabs or walls 8 inches thick or less but at least 5 inches thick, waterstop strip shall be 3/4 inch by 3/8-inch half circle shape equal to American Colloid Company "Volclay" RX 102.
- R. Miscellaneous Metals - ASTM A36.
- S. Anchor Bolts - ASTM A307.
- T. Expansion Bolts - Hilti Kwik Bolt 3 or equal.
- U. Anchor Bolt Sleeves - Sinco Products, Inc. or equal; high density polyethylene
- V. Stair Nosing - Alumogrit Type 116 by Wooster Products, Inc., or equal; abrasive cast aluminum with concealed integral steel anchors.
- W. Bonding Agent for New to Existing Concrete - "Sika Armatec 110 Epocem" by Sika or equal. (Epoxy modified cementitious product.)
- X. Dry Shake, Non-Metallic - "Surflex" by Euclid or "MasterTop 100" by Master Builders, or equal.
- Y. Galvanizing - ASTM A123 or A153.
- Z. Epoxy Adhesive for Embedding Dowels into Existing Structures – 100% solids, 100% reactive epoxy conforming to ASTM C881, Type IV, Grade 3, Class B and C. The minimum bond strength per ASTM C882 shall be 1800 psi at 7 days. The adhesive shall be formulated to withstand the maximum allowable published loads permanently without creep or failure. The adhesive shall be Hilti "HIT-RE 500 V3" or equal. Power/Rawl "Power-Fast" epoxy with "Fast Set" formulation shall not be used.

- AA. Epoxy Coating for Protection of Exposed Reinforcing Steel Bars at Concrete Saw Cut and Removal Locations - MasterEmaco P124 by Master Builders, or equal. "Sika Armatec 110 Epocem" by Sika Corp. or equal.
- BB. Joint Dowel Bars - Plain steel bars, ASTM A615, Grade 60. Cut bars true to length with ends square and free of burrs.
- CC. Include spacers, chairs, bolsters, ties, and other devices that conform to CRSI specifications necessary for properly placing, supporting and fastening reinforcement in place. Metal accessories shall be plastic coated, galvanized or stainless steel where legs will be exposed in finished concrete surfaces. For slabs-on-grade, use supports with sand plates or horizontal runners for any areas where the base material will not support chair legs. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).
- DD. Use one brand of cement throughout the entire project, unless otherwise approved by the Engineer.

2.02 CONCRETE MIX DESIGN

- A. Mixture proportioning for concrete structures shall be in accordance with ACI 301, 318, and 211.1 but subject to the following requirements.
- B. Two normal weight concrete mixes are generally required; Class A and Class B. Concrete mixes shall be as follows. Batch in accordance with ASTM C94 and the following:

	Class A	Class B
Type of Portland Cement:	I	I
28 Day Compressive Strength (psi):	4500	3000
Slump (inches) +/- 1 inch:	2-4	2-4
Air Content (%) +/- 1%:	6.0	(Not req'd)
Minimum Aggregate Size (inches):	1 (size #57)	1 (size #57)
Water Reducing Agent:	Yes	(Not req'd)
Minimum Cementitious Content (lbs) (Cement and Fly Ash):	550	480
Minimum Portland Cement Content	80% by weight of total Cementitious material.	
Maximum Fly Ash Content:	20% by weight of total cementitious material	
Maximum GGBF Slag Content	20% by weight of local cementitious material.	
Maximum Water/Cementitious Ratio:	0.44	0.66

- C. Contractor shall design and be responsible for the performance of all concrete mixes of specified quality, consistency, and workability to permit concrete to be worked readily into forms and around reinforcement without segregation or excessive bleeding. Hardened concrete shall develop all characteristics required by contract documents.
- D. Concrete mixes shall be proportioned to maximize durability and water tightness and to minimize shrinkage. To this end, total water content shall be kept to the lowest possible

amount consistent with placing and consolidation methods. Water reducing and high range water reducing admixtures shall be used as required to maintain workability. Specified water/cementitious ratio shall not be exceeded.

- E. Concrete proportions shall be established on the basis of previous field experience, or laboratory trial batches in accordance with ACI 301, ACI 211.1 and ACI 318. Proposed mix design shall be accompanied by complete standard deviation analysis or trial mixture test data.
- F. Concrete proportions shall be subject to Engineer's approval. Substantiating data and test records shall be submitted.

PART 3 EXECUTION

3.01 COORDINATION

- A. Reinforcement, sleeves, inserts, anchors, waterstops, and other embedded items shall be accurately placed, supported, and tied prior to concrete placement. Other trades and contractors required to furnish embedded items shall be given ample notice of concrete placement. Reinforcement and embedded items shall be subject to review of Resident Project Representative prior to placing concrete.
- B. Contractor shall notify Resident Project Representative a minimum of 48 hours before placing concrete, excluding nonworking days.
- C. Concrete shall be placed only between hours of 8:00 a.m. and 6:00 p.m., unless otherwise permitted. Concreting shall not be placed after 12:00 noon on the last working day of the week.

3.02 PREPARATION

- A. Unless adequate protection is provided, concrete shall not be placed during rain, sleet, or snow, or when inclement weather is imminent.
- B. Cold Weather - When the average temperature of surrounding air is expected to be below 40 degrees F during placing or within 24 hours thereafter, cold weather concreting in accordance with ACI 306R "Standard Specification for Cold Weather Concreting" shall apply.
- C. Concrete shall be protected from extremes in temperature as specified. During periods not defined as cold weather, but when freezing outdoor temperatures are foreseen or occur, concrete surfaces shall be protected against freezing for the first 24 hours, minimum, after placement.
- D. Hot Weather- When the ambient temperature is 90 degrees F. or above, or when conditions of concrete temperature, air temperature, wind velocity, and relative humidity combine to cause flash set, excessively low slump, cold joints, plastic shrinkage cracking, or otherwise impair the quality of concrete, hot weather concreting procedures in accordance with "Hot Weather Concreting - ACI 305R," shall apply.

- E. When the evaporation rates of bleed water exceed 0.1 pounds per square feet per hour, steps shall be taken to prevent plastic shrinkage cracking. Evaporation rate shall be determined by method shown in "Hot Weather Concreting - ACI 305R."

3.03 INSPECTION, STARTUP, AND TESTING

- A. Notify Engineer 48 hours prior to placement of concrete.
- B. Engineer's approval is required for subgrade, formwork, and reinforcing prior to starting each placement.
- C. Submit proposed concrete mix design to Engineer for review prior to commencement of any Work. Do not begin concrete production until the proposed mix design has been approved by the Engineer.
- D. The following tests shall be performed by an independent testing laboratory acceptable to the Engineer during progress of the Work:
 - 1. Compression Tests Cylinders - Strength test shall consist of three cylinders molded and cured. Cast three cylinders for each 50 cubic yards, or fraction thereof, for each class of concrete placed on any one day, but at least three for each day. Test one cylinder at seven days and two at 28 days in accordance with ASTM C39.
 - 2. Slump Tests - ASTM C143. Slump shall be measured for first batch of each concrete class delivered in morning and afternoon, for each strength test, and whenever consistency of concrete appears to vary.
 - 3. Air Entrainment - ASTM C173 or C231. Perform one test for every second ready-mix truck load.
 - 4. Temperature ASTM C1064. Perform with each slump test.
- E. If the measured slump or air content fall outside the specified limits, make an additional test immediately and on each successive batch until the specified requirements are met by two consecutive batches.
- F. Materials and installed Work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed work shall be done at Contractor's expense.
- G. Test Reports:
 - 1. The testing laboratory shall submit test reports directly to the Contractor, the concrete supplier, and Engineer. Reports shall be identified by the project name and number, and the portion of the structure represented. Reports shall include the dates of casting and testing, air and concrete temperatures, specified strength and mix design, actual strength and mix design, slump, air content, and the name of individual making the test.
 - 2. The testing laboratory shall notify the Engineer immediately by telephone when a low strength break occurs or specifications are not met.

3.04 FORMWORK

- A. Formwork shall conform to ACI 347R.
- B. Formwork shall be designed to safely support vertical and lateral loads, until such loads can be safely supported by concrete structure. Loads shall be carried to ground by formwork and in-place construction of adequate strength.
- C. Formwork shall be designed for dead and live loads, weight of concrete, wind, construction loads including impact, and other loads which act or might act on formwork.
- D. Formwork shall be designed for pressure of concrete giving due consideration to rate of concrete placement, methods of placement, method of consolidation, concrete mix design, temperature, and other factors pertinent to formwork design.
- E. Forms shall have sufficient strength and rigidity to maintain specified tolerances.
- F. Formwork shall be securely braced and anchored against deflection and displacement.
- G. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood insets shall be used for forming keyways, reglets, recesses, and the like for easy removal.
- H. Form ties shall be adjustable in length to permit tightening of the forms and so made that no metal remains nearer than 1-1/2 inch to the concrete surface after the ends are removed. Spreader devices shall leave holes no greater than 7/8 inch in diameter. Washers or buttons leaving shallow depressions in the surface will not be permitted. Twist type ties may be used only for unexposed concrete.
- I. Provide holes in the form for insertion of vibrators to properly consolidate concrete.
- J. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- K. Chamfer exposed corners and edges using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- L. The maximum allowable tolerance in either the horizontal or vertical planes shall be 1/4 inch in 10 feet.
- M. Provisions for Other Trades - Provide openings in concrete formwork to accommodate Work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.
- N. Oil temporary forms with non-staining form oil.
- O. Cleaning and Tightening - Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing

concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.05 DOWELING TO EXISTING STRUCTURE

- A. Dowels shall be embedded into existing concrete where shown on Drawings. Unsound concrete shall be reported to Engineer.
- B. Adhesive dowels shall be placed in holes larger than the reinforcement diameter using a rotary percussion hammer and carbide bit. Hole diameters shall be as recommended by manufacturer for each specific reinforcing diameter.
 - 1. Unless indicated otherwise, adhesive dowels shall be embedded as follows:

Stud Diameter	Minimum Embedment
#3	3-1/4 inches
#4	4-3/8 inches
#5	5-3/4 inches
#6	6 inches
#7	7-1/4 inches
#8	8-7/8 inches

- C. Hole shall be cleaned of dust and residue by blowing the hole with dry and oil-free compressed air. Air nozzle shall be inserted to bottom of hole. The holes should also be brushed using a nylon brush to remove dust and other debris which may have been pressed into the walls of the hole.
- D. Standing water and frost shall be removed immediately prior to injecting adhesive.
- E. Adhesive shall be injected from bulk-loading caulking gun, disposable caulking tubes, or pneumatic dispenser. Adhesive shall be injected using extension on nozzle to reach bottom of hole. Adhesive shall be injected to pre-determined depth which will cause hole to be completely filled after bar is inserted.
- F. Bar shall be inserted and slightly rotated to ensure adhesive completely surrounds bar.
- G. Adhesive displaced from hole shall be removed immediately.
- H. The manufacturer's installation guidelines for the specific adhesive chosen shall be strictly followed.

3.06 REINFORCEMENT

- A. Place reinforcing to ACI recommended tolerances.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by the Engineer.

- D. Unless shown otherwise in drawings, place reinforcement to maintain minimum coverages conforming to ACI standard practice for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Welding of reinforcement shall conform to AWS D1.4.
- F. Unless otherwise specified on Drawings, reinforcing steel splices shall be lapped conforming to ACI 318, Class B splices.
- G. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh plus 2 inches and lace splices with 16-gauge wire. Do not make end laps between supporting beams. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.07 INSERTS

- A. Metal inserts such as anchor bolts, sleeves, embedded metals, etc. shall be free of scale, loose rust, oil, grease and other coatings. Remove protective film from cast iron with flame.
- B. Ensure that items are accurately positioned and rigidly supported against displacement before placing concrete.
- C. The location of anchor and foundation bolts must not vary from the dimensions shown on the Contract Drawings by more than the following:
 - 1. 1/8-inch center to center of any two bolts within an anchor bolt group, where such group is defined as the set of anchor bolts which receives a single fabricated steel shipping piece.
 - 2. 1/4-inch center to center of adjacent bolt groups.
- D. Split rib types of waterstops are acceptable at construction joints and isolation (expansion) joints.
- E. Secure waterstops in place by wire ties to hog rings. Hog rings to be installed between last rib and edge and spaced at 12 inches on center.
- F. Field weld joints in waterstops using indirect heating element.

3.08 JOINTS

- A. Joints not shown on Drawings shall be made at locations that will least impair strength of structure, and shall be approved by the Engineer prior to construction.
- B. Construction Joints:
 - 1. Keyways at least 1-1/2-inch-deep by width, which is equal to 1/3-member thickness, shall be provided in all construction joints in walls, supported slabs, and between walls and foundation systems.

2. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints. Do not continue reinforcement through sides of strip placements.
 3. Concrete slabs on grade shall be poured in strip pattern shown on the Drawings.
 4. Roughen surfaces of set concrete at all joints. Clean surfaces of laitance, coatings, loose particles, and foreign matter. Roughen surfaces in a manner to expose bonded aggregate uniformly. Apply approved bonding adhesive or cement grout. Bonding cement grout shall be evenly spread and shall consist of 1-part cement and two parts fine aggregate. Fresh concrete shall be placed before grout or bonding adhesive has obtained initial set. Grout shall be approximately 2-inch-thick in walls.
- C. Unless otherwise shown, provide isolation joints in slabs on grade at all points of contact between slabs on ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, equipment bases and elsewhere as indicated.
- D. Expansion Joints:
1. Provide preformed expansion joints as shown on Drawings or otherwise required.
 2. Expansion joint material shall be 1/2 inch in thickness, unless otherwise indicated.
 3. Concrete edges at expansion joints subject to vehicular traffic shall be tooled to a 1/8-inch radius.
 4. When sealed expansion joints are called for on the Drawings, pourable approved joint sealants shall be placed along top edges of expansion joints per manufacturer's instructions.
- E. Control Joints for Slabs:
1. Control joints shall be located and constructed as shown on the Drawings.
 2. Within 24 hours of finishing concrete, cut joints to a depth of 1/4 slab thickness when it is firm enough to resist raveling, tearing, or dislodging of aggregates.
- F. Clean joints thoroughly with compressed air, wire brushing, or sandblasting.
- G. Fill joints with specified joint filler.

3.09 CONCRETE SCHEDULES

- A. Unless indicated otherwise, concrete shall be furnished as follows:
- | | |
|----------|--|
| Class A: | For all structures not defined under Class B concrete. |
| Class B: | For pipe saddle supports, Pipe pier supports, buried electrical duck banks, equipment pads, housekeeping pads and mudmats, unless noted otherwise. The above items shall not be exposed to weather and shall not be submerged in liquids; otherwise, they shall be of Class A concrete as specified above. |

3.10 PLACING CONCRETE

- A. General - Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.
- B. Do not place concrete on frozen ground, mud, or debris. Dampen subgrade prior to placing concrete slabs on grade where vapor barrier is not required.
- C. Inspection - Before placing concrete, inspect, and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Where necessary, notify other trades to permit installation of their work.
- D. Convey concrete from the mixer to the place of final deposit by methods which will prevent the loss or separation of the materials:
 - 1. When concrete placing is interrupted for more than 1/2 hour, place a construction joint.
- E. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Avoid unplanned cold joints. Alternate equipment shall be immediately available for use in the event that primary placing equipment or system breaks down.
- F. Use internal vibration to consolidate. Size at least one vibrator to work around closely spaced reinforcing. Provide a standby vibrator whenever working less than three vibrators in the pour. All equipment and procedures used to consolidate concrete shall comply with ACI 309R.
- G. Concrete shall be thoroughly consolidated by vibrating, spading, rodding, or forking so that concrete is thoroughly worked around reinforcement and embedded items, and into corners, angles of forms, eliminating air and stone pockets.
- H. Hot Weather Concreting – Follow recommendations of ACI 305R for preparation, placing, protection and curing during hot weather.
- I. Cold Weather Concreting – Follow recommendations of ACI 306R for preparation, placing, protection and curing during cold weather.
- J. Contractor shall keep good thermometer at Site for monitoring air or concrete surface temperature.
- K. Where saw cutting and removal of existing concrete walls, slabs, etc. exposes the ends of reinforcing steel bars, the Contractor shall coat the exposed concrete surface with the specified epoxy coating.
 - 1. Prior to application of the epoxy coating, the concrete surface to be coated shall be roughened and cleaned of all loose materials and dust.
 - 2. Epoxy coating shall be water based rebar coating agent, moisture insensitive, 3-component, epoxy-modified cementitious product.
 - 3. Application methods and thickness of coating shall be as recommended by the manufacturer.

- L. Apply the specified bonding agent per the manufacturer's instructions at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 1. Prior to application of the bonding agent, the existing concrete surfaces to be coated shall be roughened and cleaned of all loose materials and dust, thus exposing the aggregate to provide a mechanical bond in addition to the chemical bond provided by the bonding agent.
 - 2. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.

3.11 DEFECTIVE CONCRETE

- A. Defective concrete is defined as concrete in place which does not conform to specified design strength, required percent air, shapes, alignments and elevations, as shown on the Drawings and/or which presents faulty surface areas. Evaluation and acceptance of concrete shall conform to ACI 318, ACI 301, and ACI 350 as applicable.
- B. All defective concrete shall be removed and replaced in a manner meeting with the Engineer's approval, or should surface imperfections only occur, may be patched at the discretion of, and in a manner satisfactory to the Engineer; however, permission to patch the Work shall not be considered as a waiver of the Engineer's right to require complete removal and replacement of such defective Work should the patching fail to satisfactorily restore the required quality and appearance of the Work. All such Work shall be performed at the Contractor's expense, without extension of time.
- C. If for any reason, in the opinion of the Engineer, the testing of any section of the completed structure is necessary, a superimposed load shall be applied by the Contractor and the test conducted in accordance with the current Building Code at the Contractor's expense irrespective of the results of the tests. In cases where failure is declared, the Engineer shall have the authority to order the defective construction removed. All expense of removing such defective construction and substituting new construction, including expense of removing and replacing the Work of others, or protecting and repairing the Work of others, shall be borne by the Contractor.

3.12 CURING

- A. General - Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations.
- B. Begin curing after finishing concrete but not before free water has disappeared from concrete surface in accordance with ACI 308 "Standard Practice for Curing Concrete" subject to the requirements specified herein.
- C. Cure concrete at least five days at concrete temperatures above 70 degrees F or at least seven days at concrete temperatures between 50 degrees F and 70 degrees F. Maintain

concrete temperature above 50 degrees F during the curing period. Tanks and other liquid retaining structures shall be cured for a minimum of 10 days.

- D. For exposed surfaces, utilize one of the following methods:
1. Membrane Curing Compound - Apply in two coats at right angles to each other upon completion of the Work - each one in accordance with the manufacturer's instructions. Compounds must not be used on surfaces when surface treatments, such as tile, additional concrete, paint, liquid hardeners, and adhesive coatings are specified unless the compound is known not to interfere with adhesion.
 2. Sheet Curing Materials - Place materials upon completion of the finishing work. Lap edges 6 inches and seal to create a moisture barrier that must remain intact for the duration of the curing period.
 3. Sprinkling, Soaking, or Ponding - Maintain surfaces continuously wet for the duration of the curing period as described above.
- E. If formed surface is exposed during the curing period, treat the surface as an exposed surface for the remaining duration of the curing period.

3.13 FINISHING SURFACES

- A. Formed Surfaces - Finishing of formed surfaces shall be in accordance with the requirements of Section 5, ACI 301 subject to the following provisions specified herein:
1. Do not remove forms and shoring until the concrete has cured sufficiently to carry its own weight and remain in place without deformation. Remove forms with care to prevent spalling. Reshore concrete carrying superimposed load until the concrete has attained design strength.
 2. Inspect honeycombed areas. Replace areas as directed by the Engineer.
 3. On exposed vertical unpainted surfaces, building interior, and to 6 inches below grade on building exterior, remove fins and projections, fill holes, and produce smooth-rubbed finish per ACI 301 by wetting and rubbing surfaces with carborundum brick or other abrasive until uniform color and texture are produced.
 4. Horizontal surfaces, such as at tops of walls, pedestals, horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces, shall be struck off smooth and finished with a texture matching the adjacent formed surfaces.
- B. Slabs and Horizontal Surfaces - Finishing of unformed surfaces shall be done in accordance with the requirements of Section 5 of ACI 301 and Chapter 8 of ACI 302:
1. All slabs, whether receiving additional finishes or not, shall receive a float finish when concrete has stiffened sufficiently to permit the operation of a power drive float and all surface water has disappeared. Check and level slab surface to obtain a Class A finishing tolerance per ACI 117.
 2. Interior slabs not receiving tile shall be given a hard trowel finish as follows:

- a. Follow initial finishing with a steel trowel worked flat to produce a fine, non-slip, sandy texture.
 - b. Follow the first steel troweling with a second steel troweling to produce a dense, smooth surface after the surface has become hard enough to give a ringing sound from the trowel.
 - c. Retool joints and edges as required.
3. Exterior slabs and concrete stair treads shall be given a non-slip broom finish with scored texture perpendicular to main traffic route. Retool joints and edges.
- C. Roadway Repairs and Walkways:
1. Float Finish - Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/4 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.
 2. Final Tooling - Tool edges of paving and joints formed in fresh concrete with a jointing tool to a radius of 1/4-inch Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.14 REMOVING FORMS

- A. General - Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the Work, may be removed after curing at not less than 50 degrees F for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.
- B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 80% of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimen's representative of concrete location or members. Construction loads shall not exceed 80% of design live load until 28 days after concrete placement.
- C. Form-facing material may be removed four days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

3.15 REUSING FORMS

- A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.

- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to the Engineer.

3.16 CONCRETE REPAIRS AND REPLACEMENT

- A. Remove and replace, at Contractor's expense, any concrete that was part of the Work and that is broken, damaged, or defective, or does not meet the requirements of this Section.
- B. Protect concrete from damage. Exclude traffic from slabs-on-grade and roadway/walkway paving for at least 14 days after placement. When construction traffic is permitted, maintain slabs and paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Patching Defective Areas - Repair and patch defective areas with cement mortar immediately after removing forms, when acceptable to the Engineer.
- D. Mix dry-pack mortar, consisting of one-part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing.
 - 1. Cut out honeycombs, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
 - 2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- E. Repaired Formed Surfaces - Remove and replace concrete having defective surfaces if defects cannot be repaired to the satisfaction of the Engineer. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.
 - 1. Repair concealed formed surfaces containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.
- F. Repairing Unformed Surfaces - The Contractor shall test unformed surfaces such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.

1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01-inch-wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
 2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
 3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
- G. Repair isolated random cracks and single holes 1 inch or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

3.17 HOUSEKEEPING PADS

- A. Unreinforced concrete pads shall be installed under all floor-mounted items such as motor control centers, electrical panels, control panels, transformers, and HVAC equipment that do not produce vibration. The pads shall be 4 inches high with chamfered edges and a troweled finish, unless noted otherwise on the drawings.

3.18 EQUIPMENT PADS

- A. Reinforced concrete pads shall be installed under all generators, pumps, motors, blowers, drives or other pieces of equipment with internal moving parts that may produce vibration. The pads shall be a minimum of 4 inches high. Refer to standard pad details given on the drawings.

PART 4 SPECIAL PROVISIONS

- A. Not Used.

END OF SECTION

**SECTION 16010
GENERAL ELECTRICAL PROVISIONS**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes general administrative and procedural requirements in accordance with the Drawings and as specified herein.
- B. The Contractor shall furnish and install all wire, conduit, disconnects, and related items, for HVAC equipment 120 volts or greater under Division 16. Controls, control wiring, and control conduit for HVAC equipment less than 120 volts shall be furnished and installed under Division 15.
- C. The responsibility for the following equipment items and Work shall be as listed below:
 - 1. Motors, unless indicated otherwise, shall be furnished and installed under other sections, but shall be wired as indicated on the Drawings under Division 16.
 - 2. Controls for motors on mechanical equipment unless indicated otherwise, will be furnished under other sections, but shall be installed and wired under Division 16.
 - 3. Unless otherwise indicated, all electrical and control equipment not furnished under Division 16 shall be installed and wired under Division 16.
 - 4. Electrical and control equipment furnished under Division 16 but which is to be installed under other sections, shall be wired under Division 16 as indicated on the Drawings and Specifications.

1.02 SUBMITTALS

- A. Specific submittals will be identified in individual sections of Division 16.

1.03 QUALITY ASSURANCE

- A. Work shall comply with the latest edition of NEC as prepared by NFPA, NESC.
- B. Contractor shall comply with applicable local electrical code requirements, where provisions of local codes are modified or supplemented with NEC, the more stringent interpretation shall prevail.
- C. Equipment and materials shall be new and, if of the same type as other performing parts of the same system, shall be the products of the same manufacturer.
- D. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum of five years.
- E. Equipment, materials and installation shall comply with applicable requirements of NEMA, IEEE, and ANSI.

- F. All electrical equipment shall be listed and labeled by UL.
- G. Electrical enclosure requirements shall conform with area classifications, whether designated on the Drawings or not.
- H. Contractor shall provide Owner with all certificates of final inspection from the agency of proper authority prior to receiving final payment.

1.04 ELECTRICAL CONTROL AND COORDINATION

- A. Installation of electrical equipment shall be scheduled, sequenced, and positioned to efficiently coordinate the best flow of Work for electrical systems and all other non-electrical construction activities.

1.05 PRODUCT HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. A copy of these instructions shall be included with the equipment at the time of shipping.
- B. Equipment damaged in shipment or storage shall not be installed and shall be replaced by the Contractor.

1.06 GUARANTEE

- A. Provide complete warranty information for each item. Include the following information:
 - 1. Date of beginning warranty period.
 - 2. Duration of warranty.
 - 3. Warranty options.
 - 4. Name, address, phone numbers, and procedures for filing warranty claims.
- B. The Contractor shall warrant the completed system wiring and equipment to be free from inherent mechanical and electrical defects for a period of one year from the date of substantial completion.

PART 2 PRODUCTS

2.01 NEMA RATINGS

- A. Equipment and panels shall be NEMA 4X stainless steel unless designated otherwise on the Drawings, or in the electrical or equipment specifications.

PART 3 EXECUTION

3.01 COORDINATION

- A. Coordinate electrical system, equipment, and materials installations with other building components and building trades.

- B. If the current requirement of any motor or piece of equipment is increased to such an extent that the wiring, conduit, or starter for that motor or equipment must be increased from that shown on the Electrical Drawings, the Contractor shall furnish and install the larger items under the section the equipment is specified. The increased wiring, conduit, and starter cost shall be included in the motor or equipment cost under the section the equipment is specified and no additional compensation will be allowed.
- C. Certain equipment furnished under the equipment sections shall be connected to the plant control system as shown on the P&ID drawings. Mechanical and electrical components for these connections shall be furnished, under the equipment sections, as required to provide control functions compatible with the plant control system. These connections and any remote-control connections shall be furnished and wired to clearly labeled terminal strips within the equipment control panel.
- D. If the electrical control requirements change from that specified or shown on the Electrical or P&ID drawings due to the requirements of the actual equipment furnished, the Contractor shall perform all necessary modifications under the equipment section and no additional compensation will be allowed. The final installation shall meet the operational intent of that specified and shown on the drawings.

3.02 INSTALLATION

- A. Verify dimensions by field measurements.
- B. Coordinate building and wall penetrations with other construction activities.
- C. Coordinate structural support devices and sleeves to be set in cast-in-place concrete and with other structural components as they are constructed.
- D. Coordinate connection of electrical systems with existing overhead and underground systems or utility services. Comply with government regulations, utility company requirements and local codes.
- E. Install electrical equipment to facilitate servicing, maintenance, ease of disconnection, and minimal interference with other installations.
- F. Electrical penetrations, shown on the Drawings or not, through an exterior surface shall be sealed and made water-tight. For metal panels, use a sealant around the penetration on both sides of the wall.
- G. Electrical penetrations, shown on the Drawings or not, through the fire resistance rated walls or floors shall be fire stopped as required by NEC using the approved method as recommended by the manufacturer. Fire stops (e.g. caulk) shall have a 3-hour fire resistance rating, and shall be made by the 3M Company, or equal.
- H. Electrical penetrations, shown on the Drawings or not, to hazardous areas shall be gas-tight and fire-stopped using "Link-Seal" FD or FS seals as manufactured by Thunderline Corporation, or equal.
- I. Multiwire (shared neutral) branch circuits operating at 120 VAC are not acceptable.

3.03 CUTTING AND PATCHING

- A. Perform cutting and patching of electrical equipment and materials required to:
 - 1. Uncover Work for the installation of ill-timed Work.
 - 2. Remove or replace defective or damaged Work.
 - 3. Remove or replace Work not conforming to the contract or requiring specified testing.

3.04 DEMOLITION AND CLEANING

- A. Electrical equipment, conduit, wire and appurtenances that are removed shall remain the property of the Owner and shall be stored at a site selected by the Owner. The Owner reserves the right to require the Contractor to dispose of certain unwanted portions of removed equipment and materials. The Owner shall have the right to reject any or all materials removed during construction, and the Contractor shall haul away and dispose of these materials in a suitable manner at no additional cost to the Owner.
- B. Abandoned conduit and wiring, unless specified or marked as "spare", shall be removed. Before any removal, consult with the Owner if materials are to be disposed of or reused. In situations where a portion of the conduit run back to its source remains in service, the abandoned conduit shall be removed back to the point where the conduit will remain in services. Resulting conduit stubs shall be plugged.
- C. When all Work is completed, tested, and accepted by the Engineer/Owner, the Contractor shall clean all light fixtures, equipment, and exposed surfaces affected by the Work.
- D. Contractor shall at all times keep the Work area in an orderly and clean condition by periodic removal of excess and unused materials.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 16020
GROUNDING AND BONDING**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes solid grounding of electrical systems and equipment. It includes basic requirements for grounding for protection of life, equipment, circuits, and systems.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Wiring schematics with wire termination points identified.
 - 1) Manufacturer's technical product sheets on each component to be furnished.
 - b. Field testing certificates, signed by the Contractor, certifying that the field tests comply with the requirements specified in Quality Assurance - Part 1.03.
 - c. Furnish manufacturer's name(s) and catalog numbers.
 - d. Manufacturer's recommended method of installation for the products to be furnished.
 - 2. Information for the Record:
 - a. Manufacturer's qualifications, including a list of similar installations.

1.03 ELECTRICAL AND CONTROL COORDINATION

- A. Layout and installation of grounding system and accessories shall be coordinated with other installations.

1.04 PRODUCT HANDLING

- A. Deliver ground wire properly packaged in factory fabricated type containers, or wound on NEMA specified type wire reels.
- B. Store grounding materials and ground wire in a clean, dry space in original containers. Protect products from weather, damaging fumes, construction debris, and traffic.
- C. Handle grounding wire carefully to avoid abrading, puncturing and tearing wire insulation. Ensure that dielectric resistance of the cable is maintained.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Grounding materials shall be corrosion-resistant and chemically compatible with the materials with which they come in contact.
 - 1. Conduit shall be as specified in Section 16130.
 - 2. Conductors for equipment grounding shall be stranded THHN/THWN or XHHW-2, color-coded green. Equipment grounding conductor size shall not be less than that provided in the latest edition of the NEC, or as shown on Drawings, whichever is larger.
- B. Use of conduit system for the ground conductor shall not be permitted.
- C. Ground rods shall be copper clad and not less than 3/4 inch in diameter and 10 feet long.
- D. Connections:
 - 1. In readily accessible locations, compression or bolted connectors of Burndy Engineering Company or equal shall be used.
 - 2. In locations not readily accessible after installation, splices and connections of grounding cable shall be made by exothermic welding process equal to Cadweld.
- E. Where an underground ground ring encircling a building or structure is used, it shall be bare, stranded, copper conductor not smaller than No. 4/0 AWG, unless specified or shown otherwise.
- F. Ground Enhancement Material (GEM) shall be permanent, maintenance-free, and maintain its earth resistance with time. GEM in its set form shall have a resistance of not more than 20 ohm-centimeters. GEM shall be as manufactured by Erico Electrical Products, or equal.

PART 3 EXECUTION

3.01 COORDINATION

- A. Metallic water service pipe, metal frame of a building, concrete encased electrodes, and ground rings surrounding a structure shall be bonded together to form an effective grounding system.

3.02 INSTALLATION

- A. System neutrals; secondaries of control power, instrument, metering and relaying transformers; noncurrent-carrying metallic equipment enclosures; exposed metal structures; and supports shall be effectively bonded to ground grids and busses provided under this Contract.

- B. Noncurrent-carrying metallic parts, electrical equipment and systems including, but not limited to, transformers, motors, lighting, equipment, raceways, control panels, consoles, panelboards, and cable shields, as well as metallic structures, shall be effectively grounded.
- C. Low-voltage electrical equipment, except as otherwise specified, shall be grounded by means of a separate conductor which shall be included in any multi-conductor cable.
- D. Electrical continuity of equipment grounding circuits such as metallic raceways shall be assured by bonding where necessary; equipment grounding conductors passing through metallic raceways shall be bonded to the raceways where they enter and leave.
- E. Particular care shall be taken to ensure good equipment ground continuity between the conduit system and equipment frames and enclosures. Where necessary, jumper wires shall be installed.
- F. Conduits stubbed-up below a floor mounted electrical apparatus shall be fitted with insulated grounding bushings and connected to the electrical apparatus ground bus or structure. Boxes mounted below floor mounted electrical apparatus shall be bonded to the apparatus ground bus.
- G. Insulated grounding bushings shall be used on the grounding of all conduits, 480 volts and higher, with copper grounding conductors.
- H. Conduits and raceways, regardless of type and material, shall include a separate insulated equipment ground conductor, whether shown on the Drawings or not, sized no less than required by the latest edition of the NEC or by the Drawings, whichever is larger, and connected to the grounding grid. Each circuit grounding conductor shall be dedicated for that circuit.
- I. Connections:
 - 1. Exposed connections shall be made by means of approved grounding clamps. In readily accessible locations, compression or bolted connectors shall be used. Exposed connections between different metals shall be sealed with a synthetic base substance in which zinc particles are suspended such as Burndy Penetrox A-13, Thomas & Betts, (Blackburn) Contax or equal.
 - 2. All buried connections shall be made by an exothermic welding process, "Cadweld", or equal. The tops of all ground rods shall be at least 12 inches below grade.
 - 3. Terminate insulated equipment grounding conductors for feeders and branch circuits with pressure type grounding lugs. Where metallic raceways terminate at metallic housings without mechanical and electrical connection to the housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to the ground bus in the housing. Bond electrically noncontinuous conduits at both entrances and exits with grounding bushings and bare grounding conductors.

4. Connections at Test Wells: Use compression type connectors on conductors and make bolted and clamped type connections between conductors and ground rods.
 5. Compression Type Connections: Use hydraulic compression tools to provide the correct circumferential pressure for compression connectors. Use tools and dies recommended by the manufacturer of the connectors. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the ground conductor.
 6. Insulated grounding conductors connected to ground rods or ground buses shall be insulated over the entire area of the connection and sealed against moisture penetration of the insulation and cable.
 7. Ground rings shall be in direct contact with earth, buried at a depth of no less than 30 inches, and 20 feet long minimum, unless noted otherwise.
- J. All non-current-carrying metal parts of portable equipment and fixed equipment including their associated fences, housings, enclosures, and supporting structures shall be grounded.

3.03 GROUNDING APPLICATIONS

- A. Underground grounding conductors shall be bare, tinned, stranded copper except as otherwise indicated.
- B. For telephone, alarm, and communication systems, provide a No. 4 AWG minimum green insulated copper conductor in raceway from the grounding electrode system to each terminal cabinet or central equipment location. All grounds in the telephone system shall be bonded together.
- C. Separately derived systems required by the NEC to be grounded shall be grounded in accordance with the latest edition of the NEC.
- D. Ground metal poles supporting outdoor lighting fixtures to a grounding electrode as indicated in addition to a separate equipment grounding conductor run with supply branch circuit.
- E. For all other equipment grounding conductor applications, comply with NEC for sizes and quantities of equipment grounding conductors, except where larger sizes or more conductors are indicated. Use of conduit system for ground conductor shall not be allowed.
- F. Bond the telecommunications grounding electrode to the power grounding electrode using No. 6 AWG copper wire minimum.

3.04 TESTING

- A. Comply with Section 16050.
- B. Testing shall be by independent electrical testing organization to perform tests described below and in Section 16050.

- C. Perform a megger test on the completed grounding system at each location where a maximum ground resistance level is specified, at service disconnect enclosure ground terminals, and at ground test wells.
 - 1. Measure ground resistance without the soil being moistened by any means other than natural precipitation or natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
 - 2. Perform tests by the two-point method in accordance with IEEE 81, "Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System." Simple moisture addition is not acceptable.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 16030
ELECTRICAL IDENTIFICATION**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes the provision of identification of electrical equipment and materials in accordance with the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Product data for each type of identification product specified.
 - b. Manufacturer's name(s) and catalog numbers.
 - c. Nameplate schedule.

1.03 QUALITY ASSURANCE

- A. Applicable Standards:
 - 1. Comply with requirements of ANSI Standard, "Scheme for the Identification of Piping Systems" and "Wiring and Equipment Identification" with regard to type and size of lettering for raceway and cable labels.

PART 2 PRODUCTS

2.01 NAMEPLATES AND LEGENDS

- A. New equipment shall be identified by means of a laminated phenolic nameplate. Modified equipment shall be identified in the same manner as was the original equipment. Equipment whose designation has been changed shall be relabeled as specified or directed.
- B. Nameplates shall have white background with black engraved lettering identifying function or equipment designation.
- C. Main nameplate on MCC, switchgear, control panel, and other panels shall be 2-inches high by 6-inches wide with 1-inch high letters. Individual nameplates shall be 1-inch high by 3-inches wide with 1/4-inch high letters.
- D. Legends shall be completely worded without abbreviations except as approved by the Engineer.
- E. Blank nameplates shall be included on all unused components.

- F. Nameplates on electrical panels which are fed from a remote source shall include, in addition to their function, where the power originates from (e.g., scum pump panel - fed from MCC-1, MCC-1 fed from main SWG).

2.02 CONDUCTOR IDENTIFICATION

- A. Wires and cables, except at lighting and 120 volts convenience outlets, shall be identified by means of tags describing circuit.
- B. Tags shall be on all connections, splices, and terminations, and shall also be applied where entering and leaving common wireways.
- C. Wire tags shall be equal to Thomas & Betts white, self-adhesive wrap or Panduit heat shrink type labels. Tags shall be vinyl, polyester or Polyolefin, resistant to excessive heat, water, cold, dirt, and grease.
- D. The tag type-on-area shall be sufficiently sized to contain five numerals on each line. Wire numbers shall be typed on with Thomas & Betts E-Z Coder Printer, Panduit Dura-Mark Printer or equal.
- E. Insulated conductors No. 8 AWG and larger shall be color coded at each end with a 2-inch wrap of suitable color tape as follows, if integral color is not utilized:

System	Phase Conductors A, B, and C	Neutral Conductors
120 volts, single-phase, 2-wire	Black	White
120/240 volts, single-phase, 3-wire	Black and Red	White
208 volts, 3-phase, 3-wire	Black, Red, Blue	--
208Y/120 volts, 3-phase, 4-wire	Black, Red, Blue	White
480 volts, 3-phase, 3-wire	Brown, Orange, Yellow	--
480Y/277 volts, 3-phase, 4-wire	Brown, Orange, Yellow	White
2400 volts, 3-phase, 3-wire	Black, Red, Blue**	--
2400 volts, 3-phase, 4-wire	Black, Red, blue **	White**
4160 volts, 3-phase, 3-wire	Black, Red, Blue**	--
4160 volts, 3-phase, 4-wire	Black, Red, Blue**	White**
4800 volts, 3-phase, 3-wire	Black, Red, Blue**	--
4800 volts, 3-phase, 4-wire	Black, Red, Blue**	White**
Grounding	Green	

** Apply tape near termination on cable.

Tape shall be Scotch #35 in color required above as manufactured by 3M or equal.

- F. Direct current conductors shall be identified by the following methods:
 1. Provide self-sticking markers on each direct current conductor.
 2. Marker colors shall be black letters on "alert orange" background.
 3. Each marker shall designate circuit conductor polarity and voltage (e.g. 28 VDC).
 4. Direct current control conductors shall be color-coded dark blue.
- G. On a 4-wire delta-connected system where the midpoint of one phase winding is grounded to supply lighting and similar loads, the conductor or busbar having the higher phase voltage to ground shall be durably and permanently marked by an outer finish

that is orange in color or by other effective means. Such identification shall be placed at each point on the system where a connection is made if the grounded conductor is also present.

PART 3 EXECUTION

3.01 COORDINATION

- A. Submit nameplate schedule for review and approval by the Engineer prior to fabrication of nameplates.

3.02 INSTALLATION

- A. Contractor shall furnish and install equipment nameplates, typed panel rosters, wire and cable tags, stenciling, and other identification with text, lettering type, etc., as specified in this Section.
- B. Nameplates shall be fastened by means of 3/16-inch diameter roundhead, stainless steel, self-tapping screws. UL 508 4X enclosure nameplates shall be secured with silicon adhesive.
- C. Pull, terminal, and junction boxes shall be identified by stenciling the names of the feeders and system wires and cables passing through them.
- D. MCCs and power panels of NEMA 3R double-door construction shall have stenciled panel designation at the top and branch designations appropriately spaced in the outer doors. NEMA 4X lighting and power panels shall have designations appropriately placed on them.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 16050
ELECTRICAL TESTING**

PART 1 GENERAL

1.01 SCOPE

- A. Contractor shall furnish all labor, tools, equipment, and materials necessary to perform electrical testing in accordance with the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:
 - 1. Information for the Record:
 - a. Certified reports of field tests and observations.

1.03 QUALITY ASSURANCE

- A. Testing shall be performed or supervised by the Contractor. Contractor shall be responsible for test records.
- B. Contractor shall visually check equipment, wire, phase matching and rotation in preparation for testing.
- C. Manufacturer's recommended instructions for testing shall be used when applicable.
- D. Testing shall be in compliance with accepted engineering practices, NEC and IEEE Standards.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 COORDINATION

- A. Before conducting field tests, the Contractor shall submit to the Engineer a written outline of the methods of testing and equipment to be used.

3.02 FIELD TESTING

- A. Required testing shall be completed and written report submitted to the Engineer for acceptance before the Contractor proceeds with subsequent Work.
- B. Written reports shall be required on tests. Careful records shall be kept of each test and results shall be submitted to the Engineer.

- C. Final payment will not be released until all required written test reports are submitted and distributed for information.
- D. Contractor shall be responsible for the procurement and installation of compatible components and equipment, and shall perform all Work necessary for the proper operation and guarantee of the equipment.
- E. Contractor shall make such tests as may be necessary to demonstrate that the Work and equipment, as installed, comply with the Contract Documents. When required by the Engineer, such tests shall be performed in the Engineer's presence.
- F. Any system or equipment failing to meet the Contract requirements, or to function properly, shall be rectified at the Contractor's expense by readjusting or by removing and replacing the faulty Work or equipment, and the tests rerun until the requirements are met.
- G. Engineer reserves the right to require the Contractor's equipment be checked by an independent instrument tester.

3.03 CONDUIT TESTING

- A. After conduit and accessories have been installed and all concreting operations completed, all conduit runs shall be satisfactorily cleared of all obstructions and foreign matter. Any defects that might damage cable upon installation shall be corrected.
- B. Conduits shall be tested, in the presence of the Engineer if requested, by pulling through each conduit a flexible cylindrical mandrel having an outside diameter 1/4 inch less than the inside diameter of the conduit, followed by a stiff wire brush of the same diameter as the conduit. Where conduits installed under this Contract are connected to conduits installed by others, the entire runs between boxes, manholes, or other termination points shall be tested.
- C. Contractor shall keep a record, by number, of all conduits tested clear, and shall submit written copies of such record to the Engineer.
- D. Defects or stoppages in conduit runs installed by the Contractor shall be corrected. Defects or stoppages in conduit runs installed by others shall be reported to the Engineer, who shall determine the corrective measure to be taken.

3.04 GROUNDS

- A. Contractor shall test the ground resistance of the systems.
- B. Dry season resistance of each system shall not exceed 5 ohms. If such resistance cannot be obtained with the system as shown, provide additional grounding as directed by the Engineer.
- C. Where multiple ground rods are required, they shall be 20 feet apart. The Contractor, in the presence of the Engineer if requested, shall test all made grounds for continuity and resistance. Ground resistance of more than 5 ohms shall be reduced to 5 ohms or less by the use of additional, and properly separated, ground rods, or deep driving of ground rods.

- D. In addition, where necessary, Ground Enhancement Material (GEM) shall be used to provide low resistance and high conductivity. GEM shall be installed per manufacturer's recommendations.

3.05 LOW-VOLTAGE CIRCUIT BREAKERS

- A. Each low-voltage circuit breaker shall be manually opened and closed five times before being energized.
- B. Acceptance of each ground fault device will be only on an in-person trip and reset cycle demonstration for the Engineer or his representative - if the Engineer requests to be present. The Engineer shall be notified at least one week before scheduling this test.

3.06 LOW VOLTAGE SYSTEM (INSULATION RATED AT 600 VOLTS)

- A. Contractor shall perform insulation resistance testing of 480-volt power feeder circuits with a 500-volt megger.
- B. Written test reports of the results shall be submitted to the Engineer prior to final inspection. Equipment which may be damaged during this test shall be disconnected before the test and reconnected upon completion.
- C. Upon the completion of each electrical system rated 600 volts or less, but before wiring connections are made to equipment, the Contractor shall test each circuit and each piece of equipment for:
 - 1. Continuity.
 - 2. Grounds.
 - 3. Insulation resistance, phase-to-phase and phase-to-ground, of 480 volts conductors and equipment with a 500-volt megohmmeter.
- D. Discontinuities or grounds discovered in low voltage systems shall be corrected before the insulation resistance is measured.
- E. Insulation resistance readings, lower than required by good practices or Code, shall be promptly repaired or replaced. Retesting shall be completed until acceptable readings are acquired.
- F. Installed control cables and conductor terminations for instrumentation and controls shall be tested for properly grounded cable shields. Control cable shields shall be isolated from ground except at the grounding point. The Contractor shall remove all improper grounds at no additional cost to the Owner. This test shall be witnessed by the Engineer if requested.
- G. Following satisfactory completion of circuit and equipment insulation resistance tests, connection of the wiring to equipment, but before it is energized; the tests specified above shall again be carried out.
- H. Defective or improperly installed electrical equipment or wiring provided or installed and connected by the Contractor shall be repaired, replaced, or properly installed by the Contractor until it satisfactorily passes the field tests.

- I. Irregularities or faulty equipment shall be immediately reported to the Engineer.

3.07 RESERVED

3.08 RESERVED

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 16120
CONDUCTORS AND CABLES (600 VOLTS AND LESS)**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes 600-volt, single or multi-conductor power or control cable.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
1. Shop Drawings for Review:
 - a. Manufacturer's technical product sheets on each component to be furnished.
 - b. A list of materials needed for construction giving manufacturer's names and catalog numbers.
 2. Information for the Record:
 - a. Manufacturer's recommended method of installation for the products to be furnished.

1.03 QUALITY ASSURANCE

- A. Comply with ICEA, UL, NFPA and NEMA publications for "Non-shielded Power Cables rated 2000 Volts or Less."

PART 2 PRODUCTS

2.01 MATERIALS

- A. Wires shall be identified by surface markings indicating manufacturer's name, conductor size, conductor material, voltage rating, UL Symbol, type designations, and optional ratings.
- B. Conductors shall be oil and gasoline resistant.
- C. Single conductors for 600-volt power, lighting, and receptacle circuits shall be Type THHN/THWN dual-rated or XHHW-2 and as follows:
1. Conductors shall be stranded, soft-drawn, or annealed copper.
 2. Single conductors for general use for power, lighting, and receptacles shall be a minimum size of No. 12 AWG stranded, unless otherwise noted on the Drawings.
 3. Minimum wire size for controls shall be No. 14 AWG unless noted otherwise.

4. Single conductors, for power distribution, No. 4 AWG and larger, shall be Type XHHW-2.
 5. Single conductors, for power distribution, smaller than No. 4 AWG for use in conduits and ducts shall be Type THHN/THWN dual-rated.
 6. Single conductors, for power distribution where exposed to sunlight, shall be listed and marked as sunlight-resistant as manufactured by Okonite, "Okoguard-Okolon" Type RHH or RHW-2 or USE-2, VH-1, or equal.
- D. All wire and cable insulation and all cable outer coverings shall be listed and approved for the conditions under which the wire or cable is to be used.

2.02 COMPONENTS AND ACCESSORIES

- A. Splicing materials shall be as follows:
1. Plastic tape shall be 3M Scotch Electrical Tape No. 33+ or 88, or equal.
 2. Neoprene tape shall be Okonite Company "Okoprene", or equal.
 3. Insulating putty shall be 3M "Scotchfill Electrical Putty", or equal.
 4. Tapes and other splicing materials shall be used only as recommended by the manufacturer, and only if their condition is such as to meet the manufacturer's standards.
 5. Heat-shrinkable tubing shall be Raychem or equal.
- B. Connectors:
1. Wire connectors for No. 6 AWG and smaller wires shall have sharp internal threading which prevents pulling off, but are removable. Connectors shall be Type Y, Type R, Type G, or Type B, as manufactured by 3M Company or equal.
 2. Indentor butt connectors shall be Burndy "Hylinks", or equal.
 3. Indentor pigtail connectors shall be Thomas & Betts "Sta-Kon" connectors, or equal, applied to the twisted conductors, and covered with a nylon cap of the same manufacturer.
 4. Indentor or compression connectors shall be Thomas & Betts "Sta-Kon" connectors, or equal. The insulation of conductors No. 2 AWG and larger shall be penciled to the diameter of the conductor. Wires connected to screw terminal block points shall have fork tongue lug terminals.
 5. Splices to uncut main runs shall be made with Burndy "Crimpits", or equal, for cables No. 4/0 to No. 10 AWG, and Burndy "Hytaps", or equal, for cables larger than No. 4/0 AWG.
 - a. Heavy duty compression, 600V - 35 kV, sized as required to match conductor in use. Connector metal shall match bus metal. Connector shall be UL listed as manufactured by Thomas & Betts Catalog No. 251-31446-XX, or equal.

- C. Power Blocks:
 - 1. All power blocks whether in terminal boxes, motor control, and other locations, shall be equal to Allen-Bradley Bulletin 1492 UL-listed, 600V AC/DC, 3-pole suitable for copper conductors, and rated for 75 degrees C, minimum.
 - 2. Power blocks shall have sufficient current carrying capacity as required, and shall not be adjacent to control wiring terminal blocks.
- D. Wire Pulling Lubricants - Pulling lubricants shall be American Polywater Corp. Type J, Ideal Yellow 77 Plus, Thomas & Betts Polymer Base, or equal. Follow manufacturer's recommendations for compatibility with wire insulation, cable jacket, and conduit materials.

2.03 IDENTIFICATION

- A. All wires and cables, except at lighting and 120 VAC convenience receptacles, shall be identified by means of tags with wire names. Tags shall be on all connections, splices, and terminations, and shall also be applied where entering and leaving common wireway and at a minimum of 30 foot centers within the wireway. Wire tags shall be as specified in Section 16030.

2.04 FACTORY TESTS

- A. Wire shall be tested in accordance with:
 - 1. UL Standard for type THHN/THWN wire and the optional Gasoline and Oil Resistant II listings.
 - 2. UL Standard for Type XHHW-2.
 - 3. UL and ICEA requirements for Type MC Cable.

PART 3 EXECUTION

3.01 COORDINATION

- A. Inspect raceways for compliance with specifications and Drawings. Do not proceed with installation until defective conditions have been corrected.
- B. Conduit layouts shall provide for cable separation between various systems and between various signals within given systems. The combining of conductors of various systems within one conduit system shall not be permitted.

3.02 INSTALLATION

- A. Wiring, above ground, 120 volts and higher, shall be in conduit, wireways, or cable trays.
- B. Extreme care shall be used to prevent any injury or damage to the wiring. The Contractor shall observe the installation instructions and precautions issued by the manufacturer of the wire and cable.

- C. Cables shall be pulled through conduits in such a manner as not to overstress, stretch, score, cut, twist, or damage the protective covering or insulation of the conductor. If mechanical means are employed for pulling the cables or wires, a dynamometer shall be used.
- D. The ends of low-voltage cables installed in damp or wet locations shall be carefully sealed until permanently connected or spliced. The Contractor shall be responsible for maintaining a dry condition while the cables are being pulled.
- E. Cables emerging from the ground shall be installed in conduit from at least 18-inch below grade up to the termination point.
- F. Spare conductors or cables shall be individually and uniquely numbered. They shall have sufficient length to reach the farthest termination point within the enclosure. They shall be coiled and stored in a neat and workmanlike manner. The coil shall be tagged to indicate the location of the other end of the spare conductors.
- G. All 120 volt "home runs" in excess of 100 feet shall be No. 10 AWG minimum. All 120-volt branch circuits supplying heating, air conditioning, or lighting loads of 1500 watts or more shall be No. 10 AWG minimum.
- H. Conductors in vertical runs shall be adequately supported with approved conductor supports, as outlined in the NEC.
- I. Conductors No. 12 AWG and smaller shall not be in the same conduit with wires No. 6 AWG and larger.
- J. Conductor Combination and Separation:
 - 1. The combining of conductors of various systems within one raceway system shall not be permitted. Raceway layouts shall provide for the cable separation requirements between parallel raceways of various systems, and between various signals within given systems throughout Division 16 as required. Each of the following shall be maintained in a separate raceway system apart from the others.
 - a. Power Distribution, 600 VAC or less.
 - b. PLC Communications Systems (Data Highway, Modbus, etc.).
 - c. Motor Branch Circuits.
 - 2. Where Motor Branch Circuit conductors are less than No. 4 AWG, they may be combined with related Class 3 motor and equipment control conductors.

3.03 SPLICES AND TERMINATIONS

- A. Wire and cable lengths shall be continuous and without splices between the points of connection, except as otherwise specified or indicated on the Drawings.
- B. Splices and terminations where specified or indicated on the Drawings shall be made in strict accordance with the conductor manufacturer's recommendations.

- C. Splices and connections shall have a conductivity and insulation resistance at least equal to that of the cable.
- D. Terminated conductors shall be bundled and identified to match approved Contractor submitted drawings.
- E. Owner and Engineer may inspect any and all joints before they are taped. If they are taped without being inspected, the tape may be ordered removed from any joint or joints, and the Contractor shall correct any defect found. After inspection and correction of any fault found, the Contractor shall properly re-tape the joints with new tape.
- F. Splices:
 - 1. Dry Locations - No. 6 AWG and Smaller, Single Conductor:
 - a. Using either an insulated spring or an indentor butt connector shall be followed by wrapping with two half-lapped layers of approved plastic tape extending a minimum distance of 1 inch from the connector.
 - 2. Dry Locations - No. 4 AWG and Larger, Single Conductor:
 - a. No. 4 AWG conductor and larger shall be spliced using indentor or compression connectors, penciled to the diameter of the connector, and wrapped with two half-lapped layers of approved plastic tape extending a distance from the connector of twice the outside diameter of the larger conductor, or 1 inch, whichever is greater.
 - b. Splices to uncut main runs shall be made with "Crimpits", or equal, for Cable Nos. 4/0 AWG to 10 AWG, and "Hytaps", or equal, for cables larger than No. 4/0 AWG, and wrapped with two half-lapped layers of approved plastic tape.
 - c. Electrical insulating putty shall be used as filler before applying tape, where necessary, to provide a smooth taping surface.
 - 3. Wet Locations:
 - a. Single-conductor, with nonmetallic covering, shall be spliced using either indentor (compression) or insulated butt connectors followed by wrapping with four half-lapped layers of approved plastic tape extending a distance from the connector of twice the outside diameter of the larger conductor or 1 inch, whichever is greater.
 - b. The insulation of Conductors No. 2 AWG and larger shall be penciled to the diameter of the conductor and wrapped with four half-lapped layers of approved plastic tape extending a distance from the connector of twice the outside diameter of the larger conductor or 1 inch, whichever is greater.
 - c. Splices in manholes shall only be permitted where specifically shown on Drawings. Where permitted, in manholes, splices No. 4 AWG and smaller shall be in submersible NEMA 6 terminal boxes within easy reach of ground level.

- d. Electrical insulating putty shall be used as filler before applying tape, where necessary, to provide a smooth taping surface.
- G. Terminations - When connecting conductors at terminals, the following methods shall be used, unless otherwise specified:
 - 1. Indentor or compression terminals shall be applied to the conductor. Terminals shall be held in place at terminal posts or studs with approved locknuts or lock washers.
 - 2. The shields of shielded, multi-conductor control and metering cables, unless otherwise specified by equipment manufacturers, shall be terminated at one end of the cable only.
 - 3. Shield shall be stripped back, intact, applying a compression grounding terminal to the twisted shield, and securely fastening the terminal to the appropriate point on the equipment or device.
 - 4. Shield at the non-terminated end of shielded cables shall be stripped back at least 2 inches beyond the stripped inner conductor's cutoff, and the cable taped with two half-lapped layers of plastic tape where the shield emerges from the outer sheath.
 - 5. Where dead-ending low-voltage wires and cables, the ends shall be insulated and sealed in a manner similar to a standard splice for the particular location and type of wire or cable.
 - 6. All power system terminations shall be phased-out.
- H. Where specified, bus bar tapping shall be in strict accordance with bus bar and connectors' manufacturer's recommendations.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 16121
CONTROL AND SIGNAL CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SCOPE

- A. The Section includes the installation of all wire, cable, and terminators for a complete instrumentation and control package.
- B. Work shall include but not be limited to the following major items:
 - 1. Communications cable between programmable controller components, processors, graphic interface units, and printers.
 - 2. Communications cable between PLC I/O Panels and programmable controller processors.
 - 3. Programmable controller power supplies to processors and I/O chassis.
 - 4. Analog signal wiring between controls, instruments, equipment, field devices, PLC I/O panels, annunciators, or other instrumentation and control components required to complete the Work.
 - 5. Signal wiring, data highway, fiber optic, conduit materials, and installation not provided under Division 16.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:
 - 1. Shop Drawings for Review:
 - a. A list of materials needed for construction giving manufacturer's names and catalog numbers.
 - b. Manufacturer's technical product sheets on each component to be furnished.
 - 2. Information for the Record:
 - a. Manufacturer's qualifications.
 - b. Certified copies of factory test procedures and results.
 - c. Manufacturer's recommended method of installation for the products to be furnished.
 - d. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

1.03 QUALITY ASSURANCE

- A. The installation of equipment and materials shall conform to the recommendations and instructions of the respective manufacturers of equipment and materials.
- B. Fiber-optic cable terminations shall be by certified cable installers. The Contractor shall provide a documented listing of fiber optic cable installation experience.

PART 2 PRODUCTS

2.01 CONTROL CONDUCTORS

- A. Control conductors shall, unless noted otherwise on the Drawings, be supplied as single conductor, No. 14 AWG, 19 stranded, 600 volts, 90-degree C of Type THHN/THWN dual rated.
- B. Wire shall be supplied in three different integral color codes as follows: brown, orange, and red.
- C. Intrinsically safe wiring shall be color coded light blue.
- D. Direct current control conductors shall be color coded dark blue.
- E. Control wire circuits from external sources shall be color-coded yellow.

2.02 RESERVED

2.03 RESERVED

2.04 RESERVED

2.05 RESERVED

2.06 RESERVED

2.07 RESERVED

2.08 RESERVED

2.09 ACCESSORIES

- A. Control Wiring Terminal Blocks:
 - 1. Terminal blocks, whether in terminal boxes, motor control components, instrumentation, plant communication system, and other locations, shall be Allen-Bradley Bulletin 1492-W4, or equal, suitable for DIN Rail mounting.

2. Separate terminal strips shall be provided for analog and discrete signal wires, with the discrete terminal strip located on the left side of the enclosure.
3. Terminals shall be provided for cable shields.
4. Terminal blocks shall be identified in accordance with Section 16030.

2.10 SOURCE QUALITY CONTROL

- A. Wire/cable shall meet IEEE flame test; UL 1581, "Vertical Tray Flame Test"; and ANSI/NFPA Standard 262-1985 (UL-910) "Horizontal Flame and Smoke Test" requirements.

PART 3 EXECUTION

3.01 COORDINATION

- A. Examine raceways and other elements receiving cables for compliance with requirements for installation tolerances and other conditions affecting performance of transmission media.

3.02 INSTALLATION

- A. Control wiring shall be identified and tagged per Section 16030.
- B. Each wire number shall be "solid", preprinted, and not pieced from single or double digit tags.
- C. Wire shall be installed with different color conductor in common conduit, for maximum convenience, with individual conductor identification, which shall be in addition to fiber tag identification as specified herein.
- D. The Contractor shall observe the installation instructions and precautions issued by the manufacturer of the wire/cable.
- E. No mixing of signal conductors and AC voltage conductors shall be permitted within a single conduit.
- F. Conductors carrying high voltage and/or high current shall be installed in separate ducts from low power conductors and PLC component cables.
- G. All cable (power, instrument, communication) in panels shall have the same physical properties as in the field, to minimize the possibilities of transients.

3.03 SPLICES AND TERMINATIONS

- A. Spacing between adjacent terminal strips shall not be less than five inches as measured from the individual terminal block edges.
- B. Wire and cable lengths shall be continuous and without splices between the points of connection, except as otherwise specified or indicated on the Drawings.

- C. Splices and terminations where specified or indicated on the Drawings shall be made in strict accordance with the conductor manufacturer's recommendations.
- D. Splices and connections shall have a conductivity and insulation resistance at least equal to that of the cable.
- E. Terminated conductors shall be bundled and identified to match approved Contractor submitted drawings.

PART 4 SPECIAL PROVISIONS

4.01 SPARE PARTS

- A. Extra terminal block points shall be provided in the quantity of 30% over the quantity used.

END OF SECTION

SECTION 16130
CONDUIT, SURFACE METAL RACEWAYS, AND ACCESSORIES

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes all labor, tools, equipment, and materials necessary to provide conduits and surface metal raceways in accordance with the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:
1. Shop Drawings for Review:
 - a. Wiring schematics with wire termination points identified.
 - b. A list of materials needed for construction, manufacturer's name and catalog numbers.
 - c. Provide conduit layout drawings. All conduit layouts shall show conduits and conduit types with anticipated number, size, and type of power, control or instrumentation conductors/cables, spares and grounds for each and every section of Division 16 requiring separate conduits. Location of floor and wall penetrations and separation between parallel conduits shall be dimensioned.
 2. Information for the Record:
 - a. Manufacturer's qualifications.
 - b. Manufacturer's technical product sheets on each component to be furnished.
 - c. Certified copies of field test procedures and results.
 - d. Manufacturer's recommended method of installation for the products to be furnished.
 - e. Operation and maintenance manuals for equipment provided, including accessories, and maintenance instructions.
 - f. Manufacturer's recommended spare parts list for the system components and accessories.
 - g. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

- h. Conduit layouts shall consist of “as-installed” drawings showing the exact location and routing of all conduits and conduit duct banks that are installed in or under paved areas, concrete slabs, direct buried, or otherwise concealed.
- i. Conduit layouts shall show conduits with number, size, and type of power, control or instrumentation conductors/cables, spares, and grounds for each and every section of Division 16 requiring separate conduits.
- j. Copies of certificates issued by the manufacturer of PVC coated rigid galvanized steel conduit to installers who have successfully completed the manufacturer’s installation training program.

1.03 QUALITY ASSURANCE

- A. Applicable Standards:
 - 1. NEMA.
 - 2. UL.
 - 3. ASTM.
 - 4. NEC.
 - 5. NFPA.

1.04 PRODUCT HANDLING

- A. Care shall be taken when handling materials. Deformed conduit and surface metal raceway materials shall not be installed. Conduits and surface metal raceways damaged during construction shall be replaced.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Metallic Conduit:
 - 1. Metallic conduit, including couplings, nipples, elbows, and bends shall conform to the Standard for Rigid Metallic Conduit of the UL accessories such as locknuts and connectors shall be zinc-coated for use with hot-dipped galvanized conduit.
 - 2. Rigid galvanized steel conduit shall conform to UL-6 Specification, ANSI C80.1, and FS WW-C581E.
- B. PVC Coated Conduit:
 - 1. A plastic coating shall completely encapsulate metallic conduit to provide total protection against corrosion.
 - 2. Conduit shall be galvanized inside and outside, including the threads.

3. Threads shall be coated with urethane over the galvanized threads. A minimum thickness of 40 mil PVC exterior coating shall be permanently fused to the galvanized rigid steel conduit.
 4. A urethane or polyurethane interior coating shall be applied at a nominal 2 mil thickness to the interior of the conduit and over the galvanized threads.
 5. The PVC coating on all form 8 fittings shall form a gasket-like flange covering the top of the fitting around the opening. All fittings shall have a minimum of 40 mils PVC coating even around the edge of covers.
 6. GUA type boxes shall be supplied with WOD type covers. (Feraloy iron instead of aluminum to prevent corrosive reaction between dissimilar metals.)
 7. Conduit fittings (couplings, elbows, etc.) shall be of the same material as the conduits and fittings to which they are attached.
 8. PVC coated conduit shall be UL listed and conform to the same standards as metallic conduit.
 9. PVC coated conduit shall be "OCAL BLUE" as manufactured by OCAL, Inc., "Permacote," "KorKap" or "Plasti-Bond" as manufactured by Robroy Industries, or equal.
 10. Conduit shall be supported by corrosion resistant straps and clamps.
- C. PVC Conduit:
1. Conduit shall be a minimum of Schedule 40 for use only when encased in concrete.
 2. Concrete encasement for conduits shall be Class B as specified in Section 03300.
 3. Schedule 80 shall be used for direct-burial and exposed applications where shown on the Drawings.
 4. PVC conduit systems shall conform to FS WC 1094A, ASTM 512, NEMA TC2 and TC3, and to UL 651 and 514 b. All components shall be "Sunlight resistant" and so marked.
- D. Flexible Steel Conduit:
1. Flexible steel conduit shall be liquid tight Appleton Electric Company "Sealtite" or equal.
 2. Flexible steel conduit fittings shall be Thomas & Betts, Appleton, O-Z/Gedney, or equal.
- E. Bituminous Coating - All rigid galvanized conduit buried underground shall be coated on the outside with a standard petroleum self-priming asphaltic coating. This material shall meet the requirements of FS TT-V-51F, Varnish: Asphalt. It shall be free of lead and chromate hazards. This material shall be lead and alkali resistant. PVC coated rigid galvanized conduit shall be exempt from bituminous coating requirement.

2.02 CONDUIT FITTINGS - GENERAL

- A. Fittings shall be vapor proof, weatherproof, and explosion-proof where so shown on the Drawings and required by NEC.
- B. Fittings for use with EMT and Greenfield shall be compatible with the type of conduit, and shall be of the same manufacturer.

2.03 CONDUIT FITTINGS - METALLIC

- A. Bushings 1-1/4 inches and larger shall be Type B insulated bushings as manufactured by O-Z/Gedney, Thomas & Betts, or equal.
- B. Ground bushings shall be Type BL bushings as manufactured by O-Z/Gedney, Thomas & Betts, or equal.
- C. Conduit fittings for use with metallic conduit shall be standard threaded type of cast ferrous construction to suit the location and purpose. Fittings shall be Crouse-Hinds, Appleton Electric, or equal.
- D. Covers shall be domed sheet metal, except in corrosive areas, where they shall be cast. All covers shall have gaskets.
- E. Exposed fittings, junction boxes, outlet boxes, terminal boxes, etc., shall be cast ferrous material threaded-hub type.

2.04 CONDUIT FITTINGS - PVC COATED

- A. Fittings for use with PVC coated conduit shall be compatible with the type of the PVC coated conduit, and shall be of the same manufacturer.

2.05 CONDUIT FITTINGS - PLASTIC

- A. Fittings for use with plastic conduit shall be compatible with the type of plastic conduit or duct used, and shall be of the same manufacturer.
- B. Adhesives for use with plastic conduit shall be compatible with the type of plastic conduit or duct used and shall be approved by the conduit or duct manufacturer.

PART 3 EXECUTION

3.01 COORDINATION

- A. Coordinate with other Work including metal and concrete deck work to interface installation of conduits, surface metal raceways, and support components.
- B. Level and square conduits and surface metal raceways and install at proper elevations and heights.
- C. Complete the installation of conduits and surface metal raceways before installing any cables or wires.

3.02 OPENINGS AND SLEEVES

- A. Electrical penetrations through an exterior surface shall be sealed and made water-tight with a modular mechanical seal of rubber links as manufactured by Link-Seal, O-Z/Gedney, or equal.
- B. Electrical penetrations to hazardous areas shall be gas-tight and fire-stopped using "Link-Seal" FD or FS seals as manufactured by Thunderline Corporation, or equal.

3.03 EXCAVATION AND BACKFILL

- A. Excavation and backfill required for the installation of underground conduits shall be done in accordance with Section 02200.
- B. Excavation shall not be done until immediately before installation of the specified appurtenances. Cuts shall be done in a workmanlike manner so as to cause the least possible damage.
- C. After backfilling, the excavation shall be kept well filled and maintained in a smooth and well-drained condition until permanent surfaces are restored. All surplus excavated material shall be removed and properly disposed of by Contractor.
- D. Direct-buried conduit shall be backfilled to provide 18 to 24 inches of cover above the top of the highest conduit.
- E. Place a 6-inch-wide, yellow, foil-backed, yellow tape with black lettering reading "ELECTRIC LINE" in the trench, and then complete backfilling operations. Tape shall be Thomas & Betts "E-Z-CODE" NAF-0708, or equal.
- F. Directional drilling shall be allowed only in areas known to be free of existing underground piping and electrical systems.

3.04 MOUNTING AND ATTACHMENT

- A. Contractor shall provide all devices and materials such as expansion bolts, foundation bolts, screws, channels, angles, and other attaching means required to fasten conduits to concrete bases or structures which are existing, or provided under other sections of the Contract.

3.05 CONDUIT AND FITTINGS - GENERAL

- A. Minimum size of conduit shall be 3/4 inch, except that concealed homeruns, underground, and embedded conduits shall not be less than 1 inch.
- B. Conduits shall be located for protection from mechanical damage.
- C. Conduits shall be sized in accordance with the NEC and based on 40% fill based on over two wires, or as shown on Drawings, whichever conduit size is larger.
- D. Conduit stub-ups between underground or slab construction and exposed or concealed wall construction shall be elbows of rigid metallic conduit, and shall have an ample coating of asphaltic paint prior to the placement of concrete unless otherwise noted.

- E. Conduits with free ends not containing conductors shall be threaded and provided with plumber's caps or with couplings and plugs where flush terminations are required.
- F. Flexible connections to all equipment subject to movement or vibration shall be made by means of liquid tight flexible steel conduit equal in length to approximately ten times the diameter of the conduit, but not exceeding 3 feet in length. Explosion-proof flexible couplings shall be used in place of liquid tight flexible steel conduit in Class I, Division 1 and Class II, Division 1 hazardous areas.
- G. Conduit runs subject to motion in excess of the capacities of the fittings specified above shall be provided with other approved means of compensating for the motion. Unless otherwise specified or required, expansion fittings shall be installed at the midpoint of their extension.
- H. Conduits to pumps or other equipment shall, unless otherwise shown on the Drawings, be routed through or below concrete floor slabs.
- I. Conduit runs in poured concrete structures containing expansion joints, approved expansion/deflection joints shall be provided in the conduit. All such expansion joints shall be made watertight. Similar expansion/deflection joints shall be installed wherever conduit crosses structural expansion joints, or is attached to two separate structures, or wherever the conduit run is more than 100 feet in straight length.
- J. Where conduit bushings are constructed wholly of insulating material, a locknut shall be installed both inside and outside the enclosure to which the conduit is attached. Ungrounded conductors of No. 4 AWG or larger shall be protected with insulated throat bushings or hubs where entering or leaving an enclosure in conduit systems.
- K. Pulling distances shall be limited to a maximum of 200 feet so as not to exceed the wire manufacturer's maximum pulling tensions, and suitable pull boxes, etc., shall be provided whether shown on the Drawings or not.
- L. Unused openings in conduit bodies and cast enclosures shall be plugged using Appleton Cat. No. PL6, or equal.
- M. The sum of the conduit bend angles between pull points shall not exceed 270 degrees. Bends in conduit containing medium voltage cables shall have a minimum radius of 36 inches.
- N. In hazardous areas, all fittings, material, and equipment shall be rigid metallic steel or PVC coated rigid metallic steel.
- O. Conduits between hazardous and non-hazardous areas shall include seal-off fittings as required by the NEC and local codes, and the complete installation shall be in accordance with the requirements of such codes.
- P. Seal-off fittings shall be exposed. Sealing compound shall be "Chico" by Crouse-Hinds, or equal. All components and installation in hazardous areas shall conform to the requirements of NEC and all local codes.
- Q. Conduits through which moisture may contact live energized parts shall be sealed or plugged at either or both ends per NEC 300.5(G) and 230.8. Spare or unused conduits

shall also be sealed. Provide drains and breathers so moisture will not accumulate inside conduit.

- R. Conduits subject to motion at right angles to the direction of the run and all conduits in concrete shall be equipped with O-Z/Gedney Type DX, Thomas & Betts, or equal expansion and deflection fittings.
- S. Inside surfaces of all conduits shall be free from any imperfection likely to damage conductors or cables during installation.
- T. During construction, open ends of conduits shall be capped or plugged to keep out debris. These caps or plugs shall remain in place until wires or cables are pulled through the conduit.
- U. Spare conduits and those provided by the contractor for use by others shall have a pull string installed. Coil up at least 24 inches of extra string at each end.

3.06 CONDUIT AND FITTINGS - METALLIC

- A. Exposed conduit shall be rigid metallic conduit unless otherwise noted.
- B. Rigid metallic conduit shall be installed in true alignment and sloped for drainage wherever necessary; underground conduits shall be drained to manholes or pull boxes.
- C. Rigid metallic conduit shall be reamed free from burrs and carefully cleaned before installation.
- D. When required, conduit unions shall be provided. Running threads will not be permitted.
- E. Conduit fastened directly to structures shall be held with one-hole, malleable iron clamps and clampbacks, or otherwise suitably spaced from concrete or masonry surfaces. Concealed rigid metallic conduit shall be installed in as direct a line as possible and shall be rigidly supported by approved methods and materials.
- F. Exposed rigid metallic conduit shall be installed parallel with or at right angles to the lines of the structure, except as otherwise shown, and supported in an approved manner.
- G. Conduits entering a NEMA 3R, 4, 4X, or 12 enclosures shall be installed using watertight fittings of die cast zinc material. Fittings shall be Appleton HUB-XXD, or equal.
- H. Expansion fittings shall be installed in all rigid metallic conduit runs which cross expansion joints, and shall be Type AX as manufactured by O-Z/Gedney or Thomas & Betts.

3.07 CONDUIT AND FITTINGS - PVC COATED RIGID GALVANIZED STEEL

- A. PVC coated rigid galvanized steel (RGS) conduit shall be installed per the manufacturer's instructions. Only tools approved by the manufacturer of the conduit shall be used.
- B. Installers of PVC coated RGS conduit must be certified by the conduit manufacturer to install this type of conduit. Proof of certification shall be furnished to the Engineer.

- C. PVC coated RGS conduit shall be used wherever shown on the Drawings by the notation "PVC/RGS", and in all areas where highly corrosive or highly humid atmospheres can exist, whether shown on the Drawings or not. Such areas include, but are not limited to, chemical feed and storage areas, solids storage facilities, wet wells, near the surfaces of standing or running water such as in aeration tanks, digestion tanks, open channels, and clarifiers or settling tanks.
- D. PVC coated galvanized rigid steel conduit shall only be used with threaded fittings. Threadless fittings shall not be used.
- E. The installation of PVC coated RGS conduit shall conform to the requirements for metallic conduit.
- F. Before assembly, field-cut threads shall be coated with an electrically conductive compound approved by the conduit manufacturer.

3.08 UNDERGROUND CONDUIT

- A. Underground non-concrete encased conduit shall be installed with a detectable warning tape. If the conduit contains a detectable wire, a warning tape shall still be provided. Underground conduit shall be concrete-encased where shown. The top of underground conduit shall be not less than 30 inches below grade unless otherwise specified. Concrete encasement shall provide a minimum cover of 6 inches on top and bottom, and 6 inches on the sides. Horizontal curves, where necessary, shall be drawn on radii of not less than 6 trade diameters of the largest conduit in the duct bank.
- B. PVC conduit and fittings for use in underground duct banks shall be Schedule 40. PVC conduit shall be Schedule 80 where direct-buried.
- C. Conduits for concrete-encased duct banks shall be securely held in place by approved window type spacer supports, and shall be laid with joints staggered.
- D. The ends of each conduit run which is not to contain wiring under this Contract shall be plugged or capped with manufactured plugs or caps.
- E. Conduits shall enter manholes and structures at right angles unless otherwise shown.
- F. Under pavement conduit crossings shall have a 6-inch minimum concrete cover all around and be reinforced as detailed for a length extending 5 feet on each side of the pavement.
- G. Slope for drainage away from building interiors shall be provided. Where inverted elevations are specified, they shall be adhered to, unless the Contractor obtains approval on an alternative layout.
- H. Concrete for all underground conduit encased in concrete shall be mixed with five pounds of red dye for each cubic yard of concrete. Red topped concrete shall not be permitted instead of red dyed concrete.

3.09 RESERVED

3.10 EXPLOSION-PROOF CONDUIT FITTINGS

- A. The cross-sectional area of the conductors permitted in a seal shall not exceed 25% of the cross-sectional area of a rigid metal conduit of the same trade size unless it is specifically listed for a higher percentage of fill.
- B. Motors and other devices subject to vibration and movement located in Class I, Division 1 and Class II, Division 1 areas shall be connected using explosion-proof flexible couplings. Explosion-proof flexible couplings may also be used in place of rigid conduit in difficult bend situations.

3.11 BELOW-GRADE GALVANIZED CONDUIT

- A. All rigid galvanized conduit buried underground shall be coated on the outside with a self-priming, standard petroleum asphaltic coating. This coating shall have a thickness when dry of at least 1 mil.
- B. The asphaltic coating may be dipped, brushed or sprayed on the exterior surface of the conduit.
- C. Before application, surface should be free of grease, oil, dirt, fingerprints, drawing compounds, any other contaminant, and surface passivation treatments to ensure optimum adhesion and coating performance properties.

PART 4 SPECIAL PROVISIONS

4.01 CONDUIT LOCATION SCHEDULE

- A. Exterior above grade – RGS.
- B. Exterior below grade.
 - 1. In duct bank – SCH 40 PVC..
 - 2. Direct bury – SCH 80 PVC.

END OF SECTION

**SECTION 16132
ACCESSORIES**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes all labor, tools, equipment, and materials necessary to provide electrical boxes and fittings in accordance with the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and Section 16010 and shall include:
1. Shop Drawings for Review:
 - a. A list of materials needed for construction, giving quantities, manufacturer's name and catalog numbers.
 - b. Manufacturer's technical product sheets on each component to be furnished.
 2. Information for the Record:
 - a. Manufacturer's qualifications.
 - b. Certified copies of factory test procedures and results.
 - c. Manufacturer's recommended method of installation for the products to be furnished.
 - d. Operation and maintenance manuals for equipment provided, including accessories, and maintenance instructions.
 - e. Manufacturer's recommended spare parts list for the system components and accessories.
 - f. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.

1.03 QUALITY ASSURANCE

- A. Applicable Standards:
1. UL.
 2. NEMA.
 3. FS.
 4. NEC.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Except as otherwise specified in non-corrosive areas, metallic outlet, device, terminal, junction, pullboxes and conduit fittings shall be appropriate to the related conduit specification.
 - 1. Cast ferrous metal boxes shall be used with rigid galvanized conduit. Threaded openings shall have a minimum of 5 threads and neoprene-gasketed, cast covers held in place with stainless steel screws.
 - 2. Boxes whose weight in cast ferrous metal would exceed 75 pounds shall be made of sheet steel with 5-thread bosses and neoprene-gasketed covers held in place with stainless steel screws. Similarly, sheet aluminum boxes shall be provided in the larger sizes.
 - 3. Boxes larger than 6-inch shall be equipped with cap screws and hinged covers.
- B. In areas designated as NEMA 4X, outlet, device, terminal, junction and pullboxes shall be NEMA 4X of stainless steel or FRP. Sheet metal boxes where permitted above, shall be NEMA 4X watertight boxes made of 12-gauge stainless steel.
- C. Terminal and junction boxes used for control, signal, or communication wiring shall be NEMA 4X stainless or FRP, except where located in a dry area or electric room, where they shall be NEMA 12. Terminal boxes shall have white-painted backplates, barriered terminal blocks of sufficient quantity for all field taps and for all spare deadends.
- D. In hazardous areas, NEMA 7 pull boxes and junction boxes shall meet all requirements of Class I, Division 1, Group D unless noted otherwise.
 - 1. Enclosures shall have hinged covers and captive cover screws, multiple threaded for fast removal, and an O-ring added to make the enclosure watertight.
 - 2. Enclosures shall be as manufactured by Killark Electric Manufacturing Company, or equal.
- E. Outlets in exterior locations or in exposed conduit shall be "FS" or "FD", and PVC where used with PVC conduit.
- F. Interior junction boxes and gutters shall conform to NEC thickness and dimensional requirements, minimum.

2.02 RESERVED

PART 3 EXECUTION

3.01 COORDINATION

- A. Layout and installation of electrical cabinets, boxes, and fittings shall be coordinated with other installations.

3.02 INSTALLATION

- A. Install electrical boxes and fittings as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA "Standard of Installation", and in accordance with recognized industry practices to fulfill project requirements.
- B. Install items where indicated and where required to suit code requirements and installation conditions.
 - 1. Cap unused knockout hole where blanks have been removed and plug unused conduit hubs so as to maintain the NEMA rating of the box.
 - 2. Install boxes in locations which ensure ready accessibility to enclosed electrical wiring and avoid installing boxes back to back in walls where there would be less than 6 inches (150 mm) separation. Fasten boxes firmly and rigidly to substrates or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.
 - 3. Do not install aluminum products in concrete.
- C. Junction boxes, pullboxes, and enclosures with hinged doors which are surface mounted shall utilize spacers to maintain 1/4-inch clearance from the wall.
- D. Avoid using round boxes where conduit must enter box through side of box, which would result in difficult and secure connections when fastened with locknut or bushing on rounded surfaces.
- E. Provide electrical connections for installed boxes.

3.03 GROUNDING

- A. Upon completion of installation work, properly ground electrical boxes and demonstrate compliance with requirements.

3.04 CLEANING AND FINISH REPAIR

- A. Upon completion of installation, inspect components, remove burrs, dirt, and construction debris, and repair damaged finish including chips, scratches, abrasions, and weld marks.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

**SECTION 16220
DIESEL GENERATOR SYSTEMS**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes furnishing and installing a stationary, engine powered, standby power rated, diesel fueled, generating system(s), complete and in place, ready for service.
- B. System shall include, but not be limited to, the engine-generator set, battery system, exhaust system, fuel system, enclosure, ducting, and all other appurtenances needed to make a complete operating system.
- C. Engine-generator system shall be delivered to the Site completely equipped, tested, and ready for installation.
- D. Engine-generator system(s) shall be comprised of all new materials. The design kW rating is based on the loads and load steps and the model listed in Part 4 of this Section.
- E. Power and control wiring to the generator(s), transfer switch(s), and accessories, except wiring described herein, shall be furnished and installed under other sections of Division 16.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Submit a list of materials giving manufacturer's name, and catalog numbers.
 - b. Submit manufacturer's technical product sheets on each component to be furnished.
 - c. Submit drawings which show dimensional layouts of the engine-generator system(s) and its spatial relationship to associated equipment.
 - d. Submit wiring diagrams for the engine-generator system(s) showing connections to feeders, load, and accessory equipment. Clearly differentiate between portions of the wiring that are manufacturer installed and the portions to be field wired.
 - e. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.
 - 2. Information for the Record:

- a. Manufacturer's recommended method of installation for the products to be furnished.
- b. Certified copies of the factory and field test procedures and results.
- c. Operation and maintenance manuals. 3 printed manuals to be provided to the County.
- d. Manufacturer's qualifications, including a list of similar installations.

1.03 QUALITY ASSURANCE

- A. Engine-generator system(s) and accessories described herein shall be furnished by a single supplier who shall be responsible for the performance of the equipment in its entirety. The responsibility shall not be split among suppliers of individual components.
- B. The supplier of the engine-generator shall maintain a rental fleet of portable engine generators within 100 highway miles of the project location, maintain 24-hour parts and service capability, and provide qualified, factory trained, service personnel that can respond to an emergency call within 4 hours of notification.

1.04 ELECTRICAL AND CONTROL COORDINATION

- A. All electrical, instrumentation, control equipment, and panels furnished under this Contract shall conform to appropriate Sections of Division 16 of these Specifications. Equipment and panels shall be NEMA rated as shown on the Drawings or specified in Part 4.
- B. Certain equipment items shall be connected to the plant control system as shown on the Control (P&ID) Drawings. Those connections and any remote-control connections shall be wired to clearly labeled terminal strips within the equipment control panel.

1.05 GUARANTEE

- A. The manufacturer's standard warranty shall be for a period of five years from the date of substantial completion and shall not be limited by hours of operation. Warranty shall include repair parts, labor, reasonable travel expense necessary for repairs at the job site, and expendables including, but not limited to lubricating oil, filters, antifreeze, and other service items used during the course of repair.
- B. Optional warranties, supplier/manufacturer maintenance packages, and associated cost shall be available for the Owner's consideration.
- C. Engine starting batteries shall have a twelve-month full replacement warranty. The warranty shall be prorated from twelve to sixty months.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Engine:

1. Provide a liquid cooled, four cycle, full compression, ULSD (ultra-low sulfur diesel) fueled engine for each engine-generator system.
 2. Each engine shall have the number of cylinders and displacement needed to develop the brake horsepower and torque necessary to drive the alternator at 1800 revolutions per minute to meet the specified performance requirements listed in Part 4.
 3. Provide a fully enclosed electronic speed sensing isochronous governor, capable of providing accurate speed control. Frequency regulation shall be plus 0.5% of rated frequency during steady state conditions.
 4. Engine shall be provided with an electric starting motor with starter pinion and solenoid to turn the engine at firing speed under the temperature range of 110 degrees F maximum and 0 degrees F minimum. Each starting motor shall be rated to operate on the voltage as determined by the engine manufacturer.
 5. An engine mounted, replaceable element, dry type air cleaner of sufficient capacity and filtration rating to protect working parts of the engine from dust and grit.
- B. Cooling System:
1. Each engine shall be furnished with a radiator, mounted on vibration isolators, and fan with fan guard.
 2. Radiator shall keep the engine within normal operating temperature when running at full load.
 3. Radiator for an engine-generator system installed indoors shall be provided with a duct adapter flange to allow the attachment of an air discharge duct to direct air discharge through the radiator and the wall.
 4. Each engine coolant system shall be filled with the engine manufacturer's recommended antifreeze/antiboil solution. The Contractor shall provide the engine manufacturer's recommended antifreeze/antiboil solution.
 5. Engine shall be furnished with a coolant heating system. The heating element(s) shall be single-phase and rated for operation at 60 Hz and the AC voltage listed in Part 4 of this Section.
 6. Engine coolant heater system shall maintain the manufacturer's specified coolant temperature. A thermostat shall control the temperature of the coolant to the manufacturer's recommended temperature for start-up.
 7. **WARNING:** Do not energize block heater until engine block is filled with coolant and the generator set is run to remove trapped air. Otherwise, block heater failure will result.
- C. Alternator:
1. Alternator shall be 4-pole, engine driven, drip proof, self-aligning, continuous duty, synchronous unit with full amortisseur windings. The insulation shall be NEMA Class H.

2. Alternator shall be rated for the voltage listed in Part 4 of this Section and for 60 Hz operation at rated 1800 rpm.
 3. The alternator neutral wire shall not be connected to ground at the alternator. Each alternator shall be directly connected to the engine through a flexible coupling.
 4. Operating temperature of the rotor and stator shall not exceed 105 degrees C at rated load.
 5. Alternator shall have a brushless, rotating, solid-state, full wave, rectifier or a permanent magnet exciter. Surge suppressors shall be included on the brushless, solid-state exciter to protect the diodes from voltage spikes.
 6. Alternator shall have a voltage regulator to provide no load to full load regulation of plus or minus 0.5% at rated voltage during steady state conditions. Regulator shall be a totally solid state design, and shall include electronic voltage buildup, volts per Hz regulation, three phase sensing, over-excitation protection, loss of sensing protection, temperature compensation, and shall limit voltage overshoot on startup, and be environmentally sealed.
- D. Engine Fuel System:
1. The engine shall have fuel filters with replaceable elements and an engine driven or electric fuel pump.
 2. Fuel shall be injected into each cylinder by individual, adjustment- free injectors.
 3. A radiator mounted fuel cooler shall be provided.
 4. Fuel filter and serviceable fuel system components shall be located to prevent fuel from spilling onto engine-generator set batteries.
- E. Lubrication System:
1. Lubricating oil shall be supplied by a lube oil system.
 2. Full flow, replaceable element, oil filters, with a liquid cooled oil cooler, dip stick oil level indicator, and oil pan drain valve shall also be provided.
 3. The filter system shall be equipped with a bypass valve to prevent stoppage of lubricating oil in the event the filters become clogged
 4. The contractor shall provide the engine manufacturer's recommended lubricant and fill the crankcase to the proper level.
- F. Strip Heater:
1. Engine-generator system(s) located outdoors or in an unheated area shall have a UL listed, 120 VAC, 60 Hz, single-phase strip heater(s) mounted in the alternator housing to prevent condensation, and shall be provided with an automatic control to turn off the heater(s) when the alternator is running.
- G. Batteries/Charger/Tray:
1. Provide sealed storage batteries.

2. Batteries shall be sized to crank and start the engine in the ambient temperatures of 0 degrees F for outdoor installations and 40 degrees F for indoor installations.
 3. Battery system shall have the capacity to start the engine a minimum of three times between charges.
 4. Provide battery cables sized to prevent voltage drop problems during cranking cycle.
 5. Provide a UL listed, fully automatic, solid-state, battery charger with both float and equalize charge rates, automatic AC line voltage compensation, DC voltage regulation, and automatic equalizing timer.
 6. The input voltage to the charger shall be 120 VAC, single phase, 60 Hz.
 7. Charger shall be capable of fully recharging batteries within 24 hours.
 8. Charger shall have the following protective features: fused AC input, fused DC output, automatic surge suppression, and current limit overload protection.
 9. Charger shall have a DC ammeter, DC voltmeter, AC pilot light, and an equalize charge light.
 10. Provide the following alarm contacts for connection to the alternator local annunciator: low DC voltage, high DC voltage, current/charger failure, and AC power failure. Provide high DC voltage shutdown. Charger shall be mounted for easy visual and maintenance access.
 11. Provide a battery tray or rack for each battery set.
 12. Battery tray or rack shall conform to NEC. It shall be treated to be resistant to deterioration by battery electrolyte.
 13. Battery tray or rack shall contain any spillage or boil-over of electrolyte.
- H. Exhaust System:
1. Piping shall be by the manufacturer - insulated and shielded, supported and braced to prevent weight or thermal growth being transferred to the engine.
 2. Exhaust shall have flexible expansion fittings to accommodate thermal growth. Support dampers and springs shall be included where necessary to isolate vibration.
 3. Long runs of exhaust pipe shall be pitched away from the engine and water traps installed at the lowest point. Exhaust stacks shall be extended to avoid nuisance fumes and odors, and outlets cut at 45 degrees to minimize noise.
 4. Exhaust pipes shall have stainless steel screening at the outlet to prevent entry of small animals.

2.02 ENGINE-GENERATOR CONTROL PANEL

- A. Engine-generator control panel shall be mounted on the alternator end of the assembly.

- B. Control panel shall be housed in a rigid metal, NEMA 4X rated enclosure, and shall include a section for cable terminations. Enclosure doors shall be lockable.
- C. Control panel shall be furnished with the necessary fuses, transformers, and other accessories required to perform the following functions:
 - 1. Alternator output power thermal magnetic circuit breaker, as listed in Part 4 of this Section. Breaker shall be sized and rated to carry 100% of the output current of the alternator, be UL listed, and have an adjustable shunt trip unit.
 - 2. Automatic start/stop operation.
 - 3. Adjustable cycle cranking.
 - 4. Output voltage adjustment potentiometer.
 - 5. Digital AC metering with manual phase selection and 0.5% true RMS accuracy.
 - 6. Digital engine monitoring.
 - 7. Shutdown sensors and alarms with horn and reset.
 - 8. Adjustable cool-down timer, and a maintained-action, red mushroom head, emergency stop push-button.
 - 9. Self-diagnostics and fault logging.
 - 10. Contact to operate a spring-action to open, motorized to close, louver on indoor installations. The contact shall be rated at 10 amps, 120 VAC, and open when the engine(s) begins to crank and close when the engine(s) shuts down.
- D. Control panel components shall be environmentally sealed to protect against moisture and dirt. Engraved nameplates (black letters on white background) shall be provided to identify each device or function located on each control panel.
- E. Control panel located in unheated locations shall be provided with a strip heater, with thermostat, to eliminate condensation. Voltage shall be as specified in Part 4 of this Section.
- F. Provide visual display of the following variables, either with gauges or digital displays:
 - 1. Engine oil pressure.
 - 2. Engine oil temperature.
 - 3. Coolant temperature.
 - 4. Engine RPM.
 - 5. System DC Volts.
 - 6. Engine accumulated running hours.
 - 7. Alternator AC volts, selectable line-to-line and line-to-neutral.
 - 8. Alternator AC amps, selectable each phase.
 - 9. Alternator frequency.
 - 10. Alternator output kW.

11. Alternator output kWHR.
 12. Alternator output kVA.
 13. Alternator output kVAR.
 14. Percentage of rated power.
 15. Alternator power factor.
- G. Control panel shall include a local annunciator with the following alarms:
1. Low engine oil pressure alarm light.
 2. Low engine oil pressure shutdown light.
 3. High coolant temperature alarm light.
 4. High coolant temperature shutdown light.
 5. Low coolant temperature alarm light.
 6. Overcrank lockout light.
 7. Audible alarm and reset button.
 8. System not in Auto indicator light.
 9. Overspeed shutdown alarm light.
 10. Diagnostic shutdown light.
 11. Low coolant level.
 12. Low battery/DC voltage.
 13. Battery charger ac failure.
 14. High battery voltage.
 15. Emergency stop depressed.
 16. Spare.

Note: All alarm lights to be flashing LED type.

2.03 PERFORMANCE REQUIREMENTS

- A. The engine-generator system shall be capable of producing the amount of electrical power listed in Part 4 of this Section at 0.8 power factor for continuous operation.
- B. The engine-generator system shall be ready to have loads applied within 10 seconds after start-up.
- C. The engine-generator system shall have a minimum motor starting capability of the kilovolt amperes (kVA) listed in Part 4 of this Section. The engine-generator system shall meet NFPA 110 single step load pickup. These ratings shall be met after all applicable demand factors for operation at 1,000 feet above sea level and in an ambient temperature of 110 degrees F maximum and 0 degrees F minimum.

2.04 ACCESSORIES

- A. Silencer:
1. Engine-generator system shall provide a critical grade silencer to reduce noise attenuation.
 2. Silencer installed on an engine-generator system indoors shall have a side inlet and end outlet.
- B. Enclosure:
1. Provide a weather-protected, sound attenuated, enclosure for each engine-generator system located outdoors. Maximum sound level shall be 70 decibels at 50 feet, while the engine-generator system is operating at full load.
 2. Enclosure shall be constructed from galvanized steel and shall be designed and constructed so that the engine-generator system and accessories are totally enclosed.
 3. Enclosure shall be zinc phosphate treated prior to painting, then painted with the manufacturer's standard color polyester powder baked paint.
 4. Enclosure door(s) shall be hinged and key lockable with stainless locks and hinges. Other enclosure hardware shall be stainless steel. A control panel viewing window with safety glass and lockable access door to the control panel and circuit breaker shall be provided. Each enclosure shall be provided with an externally mounted, shielded emergency stop button; drain lines to the outside for lube oil, coolant, and crankcase fumes disposal.
- C. Engine Generator Fuel Storage System - Subbase Fuel Tanks:
1. Furnish and install engine generator fuel storage system, sized as shown on the schedule, in accordance with Federal, State and Local authorities.
 2. The exterior fuel storage tank shall be a UL 142 approved, double wall design for above ground use, consisting of a Fuel Holding Cell (Inner Tank) and The Secondary Containment Tank (outer tank).
 3. Tanks shall provide at least one 24-hour day fuel supply for engine-generators operating at full capacity.
 4. The subbase fuel storage tank shall include but not be limited to: lockable fill cap, overfill protection, spill containment, normal vent with riser and cap, emergency pressure relief vent, outer tank emergency pressure relief vent, mechanical fuel gauge, low fuel level alarm, 2-inch opening for fuel gauge/switch assembly, and leak alarm.
 5. The Fuel Holding Cell (inner tank) and Secondary Containment Tank (outer tank) shall be mated together into one assembly.
 6. Subbase fuel tanks shall be suitable for applications requiring sound enclosures.
 7. The sub-base fuel tank and related equipment including vents and fill pipes shall not block access to serviceable items on the engine or generator.

8. Access ports, such as vents, fill opening and instrumentation, on the sub-base fuel tank shall not be located inside the area defined by the plan view of the radiator shroud.
 9. Means shall be provided to prevent adding additional fuel to the tank if oil is detected in the interstitial space between the inner and outer tanks.
 10. The exterior fuel storage tank shall be a UL 142 approved, double wall design for above ground use, consisting of a Fuel Holding Cell (Inner Tank) and The Secondary Containment Tank (outer tank). Tanks shall have the capacity indicated in Part 4 of this Section.
 - a. Exterior fuel storage tank shall include but not be limited to: fill adapter, 3-inch water tight lockable fill cap, drop tube, vent, emergency vent test well cap and adapter, clock level gauge, foot valve, interstitial leak detection sensor, and other accessories including bushings, couplings, supply tube, vent extension, pipe plugs, 2-inch opening for fuel gauge/switch assembly, and pipe caps.
 - b. The use of nonconductive materials in the fill pipe assembly is not acceptable. Serious accidents have occurred when nonconductive materials, such as plastic or rubber hose, have been used in the fill pipe assembly.
 - c. The assembly (outside fuel storage tank) must carry a 5-year warranty.
 - d. The Fuel Holding Cell (inner tank) and Secondary Containment Tank (outer tanks) shall be mated together into one assembly.
 - e. The inner and outer tank of double wall tank shall be provided with the proper fittings to accommodate the requirements for both normal (atmospheric) and emergency venting.
 - f. Fuel Holding Cell (Inner Tank) shall be carbon steel.
 - g. The Secondary Containment Tank (outer Tank) shall exceed 110% of the Fuel Holding Cell capacity.
 - h. Means shall be provided to prevent filling the tank if a leak is detected in the interstitial space between the inner and outer tanks.
 - i. Provide a standard rupture alarm sensor that will indicate any fluid found in the outer tank.
- D. Tank Filling System:
1. Provide a factory packaged system for control of filling operations of above ground tanks that are filled from pumper trucks. This system shall provide a means of connection of a 3-inch fill hose and capture spills that may occur at the fill point of up to 5 gallons.
 2. The system shall have a continuous display of tank level graduated from 0% to 100% of capacity with an accuracy of plus or minus 2%.

3. When the tank reaches the 90% level, an audible and visual alarm shall activate to alert the tank truck operator.
 4. When the tank reaches the 95% level, an audible and visual alarm shall activate and the fuel port valve shall close and not be capable of reopening.
 5. There shall be a TANK LEAK ALARM for remote indication of a tank leak.
 6. The fuel port shall be enclosed in a freestanding, pad mounted, weatherproof, NEMA 3R enclosure. All access doors shall be lockable.
 7. The fuel port shall have a quick-disconnect 3-inch hose coupling with dust plug.
 8. Other features shall include a ground stud for connection of the delivery truck's ground cable.
 9. The fuel port shall include a level transmitter and level switch assembly to be mounted in a 2-inch diameter tank fitting.
- E. Emergency Stop Pushbutton:
1. All generators shall have a remote manual stop station similar to a "Break-Glass" station located outside the room housing the prime mover. If the generator is located outdoors the stop station shall be located elsewhere on the premises.
 2. The pushbutton station shall have a red pushbutton labeled "Stop" covered by a thin glass disc. A small hammer shall be attached to the enclosure with a chain. The switch shall have one Normally Closed set of contacts for each generator. The enclosure shall be rated for the area in which it is installed.
 3. A permanent nameplate shall be provided to indicate that the purpose of the switch is to stop the generator in an emergency. The nameplate shall be mounted on or in close proximity to the pushbutton station.
 4. The contractor shall provide at least five spare glass discs to the owner.
 5. The pushbutton station shall be Allen-Bradley Catalog Number 800T-NX114 with Glass Disc Kit 800T-N28, or equal.

2.05 FABRICATION

- A. Base:
1. Engine-generator system shall be mounted on a structural steel base capable of maintaining proper alignment between components during shipment, installation, and operation.
 2. The engine-generator system shall be free from torsional stress when running at 10% of rated speed.
 3. Provide spring type vibration isolators with rubber backing between the structural steel base and its foundation.

2.06 FACTORY TESTS AND FIELD TESTS

- A. Prior to shipment, the unit shall be factory performance tested under load with all accessories. The tests shall be performed in accordance with the manufacturer's standards.
- B. Full block load test shall demonstrate no more than a 15% RMS voltage dip and 15% frequency deviation measured during the fourth complete cycle following application of the load.
- C. Both voltage and frequency shall return to within 3% of rated voltage and frequency in less than 5 seconds following the application of the block load. The following block load tests shall be performed:
 1. Stepped load test at 1/2, 3/4, and full load for 5 minutes each step.
 2. Three-quarter block load.
 3. Full single step block load.
- D. The Contractor shall furnish a qualified representative of the manufacturer to perform inspection, start-up, testing, and training services. The manufacturer's representative shall be experienced in the installation, start-up, operation, maintenance of the equipment, and fuel shelf life.
- E. The representative shall check the installation and supervise final adjustments and initial start-up of the equipment. The representative shall certify that each installation is correct and that the equipment is operating satisfactorily. This service shall be for a minimum period of one trip and three days.
- F. The complete installation including each automatic transfer switch, if applicable, shall be field-tested for compliance with the plans and specifications following completion of all site work. Testing shall be conducted by representatives of the transfer switch supplier, if applicable, and the engine- generator supplier, and the switchgear supplier, if applicable. The Contractor shall supply the load bank and other equipment required for each test. The Owner and inspector shall be notified in advance and shall have the option to witness the tests. The tests shall be repeated until each system performs as specified. The tests to be conducted on site shall be as follows:
 1. Perform a cold start test on each engine-generator using the generator's actual load as a test load. A power failure shall be simulated by opening the normal power source disconnect and the following information shall be recorded for each engine-generator set.
 - a. Time delay on start.
 - b. Cranking on time.
 - c. Time required coming up to speed.
 - d. Voltage and frequency overshoot.
 - e. Time to achieve steady state.
 - f. Voltage, frequency, and amps at standby state.

- g. Oil pressure, water temperature, and battery charge rate at 5 minute intervals for the first 15 minutes and at 15 minute intervals thereafter for 2 hours.
 - h. Time delay on retransfer after return of normal power.
 - i. Cool down time delay.
 - 2. Immediately after cooling time from cold start test, perform a one-step, four-hour, full load test using a load bank. Record the same data as in the cold start test except for time delays on transfer and retransfer.
 - 3. Disable each engine-generator from starting by a method approved by the manufacturer and test the crank cycle by switching the engine-generator controls to "Run".
 - 4. Test each engine-generator safety shutdown mechanism.
- G. After the field-testing, has been successfully completed, the manufacturer's representative shall train the Owner's personnel for one eight-hour day in the proper operation and maintenance of the equipment. The Owner may make a video record of the training.

PART 3 EXECUTION

3.01 COORDINATION

- A. Examine area for compliance to written installation requirements.

3.02 INSTALLATION

- A. Engine-Generator:
 - 1. Provide a concrete housekeeping pad in accordance with Section 03300.
 - 2. Each engine-generator set shall be installed with galvanized steel anchor bolts as recommended by the manufacturer. Bolts shall be embedded in the concrete pad. Expansion-type anchors are not acceptable.
 - 3. Each engine-generator shall be installed with vibration isolators provided with the set.
 - 4. Provide equipment grounding connection(s) for each engine-generator unit as indicated by the manufacturer. Tighten each connection to comply with the tightening torques specified in UL standards to assure permanent and effective grounding.
 - 5. All connections to the engine, generator and mounting base such as conduits, fuel lines, exhaust piping, etc., must have flexible sections to prevent breakage and isolate vibration to the generator set.
- B. Exhaust System:
 - 1. The exhaust silencer and all exhaust piping furnished with the engine-generator shall be as recommended by the manufacturer.

2. All surfaces to be insulated shall be clean and dry.
- C. Fuel Tank System:
1. Exterior fuel tanks located in areas subject to flooding shall be anchored to prevent flotation.
 2. Fire department vehicle access shall be provided within 150 feet of the tank.
 3. Tanks shall be grounded in two equally-spaced locations to prevent the build-up of static electricity. Use 3/4-inch diameter by 10 feet long copper-clad ground rods and No. 2 AWG down conductors.
 4. There shall be no more than 3 tanks per site. Tanks on the same site shall be at least 3 feet apart. However, there can be multiple sites on the same property provided the sites are separated by at least 100 feet.
 5. Tanks shall be at least 40 feet from the property line or major building.
 6. Tanks shall be at least 25 feet from property lines and sources of ignition.
 7. Tanks shall be at least 50 feet from storm drains, surface water, designated wetlands and single family drinking water wells.
 8. Tanks shall be at least 75 feet from non-community public water wells.
 9. Tanks shall be at least 200 feet from community public water wells.
 10. Tanks shall be at least 100 feet from places of assembly with capacity of 50 or more people.
 11. Tanks shall be at least 300 feet from schools, churches, hospitals and nursing homes.
 12. Tanks shall not be located directly under overhead electric power or telecommunication wires and cables.

PART 4 SPECIAL PROVISIONS

4.01 ENGINE GENERATOR LOADING SCHEDULE

Step Number	Load Type (1)	Load Rating (2)	Full Load Amps	Motor Controller (3)	Equipment ID Tag
1	Trf	kVA	6.25		MPZ
2	Mtr	hp	24	FV	Pump 1
3	Mtr	hp	24	FV	Pump 2

- (1) Load Type: Mtr = Motor
Trf = Transformer
Res = Resistance Heating
HVAC = Heating, Ventilating, Air Conditioning
Misc = Miscellaneous
- (2) Load Rating: hp = Horsepower
kW = kilowatts

kVA = kilovolt-amperes

- (3) Motor Controller:
- FV = Full-Voltage, across-the-line
 - RVSS = Reduced-Voltage Solid-state
 - VFD = Variable Frequency Drive
 - 2S = Two-Step, single or double winding
 - RVA = Reduced Voltage Auto-transformer
 - 2Spd = Two Speed

4.02 POWER GENERATING SYSTEM SCHEDULE

A. The following schedule is intended to aid the Contractor in identifying generator location and size. It is intended to supplement the Drawings and Specifications and is not guaranteed to be complete. All generators shown on the drawings shall be furnished and installed by the Contractor whether or not listed in the schedule.

Location	ID Tag	Size kW/kVA	Model Number	Alternator Voltage(s)	Engine Coolant Heater Voltage	Control Panel Strip Heater Voltage	Minimum Starting Capability (kVA)	Circuit Breaker Rating (amps)	Tank Capacity	Day Tank Capacity
LS 39		51/63	50REOZK	480/277	120	120	19.95	100	133	

4.03 FUEL

- A. The Contractor shall provide a full tank of fuel for testing the system. Fuel shall be ULSD (Ultra Low Sulfur Diesel) fuel (not subject to highway fuel taxes). The fuel tank shall be topped off at the Contractor’s expense after testing is complete and before the system is turned over to the Owner. The State of Ohio does not accept factory tests and will require a site inspection and test.
- B. Prior to filling the tank, the Contractor shall furnish a tank permit application and arrange for on-site pressure testing of the fuel tank. The test shall be witnessed by a fire safety inspector.

4.04 SPARE PARTS

- A. Provide one spare 120 VAC, single phase, 60 Hz, 1/2 hp over full fuel return pump for each engine generator system.
- B. Provide one spare positive displacement transfer pump as specified above.

END OF SECTION

SECTION 16440
AUTOMATIC TRANSFER SWITCHES

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes all labor, tools, equipment, and materials to install a complete and functional automatic electrical load transfer system.
- B. System shall connect partial or the entire facility electrical load to either the normal electrical utility source or to a standby electrical power source, which may be an alternate feed from the electric utility company or an engine-generator set.
- C. Transfer switch shall be delivered to the Site completely equipped, tested, and ready for installation.
- D. Transfer switch and components shall be comprised of all new materials. The design rating shall be based on the loads listed in Part 4 of this Section.
- E. Power and control wiring to the generator(s), transfer switch(es), and accessories, except wiring described herein, shall be furnished and installed under other sections of Division 16.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. Submit a list of materials giving quantities, manufacturer's name, and catalog numbers.
 - b. Submit manufacturer's technical product sheets on each component to be furnished.
 - c. Submit drawings which show dimensional layouts of the transfer switch from various elevations and its spatial relationship to associated power and control conduits and other associated equipment.
 - d. Submit wiring diagrams showing connections to feeders, load, and accessory equipment. Clearly differentiate between portions of the wiring that are manufacturer installed and the portions to be field wired.
 - 2. Information for the Record:
 - a. Manufacturer's recommended method of installation for the products to be furnished.
 - b. Certified copies of factory and field test procedures and results.

- c. Operation and maintenance manuals.
- d. Provide warranty for review; executed copies shall be submitted when completed with copies included in the operation and maintenance manuals.
- e. Manufacturer's qualifications, including a list of similar installations.

1.03 QUALITY ASSURANCE

- A. All Work and materials shall be in compliance with applicable requirements of governing agencies having jurisdiction and the NEC.
- B. Automatic transfer switch(es) and all components shall be designed, manufactured, and tested in accordance with the latest applicable standards of UL, NEMA, and NFPA as follows:
 - 1. UL 50 - Cabinets and Boxes.
 - 2. UL 489 - Molded Case Circuit Breakers, Molded Case Switches.
 - 3. UL 508 - Industrial Control Systems.
 - 4. UL 1008 - Transfer Switches.
 - 5. NEMA ICS - Industrial Control and Systems.
 - 6. NFPA 101 - Life Safety Code.
 - 7. NFPA 110 - Emergency and Standby Power Systems.
- C. Transfer switch(es) and accessories described herein shall be furnished by a single supplier who shall be responsible for the performance of the equipment in its entirety. The responsibility shall not be split among suppliers of individual components.

1.04 ELECTRICAL AND CONTROL COORDINATION

- A. Size of automatic transfer switch shall be coordinated with the normal feed source, standby feed source and the voltage and current of the load being transferred.

1.05 GUARANTEE

- A. The manufacturer's standard warranty shall be for a minimum period of one year and shall include repair parts, labor, and reasonable travel expense necessary for repairs at the job site.
- B. Optional warranties and associated cost shall be available for the Owner's consideration.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Automatic transfer switches shall be installed within a NEMA 4X rated enclosure, unless otherwise noted in Part 4. All transfer switches 1000 amps or larger shall be in a free-standing enclosure.
- B. Switches rated 1000 amps and less shall include quick-break, quick-make contact mechanism for manual transfer under load.
- C. Switch shall be sized and rated for continuous duty operation at the current and voltage listed in Part 4 of this Section.
- D. Main contacts shall be rated for 600 VAC minimum.
- E. Transfer switch shall be designed to carry 100% of rated current continuously in the enclosure and have 4 poles for 3 phases and a neutral, unless otherwise noted.
- F. Transfer switch shall be double-throw, with a center neutral (OFF) position, electronically and mechanically interlocked, and mechanically held in both normal and standby positions.
- G. Each transfer switch shall be equipped with quick-break, quick-make, over-center contact, operating mechanisms suitable for safe manual operation under load with door(s) closed.
- H. One set of Form "C" contacts rated at 10 amps, 250 VAC shall be provided for remote monitoring of each of the following parameters:
 - 1. Switch in Normal, Standby, and Neutral positions.
 - 2. Remote monitoring of each transfer switch fault condition.
 - 3. Failure to transfer.
 - 4. Failure to re-transfer.
 - 5. Microprocessor fault.
 - 6. Loss of utility power.
- I. Switches located outdoors or in non-climate controlled environments shall contain thermostatically controlled space heaters.
- J. Automatic transfer switch shall be similar to ASCO Series 7000, Russ Electric RMTD, Lake Shore Electric, or equal.

2.02 PERFORMANCE REQUIREMENTS

- A. The automatic transfer switch shall comply with Standard UL-1008 with 3-cycle short-circuit closing and withstand as follows:
RMS symmetrical amps at 480 VAC:

Switch Rating Amps	Closing and Withstand
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100 - 400	35,000
600 - 800	65,000
1,000 - 1,200	85,000
1,000 - 4,000	100,000

- B. When coordinated with current limiting fuses, each automatic transfer switch shall have closing and withstand ratings of 200,000 amps, RMS symmetrical.
- C. Operation - Engine-Generator System:
1. Sequence for operation of the transfer switch from the normal source to the standby source shall be as follows:
 - a. The standby engine-generator shall start after a time delay of at least 1 minute but not to exceed 5 minutes to allow for the normal source momentary voltage or frequency transients.
 - b. Conditions requiring operation of the engine-generator:
 - 1) Voltage of any phase drops below 80% or rises to 120% of nominal.
 - 2) Frequency drops below 80% or increases to 120% of 60 Hz.
 - 3) A voltage differential between any two phases of 20% or greater is detected.
 - c. The time delay shall be keyboard programmable.
 2. The transfer switch shall transfer load to the standby power source when that source has reached and maintained specified voltage and frequency on all phases for 1 minute.
 3. Sequence for operation of the transfer switch from the standby source to the normal source shall be as follows:
 - a. The automatic transfer switch shall retransfer the load to the normal source, after a 5 minute delay, when all of the following conditions are met:
 - 1) The normal source phase voltages have been restored to a preset value of at least 90% to no more than 110% of nominal.
 - 2) Frequency of the normal source has been restored to no less than 95% and no more than 105% of 60 Hz nominal.
 - 3) The voltage differential between all phases of the normal source is below 20%.
 - b. The time delay shall be keypad programmable.
 4. After retransfer of the load to the normal power source, the engine-generator set shall operate at no load for 15 minutes to allow the set to cool down, and to prevent restarting the engine-generator if the restoration of normal power is temporary.

- a. The preset time period shall be keypad programmable.

2.03 FABRICATION

- A. Main switch contacts shall be made of high-pressure silver alloy. Contact assembly shall have arc chutes for positive arc extinguishing. Arc chutes shall have insulating covers to prevent inter-phase flashover.
- B. Normal power source connection lugs shall be at top. Standby power source lugs shall be at bottom. Load connection lugs shall be at bottom.

2.04 COMPONENTS AND ACCESSORIES

- A. Control system shall be microprocessor based, solid-state, and shall be field programmable for transfer, re-transfer, and "pause-in-neutral position" time delays.
 1. Override momentary normal source power failure to delay engine starting.
 2. Transfer of load to standby power source.
 3. Retransfer of load to normal power source.
 4. Contact transition time on transfer to either power source.
 5. Allow engine-generator set to run unloaded after retransfer to the normal power source.
- B. Control system shall be field programmable for automatic or manual exercising of the switch and the engine-generator set, with or without load.
 1. Any operator initiated functions including, but not limited to selecting load or no-load exercising, shall be provided on the enclosure door and shall not require the enclosure to be opened to access this feature thus minimizing exposure to arc flash conditions.
- C. A contact closure shall be provided to start and stop the engine-generator set.
- D. Non-volatile memory capable of storing historical data including date and time of transfer and re-transfer for a minimum of 16 operating cycles shall be provided.
- E. Control system shall have three-phase under and over voltage, under and over frequency, and phase voltage differential sensing of both the normal and standby power sources.
- F. Control system shall provide each operational function of the automatic transfer switch. Controller shall have two asynchronous serial communications ports, a real-time clock, and a battery control power backup.
- G. Microprocessor shall have on-board self-diagnostics to perform periodic tests of the memory, I/O, and communications circuits, and have watchdog/power fail circuit.
- H. Controller shall have a back-lighted Liquid Crystal Display (LCD) with a keypad for access to view operational parameters and to make programming changes. The display shall show a minimum of four (4) lines of 20 characters, and the keypad shall have at least 6 tactile buttons.

- I. Transfer switch shall be equipped with electronic controls designed for surge voltage isolation, voltage sensors on all phases of power sources, linear operator, permanently attached manual handles, positive mechanical and electrical interlocking, and mechanically held contacts.
- J. Transfer switches located outdoors shall have a thermostatically controlled, 480-volt electric heater to prevent internal condensation.

2.05 SOURCE QUALITY CONTROL

- A. Automatic transfer switch shall be subjected to the following factory tests:
 - 1. Units shall be tested to ensure proper operation of the individual components and correct overall sequence of operation and to ensure that the operating transfer time, voltage, frequency, and time delay settings are in compliance with the specification requirements.
 - 2. Switch shall be subjected to a dielectric strength test per NEMA Standard ICS 1.
 - 3. Manufacturer shall provide Owner with factory test reports.
 - 4. Manufacturer shall certify compliance with all specifications including compliance with codes, standards, and withstand current ratings.

PART 3 EXECUTION

3.01 COORDINATION

- A. Coordinate with other electrical work, including normal feeds, standby feeds and locations, as necessary to interface installation of transfer switch with other Work.

3.02 INSTALLATION

- A. Automatic transfer switch and associated control devices shall be installed in accordance with the manufacturer's written instructions.
- B. Provide and install housekeeping pads for all floor mounted transfer switches.
- C. Power wiring shall be anchored to withstand short circuit current conditions.
- D. Provide equipment grounding connection(s) as indicated by the manufacturer.
- E. Tighten electrical connectors and terminals in accordance with manufacturer's published torque tightening values. Where such values are not published, comply with tightening values specified in UL Standards.

3.03 INSPECTION, STARTUP, AND TRAINING

- A. The Contractor shall furnish a qualified representative of the manufacturer to perform inspection, testing, and training services. The manufacturer's representative shall be experienced in the installation, operation, and maintenance of the equipment.

- B. The representative shall check the installation and supervise final adjustments of the equipment. The representative shall certify that each installation is correct and that the equipment has been tested and is operating satisfactorily.
- C. If the automatic transfer switch is used with an engine-generator system, testing shall be conducted by representatives of the engine-generator supplier and the automatic transfer switch.
- D. The Owner and Engineer shall be notified in advance and shall have the option to witness the tests.
- E. After the field testing, has been completed, the manufacturer’s representative shall train the Owner’s personnel for one eight-hour day in the proper operation and maintenance of the equipment. The Owner may make a video record of the training.

PART 4 SPECIAL PROVISIONS

4.01 AUTOMATIC TRANSFER SWITCH SCHEDULE

- A. The following schedule is intended to aid the Contractor in identifying automatic transfer switch location and size. It is intended to supplement the Drawings and Specifications and is not guaranteed to be complete. All automatic transfer switches shown on the Drawings shall be furnished and installed by the Contractor whether or not listed in the schedule.

Location	Switch ID Tag	Phase	Voltage L-L	Continuous Amps	Number of Poles	Switch Rating (1)	Enclosure Heater Control Voltage	Short-Circuit Closing and Withstand Amps RMS Symmetrical	NEMA Type Enclosure
LS - 39		3	480V	100A	3		120V	35KA	4X

(1) Switch Rating: SE = Entrance

END OF SECTION

**SECTION 16453
MINI POWER ZONES**

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes furnishing and installing single phase and three phase, general purpose, individually mounted, mini-power centers of the two-part construction type, self-cooled, complete and in place, ready for service.

1.02 SUBMITTALS

- A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:
 - 1. Shop Drawings for Review:
 - a. General arrangement drawings.
 - b. Wiring schematics and termination identifications.
 - c. Manufacturer's catalog cut-sheets on each component to be furnished.
 - 2. Information for the Record:
 - a. Manufacturer's qualifications.
 - b. Manufacturer's storage, handling, and maintenance requirements.
 - c. Installation information.
 - d. Certified factory production reports.
 - e. Equipment warranty.
 - f. Operation and maintenance manuals.
 - g. Field test reports.

1.03 QUALITY ASSURANCE

- A. Transformers shall be designed, constructed, rated, and tested in accordance with UL, NEMA, ANSI, IEEE, NFPA, and OSHA standards.
- B. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five years.
- C. Manufacturers shall be registered firms in accordance with ISO 9001:2000; which includes the design and manufacture of low voltage dry-type power, distribution, and specialty transformers.

- D. Transformer and accessories described herein shall be furnished by a supplier who shall be responsible for the performance of the equipment in its entirety. The supplier shall maintain a parts and service capability, and provide qualified, factory trained, service personnel that can respond to an emergency call within 4 hours of notification.

1.04 PRODUCT HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. A copy of these instructions shall be included with the equipment at the time of shipping.

1.05 GUARANTEE

- A. Transformers shall be warranted against defects in materials, workmanship, and performance for five years from date of substantial completion.

PART 2 PRODUCTS

2.01 EQUIPMENT

- A. Mini power zones shall include a main primary breaker and a secondary panelboard with main breaker. Primary and secondary circuit breakers shall be in accordance with the requirements of Division 16.
- B. Transformers shall be totally enclosed non-ventilated with continuously wound coils and shall be completely encapsulated in a polyester resin compound to provide a shock-resistant, moisture-proof, seal. Insulation temperature class shall be based on 180 degrees C system minimum.
- C. Transformer cores shall be constructed with low hysteresis and eddy current losses. Magnetic flux densities shall be below the saturation point to prevent core overheating by harmonic voltage distortion and load current offset.
- D. Cores for transformers shall be clamped utilizing insulated bolts through the core laminations to provide proper pressure throughout the length of the core.
- E. The core of the transformer shall be visibly grounded to the enclosure by means of a flexible grounding conductor sized in accordance with applicable UL and NEC standards.
- F. Transformer enclosure shall be equipped with a wiring compartment suitable for conduit entry and large enough to allow convenient wiring.
- G. Transformers located outdoors shall have lifting eyes and a NEMA rated enclosure as identified on the Drawings or listed in Part 4.
- H. Transformers in corrosive areas indoors or outdoors shall have stainless steel enclosures.
- I. Enclosure shall be equipped with padlockable hinged door.
- J. Main and Feeder breakers shall be bolt on connection type.

- K. Mini Power Zones shall be manufactured by Square D, Cutler-Hammer, Siemens, or equal.

2.02 PERFORMANCE REQUIREMENTS

- A. Transformers shall be supplied with two full capacity, 5% below normal taps in the high voltage windings.
- B. Transformer sound levels shall meet the requirements as established by ANSI and NEMA for self-cooled ratings:
 - 1. Up to 9 kVA - 40 dB.
 - 2. 10 to 30 kVA - 45 dB.
- C. All interconnecting wiring between the primary breaker, transformer, and secondary breakers shall be factory installed.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Contractor shall install all equipment per the manufacturer’s recommendations and the Drawings.
- B. Tighten all lugs to manufacturer’s specifications, and adjust transformer taps to provide secondary voltage to within 2% of nominal system rating.

3.02 FIELD TESTING

- A. Measure primary and secondary winding resistance for shorted or open windings.
- B. Measure primary and secondary voltages for proper tap settings.
- C. Measure impedance from neutral to ground.
- D. Submit written report of test results to Engineer.

PART 4 SPECIAL PROVISIONS

4.01 MINI POWER ZONE SCHEDULE

- A. Mini Power Zone Transformers shall be identified as to their location, size, voltages, enclosures, number of phases, and accessories as per the following schedule.
- B. The following schedule is intended to aid the Contractor in identifying Mini-Power-Zone location and size. It is intended to supplement the Drawings and Specifications and is not guaranteed to be complete. All Mini-Power-Zones shown on the drawings shall be furnished and installed by the Contractor whether or not listed in the schedule.

Location	ID Tag	Size kVA	Primary Voltage	Secondary Voltage	Accessories and Options	Single or Three Phases	Enclosure Type
LS - 39		5	480V	120/240V		Single	3RSS

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- Accessories:
- WS = Weather Shield
 - WMB = Wall Mounting Bracket
 - CMB = Ceiling Mounting Bracket
 - SH = Shunt Trip Primary Breaker
 - IS = Electronic Shielding

- Enclosures:
- 3R = NEMA 3R
 - 3RSS = 3R Stainless Steel

END OF SECTION