

PROJECT MANUAL FOR
THE
**SCIOTO COUNTY REGIONAL WATER DISTRICT NO. 1
MINFORD AREA WATER STORAGE TANK**

December 2023

PREPARED BY:



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220898

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SECTION 00 11 13 - INVITATION TO BID

Scioto County Regional Water District No. 1 (Water 1) will receive sealed proposals for the **Minford Area Water Storage Tank**. Bids will be received until 11:00 A.M., Local Time, on February 13, 2024, at the office of the Owner as listed below.

Bid packages may be delivered by U.S. Mail to Water 1, P.O. Box 310, Lucasville, OH 45648, or may be hand delivered between the hours of 8 A.M. and 4 P.M., Monday through Friday to the office of the Owner, 181 S.R. 728, Lucasville, OH 45648 and shall be marked “**Sealed Bid – Minford Area Water Storage Tank.**”

The project generally consists of the construction of a 506,627 gallon, AWWA D103, glass-lined, bolted steel, ground storage tank and related appurtenances. The opinion of probable cost for this project is \$640,000.

The bid specifications, drawings, plan holders list, addenda, and other bid information (**but not the bid forms**) may be viewed and/or downloaded for free via the internet at <https://bids.ctconsultants.com> . The bidder shall be responsible to check for Addenda and obtain same from the web site.

Bids must be in accordance with drawings and specifications and on forms available from CT Consultants, Inc. at a non-refundable cost of One Hundred Twenty-Five Dollars (\$125.00). Documents may be ordered by registering and paying online at <https://bids.ctconsultants.com> . Please contact planroom@ctconsultants.com or call (440) 530-2395 if you encounter any problems viewing, registering or paying for the documents.

Bidders who submit a Bid must be a Plan Holder of Record at the Issuing Office. Bids from Bidders who are not on the Plan Holders List may be returned as not being responsive.

No Bid will be received unless accompanied by a Bid Guaranty equal to at least 100% of the maximum Bid, or a certified check, cashier's check, or letter of credit equal to at 10% of the maximum Bid, payable to the Owner as a guarantee that after the Bid is accepted, the Bidder will execute and file the Agreement and 100% Performance and Payment Bonds within 10 days of the Notice of Award.

All Contractors and Subcontractors involved with the project will, to the extent practicable, use Ohio products, materials, services, and labor in the implementation of the project. Domestic steel use requirements as specified in Section 153.011 of the Revised Code apply to this project.

Contractor compliance with the Equal Employment Opportunity requirements of Ohio Administrative Code Chapter 123, the Governor's Executive Order of 1972, and Governor's Executive Order 84-9 shall be required.

The Contractor and all Subcontractors shall pay employees on the project the current applicable prevailing wages established by the State of Ohio Department of Commerce Division of Labor & Worker Safety, Wage and Hour Bureau, including all updates, and shall comply with the provisions of Chapter 4115 of the Ohio Revised Code.

Any Bid may be withdrawn prior to the scheduled closing time for receipt of Bids, but no Bidder shall withdraw his Bid within 60 days after the actual opening thereof.

Contract Award shall be made based on the lowest and best bid.

The Water 1 Board of Directors reserves the right to reject any or all bids, to waive any informalities or irregularities in the bids received, and to accept any bid which it deems most favorable. Any bid submittals deemed by the Owner to be incomplete or non-responsive will be rejected.

BY THE ORDER OF:

Jonathan King, General Manager

Published: Portsmouth Daily Times 1/23/2024, 2/30/2024

SECTION 002113 - INSTRUCTIONS TO BIDDERS

A. These Instructions to Bidders establish requirements for Bidding and Award of Contract.

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ARTICLE 1 DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2 COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents in the number and for the deposit sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, within five days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

3.02 Bidder must be prepared to submit evidence of Bidder's qualifications to do business in the state where the Project is located prior to award.

3.03 Bidder shall submit Section 00450 "Bidders Qualifications" and all information requested therein with the Bid.

ARTICLE 4 EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

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

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

B. Copies of reports and drawings referenced in Paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions has been identified and established in Paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 Hazardous Environmental Condition

A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in Paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.06 of the General Conditions has been identified and established in Paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in Paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

4.05 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable Laws and Regulations relative to excavation and utility locates.

4.06 Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On

request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

A. examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;

B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;

D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions;

E. obtain and carefully study (or accept consequences of not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;

F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;

I. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and

J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 PRE-BID CONFERENCE

5.01 A prebid conference will not be held for the Project.

ARTICLE 6 SITE AND OTHER AREAS

6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 BID SECURITY

8.01 A Bid must be accompanied by a Bid Guarantee, payable to Owner, in the form of either:

- 1) A Bid Guaranty in the amount of 100% of the Bid, or
- 2) A Certified Check, or Cashier's Check, or a Letter of Credit, pursuant to Chapter 1305 of the Ohio Revised Code, in the amount of 10% of the Bid.

The Bid Guaranty shall provide for the requirements of Section 153.54 of the Ohio Revised Code, and provide that, upon the recommending of award of the Contract, the Bidder will enter into a Contract in accordance with the Bid, Drawings and Specifications.

8.02 The Bid Guaranty or Bid Bond provided in accordance with Paragraph 8.01 shall be returned to all unsuccessful Bidders immediately after the Contract is executed. The bid security of the

successful Bidder shall be returned upon filing of the requisite performance and payment bonds related to the Work.

8.03 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award. If the successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, the Owner may annul the Notice of Award and the Bid security of the Bidder will be forfeited.

8.04 Bid guaranties shall be returned to all unsuccessful Bidders immediately after the Contract is executed.

ARTICLE 9 CONTRACT TIMES

9.01 The number of days within which, or the dates by which, milestones, if any, are to be achieved and the Work is to be substantially completed and ready for final payment are set forth in the Agreement (or incorporated therein by reference to the attached Bid Form).

ARTICLE 10 LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 SUBSTITUTE AND “OR-EQUAL” ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or “or-equal” items. Whenever it is specified or described in the Bidding Documents that a substitute or “or-equal” item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement.

ARTICLE 12 SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute without an increase in the Bid.

12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so

listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

12.04 In contracts where the Contract Price is on the basis of cost-of-the-work plus a fee, the apparent successful Bidder, prior to the Notice of Award, shall identify in writing to Owner those portions of the work that such Bidder proposes to subcontract and after the Notice of Award may only subcontract other portions of the work with Owner's written consent.

ARTICLE 13 PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

13.02 All blanks on the Bid Form shall be completed by printing in ink or by typewriter and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternative, adjustment unit price item, and unit price item listed therein. Bidder shall not leave blanks or place a zero amount for any of the items.

13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.

13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.

13.06 A Bid by an individual shall show the Bidder's name and official address.

13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown below the signature.

13.08 All names shall be typed or printed in ink below the signatures.

13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

13.10 The address and telephone number for communications regarding the Bid shall be shown.

13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 BASIS OF BID; COMPARISON OF BIDS

14.01 Unit Price

A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.

B. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

14.02 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in Paragraph 11.02 of the General Conditions.

ARTICLE 15 SUBMITTAL OF BID

15.01 Bids will be received for all divisions of the Specifications and all other provisions of the Bidding Documents.

15.02 Bidder is furnished one copy of the Bidding Documents with one separate unbound copy of the Bid Forms and the Bid Bond. The unbound copy of the Bid Forms is to be completed and submitted with the Bid security along with any data required by the Bidding Documents to be attached to and made a condition of the Bid. Additional copies may be obtained from the Issuing Office.

15.03 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to place indicated in the Advertisement or Invitation to Bid. No relief will be provided for a mailed Bid not being received by the prescribed time. No Bid will be considered which is received after the time set for receiving Bids.

ARTICLE 16 MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time set for receiving Bids.

ARTICLE 17 OPENING OF BIDS

17.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves without limitation the right to reject any or all Bids, to waive any and all informalities not involving price, time or changes in the work and to negotiate Contract terms with the Successful Bidder; and the right to accept or reject all incomplete nonconforming, nonresponsive, unbalanced, obscure, or conditional Bids, or Bids which contain additions not called for, erasures, alterations, or irregularities of any kind, or which do not comply with the Instructions to Bidders. Owner reserves the right to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible.

19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions. Operating costs, maintenance considerations, performance guarantees of materials and equipment may also be considered by the Owner.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time. Bidder shall furnish to Owner all such information and data

for this purpose as Owner may request. Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy Owner that such Bidder is properly qualified to carry out the obligations of the Contract Documents and to complete the work contemplated therein.

19.06 Owner shall be satisfied that Bidder (1) maintains a permanent place of business, (2) has adequate plant and equipment to do the work properly and expeditiously, (3) has a suitable financial status to meet obligations incident to the work, (4) has appropriate technical experience, and (5) can submit a satisfactory performance record.

19.07 If the Contract is to be awarded, it will be awarded to the responsive and responsible Bidder with the lowest Bid whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project. Bid from the successful Bidder for the computed total base bid selected by Owner may not necessarily be lower in price than the bid or bids for other alternative combination.

19.08 The award and execution of a Contract shall be made within 60 days after the date on which the bids were opened, unless the time for awarding and executing the Contract is extended by mutual consent of Owner or its representatives and the Bidder whose Bid Owner accepts and with respect to whom Owner subsequently awards and executes a Contract.

ARTICLE 20 CONTRACT SECURITY AND INSURANCE

20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by the required performance and payment bonds and insurances.

ARTICLE 21 SIGNING OF AGREEMENT

21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 22 SALES AND USE TAXES

22.01 Owner is exempt from Ohio state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid.

22.02 The Bid shall include all taxes in effect at the time the Bid is submitted. Bidders what are uncertain as to what items are subject to tax, or who require further explanation or clarification, are requested to contact the State of Ohio Department of Taxation.

22.03 Refer to Paragraph SC-6.10 of the Supplementary Conditions for additional information.

ARTICLE 23 RETAINAGE

23.01 Provisions concerning retainage are set forth in the Agreement.

ARTICLE 24 WAGE RATE DETERMINATION

24.01 An Ohio wage rate determination will be inserted as a part of the Bidding Documents and/or will be on file at the office of the Owner. Bidder shall inspect the wage rate determination and shall incorporate its requirements into its Bid. See the General Requirements for additional requirements.

ARTICLE 25 LAWS, ORDINANCES, AND REGULATIONS

25.01 Bidder must familiarize itself with all laws, ordinances, and regulations by federal, state, city, or other governmental agency, which by reason of being neglected or violated may affect the Work contemplated and must secure and pay the fee required for any permits which may be necessary unless such fees are otherwise indicated to be paid in the Bidding Documents.

ARTICLE 26 FINDINGS FOR RECOVERY

26.01 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.

ARTICLE 27 OPINION OF PROBABLE COST

27.01 The opinion of probable cost related to the project reflected within the Drawings and Specifications is \$ 640,000 as of December 15, 2023.

END OF SECTION

SECTION 003100 - INFORMATION AVAILABLE TO BIDDERS

1.01 SUBSURFACE INVESTIGATION REPORT

- A. The following geotechnical report with respect to the project site has been prepared as a service to the Owner:
 - 1. Title: Geotechnical Subsurface Exploration, Shultz Minford Tank, Scioto County, Ohio, CTL Project No. 23050004COL
 - 2. Date: March 17, 2023, Revised January 2, 2024
 - 3. Prepared by: CTL Engineering, Inc., Columbus, Ohio
- B. Copies of the complete report has been included.
- C. This report identifies properties of below grade conditions primarily for the use of the Architect/Engineer.
- D. The recommendations described shall not be construed as a requirement of this Contract unless specifically referenced in the Contract Documents.
- E. This report, by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this information, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price accruing to Owner.

2.01 INTERPRETATION

- A. No representation or warranty is made by CT Consultants, Inc. or the Owner of the adequacy or content of this Information Available to Bidders.
- B. Information Available to Bidders is not a part of the Contract Documents.

END OF SECTION

BID FORMS

The bid forms are not available online. The bid forms are available only by purchasing a set of plans and specifications at the location indicated in the Advertisement for Bids/Public Notice to Bidders.

SECTION 00510 - NOTICE OF AWARD

DATE: _____, 20_____

TO: _____
(Bidder)

ADDRESS: _____

PROJECT: _____

You are hereby notified that your Bid dated _____, 20____ for the above Contract has been considered. You are the apparent successful bidder and have been awarded a contract for the above named project.

The Contract Price of your contract is \$_____.

Three (3) copies of each of the proposed Contract Documents (except drawings) accompany this Notice of Award. Three (3) sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within **10 DAYS** of the date of this Notice of Award:

1. You must deliver to the Owner three (3) fully executed counterparts of the Agreement, including all the Contract Documents.
2. You must deliver with the executed Agreement, the Payment and Performance Bonds and the Insurance Certificate as specified in the Instructions to Bidders, The General Conditions (Article 5), and the Supplementary Conditions.

Failure to comply with these conditions within the time specified will entitle the Owner to consider your Bid abandoned, and to annul this Notice of Award, and to declare your Bid Security forfeited.

Within **10 DAYS** after you comply with the foregoing conditions, the Owner will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

OWNER: _____

By: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by

(Bidder)

this _____ day of _____, 20_____

By _____

Title _____

Copy to Engineer.

END OF SECTION

SECTION 00520 - AGREEMENT

THIS AGREEMENT is by and between _____

(hereinafter all Owner) and _____

(hereinafter called Contractor).

Owner and Contractor, in consideration of the mutual covenants set forth herein, agree as follows:

ARTICLE 1 WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Construction of a 506,627 gallon, AWWA D103, glass-lined, bolted steel, standpipe and related appurtenances.

ARTICLE 2 THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Scioto County Regional Water District No. 1
Minford Area Water Storage Tank

ARTICLE 3 ENGINEER

3.01 The Project has been designed by GGC Engineers, Inc. (Engineer), who is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 CONTRACT TIMES

4.01 Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Days to Achieve Substantial Completion and Final Payment

A. The Work will be substantially completed within 270 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07B of the General Conditions within 300 calendar days after the date when the Contract Times commence to run.

4.03 Liquidated Damages

A. Contractor and Owner recognize that time is of the essence of this Agreement and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner the following daily charge:

<u>From More Than</u>	<u>Original Contract Amount</u> <u>To and Including</u>	<u>Daily Charge /</u> <u>Calendar Day</u>
\$ 0	\$ 100,000	\$ 500
100,000	500,000	800
500,000	1,000,000	1,000
1,000,000	3,000,000	1,200
3,000,000	5,000,000	1,500
5,000,000		2,000

For each day that expires after the Dates specified in Paragraph 4.02, liquidated damages as indicated above per calendar day shall be paid by the Contractor to the Owner until the Date requirements are met.

ARTICLE 5 CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds as follows:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

B. All specific cash allowances are included in the Contract Price and have been computed in accordance with Paragraph 11.02 of the General Conditions.

ARTICLE 6 PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment as established at the preconstruction conference during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such

payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, Owner will retain an amount equal to 8% of each progress payment application until 50% of the Work has been completed. At 50% completion, further progress payment applications shall be paid in full to the Contractor and no additional amounts will be retained unless the Engineer certifies to the Owner that the job is not proceeding satisfactorily. Amounts previously retained shall not be paid to the Contractor until substantial completion of the Work. At 50% completion of the Work, or any time thereafter when the character and progress of the Work is not satisfactory to Owner on the recommendation of Engineer, additional amounts may be retained, but in no event shall the total retainage be more than 8% of the value of the Work completed.

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 98% percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 100% percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 Material Stored on Site

A. Payment for material and equipment delivered and not incorporated shall be at the rate of 92% of the invoice value of such material. The balance of such invoiced value shall be paid when such material is incorporated into and becomes a part of the work completed to date. Such material compensated in this manner shall become the property of the Owner under the Contract while it remains in storage, but if such material is stolen, destroyed, or damaged by casualty before being used, Contractor shall replace it at his own expense.

6.04 Escrow of Retainage

A. Upon completion of 50% of the Contract, as evidenced by the payments of at least 50% of the value of the Contract to Contractor, monies held in retainage shall be placed in an escrow account in accordance with Chapter 153 of the Ohio Revised Code.

6.05 Final Payment

A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 HIERARCHY

7.01 In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

- | | |
|---------|--------------------|
| First: | Written Amendments |
| Second: | Agreement |

Third: Change Orders
Fourth: Addenda
Fifth: Supplementary Conditions
Sixth: General Conditions
Seventh: Specifications
Eighth: Drawings

Figure dimensions (numerical) on Drawings shall take precedence over dimensions measured utilizing a scale.

ARTICLE 8 CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Agreement Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.

E. Contractor has obtained and carefully studied (or assumes responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto.

F. Contractor does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

I. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (page 005200-1 to _____, inclusive).
2. Bid Guaranty and Contract Bond (pages 004300-1 to _____, inclusive).
3. Contract Bond (pages _____ to _____, inclusive).
4. Other bonds
 - a. _____ (page _____ to _____, inclusive).
 - b. _____ (page _____ to _____, inclusive).
 - c. _____ (page _____ to _____, inclusive).
5. General Conditions (pages 007000-1 to _____, inclusive).
6. Supplementary Conditions (pages 008000-1 to _____, inclusive).
7. Specifications as listed in the table of contents of the Project Manual.
8. Drawings _____

inclusive incorporated herein by reference with each sheet bearing the following general title:

9. Addenda (_____).

10. Exhibits to this Agreement (enumerated as follows):

- a. Notice to Proceed (pages 005500-1 to 005500-1, inclusive);
- b. Contractor's Bid (pages 004100-1 to _____, inclusive);
- c. Supplemental Unit Prices are included as part of the Agreement except as noted:

(_____);
- d. Delinquent Personal Property Tax Affidavit;
- e. Evidence of Contract Bond
(letter dated _____ attached);
- f. Documentation submitted by Contractor prior to Notice of Award

(_____);
- g. (_____);

11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

- a. Work Change Directives;
- b. Change Order(s).

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 MISCELLANEOUS

10.01 Terms

A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement in triplicate. One counterpart each has been delivered to Owner, Contractor, and Engineer. All portions of the Contract Documents have been signed or identified by Owner and Contractor or identified by Engineer on their behalf.

This Agreement will be effective on _____,
(which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

Name: _____

Name: _____

Address: _____

Address: _____

City, State, Zip _____

City, State, Zip _____

Phone: _____

Phone: _____

Fax No.: _____

Fax No.: _____

E-mail: _____

E-mail: _____

Designated
Representative: _____

Designated
Representative: _____

License No.: _____
(Where applicable)

Agent for Service of Process:

INSTRUCTIONS FOR EXECUTING AGREEMENT

The full name and business address of CONTRACTOR should be inserted and the Agreement should be signed with CONTRACTOR’S official signature. Please have the name of the signing party printed under all signatures to the Agreement.

If CONTRACTOR is operating as a partnership, each partner should sign the Agreement. If the Agreement is not signed by each partner, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer’s (signers’) authority to sign such Agreement for and in behalf of the partnership.

If the CONTRACTOR is an individual, the trade name (if CONTRACTOR is operating under a trade name) should be indicated in the Agreement and the Agreement should be signed by such individual. If signed by other than CONTRACTOR, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer’s authority to sign such Agreement for and in behalf of CONTRACTOR.

If CONTRACTOR is a corporation, the following certificate should be executed:

I, _____, certify that I am the _____ of the corporation named as CONTRACTOR herein above; that _____ who signed the foregoing agreement on behalf of CONTRACTOR was then _____ of said corporation; that said Agreement was duly signed for and in behalf of said Corporation by authority of its governing body, and is within the scope of its corporate powers.

CORPORATE SEAL

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows:

I have examined the attached contract(s) and bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements are adequate and have/has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

CERTIFICATE OF OWNER'S FISCAL OFFICER

I, the undersigned, _____, the duly authorized and acting fiscal representative of _____, do hereby certify as follows:

that the amount required to meet the above obligation has been lawfully appropriated for such purpose and is in the treasury or in process of collection to the credit of an appropriate fund free from any previous encumbrances.

END OF SECTION

SECTION 005400 - DELINQUENT PERSONAL PROPERTY STATEMENT

Name of Bidder: _____

Address: _____

Having been awarded a contract by the Scioto County Regional Water District No. 1, hereby affirms under oath, pursuant to the Ohio Revised Code Section 5719.042 that at the time this bid was submitted, my company (was) (was not) charged with delinquent personal property taxes on the general tax list of personal property for Scioto County, Ohio.

If such charge for delinquent personal property tax exists on the general tax list of personal property of Scioto County, Ohio the amount of such due and unpaid delinquent taxes, including due and unpaid penalties and interest shall be set forth below.

A copy of this statement shall be transmitted by the Bidder to the county treasurer within thirty days of the date it is submitted. A copy of this statement shall also be incorporated into the contract made between the Scioto County Regional Water District No. 1 and _____ (Name of Bidder) and no payment with respect to any contract shall be made unless such a statement has been so incorporated as a part thereof.

Delinquent Personal Property Tax: \$ _____

Penalties: \$ _____

Interest: \$ _____

Bidder: _____

By: _____

Title: _____

Subscribed in my presence, and sworn to me this _____ day of

_____, 20_____.

NOTARY PUBLIC

[SEAL]

Ohio Revised Code Section 5719.042

After the award by a taxing district of any contract let by competitive bid and prior to the time the contract is entered into, the person making a bid shall submit to the district's fiscal officer a statement affirmed under oath that the person with whom the contract is to be made was not charged at the time the bid was submitted with any delinquent personal property taxes on the general tax list of personal property of any county in which the taxing district has territory or that such person was charged with delinquent personal property taxes on any such tax list, in which case the statement shall also set forth the amount of such due and unpaid delinquent taxes and any due and unpaid penalties and interest thereon.

If the statement indicates that the taxpayer was charged with any such taxes, all of the following apply:

- (A) The fiscal officer shall transmit a copy of the statement to the county treasurer within thirty days of the date it is submitted.
- (B) A copy of that statement shall be incorporated into the contract.
- (C) No payment shall be made with respect to any contract to which this section applies unless that statement has been incorporated as required under division (B) of this section.

Amended by 131st General Assembly File No. TBD, HB 166, §1, eff. 9/8/2016.

Effective Date: 09-21-1982.

END OF SECTION

SECTION 005500 - NOTICE TO PROCEED

TO: _____

ADDRESS: _____

PROJECT: _____

CONTRACT NO: _____

CONTRACT FOR: _____

You are hereby notified that the Contract Time under the above Contract will commence to run on: _____, 20__. By that date, you are to start performing your obligations under the Contract Documents. In accordance with the provisions in the Contract Agreement., Section 3.1 the Date of Substantial Completion is: __ calendar days after the date of commencement of the Work specified above, or not later than _____, 20__.

Section 4.03 of the Agreement provides for an assessment of liquidated damages for each and every calendar day after the above established contract completion date that the Work remains incomplete.

Before you start any Work at the site, Paragraph 3.03.A.1 of the General Conditions provides that you must study the Contract Documents and verify figures and field dimension, and must report any observed errors or discrepancies and/or any concerns at this time.

Also, before you may start any Work at the site, you must:

1. Submit to the Engineer the Proposed Schedule called for in Section 013216.

OWNER:

By: _____ Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by

_____, this _____ day of _____, 20__.

By: _____ Title: _____
(Contractor's Representative)

Copy to Engineer

END OF SECTION

Signed and sealed this _____ day of _____, 20__.

(PRINCIPAL)

(SURETY)

By: _____

By: _____

Printed Name & Title: _____

Printed Name & Title: _____

Surety's Address: _____

Surety's Telephone Number: _____

Surety's Fax Number: _____

NAME OF SURETY'S AGENT

Surety's Agent's Address: _____

Surety's Agent's Telephone Number: _____

Surety's Agent's Fax Number: _____

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)	% (F) B	Balance to Finish (B - F)			
	Item												
Totals													

SECTION 006516 - CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT TITLE: _____

LOCATION: _____

OWNER: _____

DATE OF SUBSTANTIAL COMPLETION: _____

The undersigned CONTRACTOR hereby certifies that all work included in the above-captioned contract has been substantially completed in accordance with the requirements of the CONTRACT DOCUMENTS including approved modifications thereto, and requests that the work be accepted so that the Owner can occupy or utilize the Work for its intended use.

A list of items (Punch List) to be completed or corrected shall be completed and attached by the Engineer. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the requirements of the CONTRACT DOCUMENTS including approved modifications thereto. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the Certificate of Final Completion or the date of final payment.

I understand that neither the determination by the ENGINEER that the work is completed, nor the acceptance thereof by the Owner, shall operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the Contract Documents.

CONTRACTOR

SIGNATURE

TITLE

DATE

The undersigned ENGINEER has inspected the work included in the above-captioned contract, finds it to have been substantially completed in accordance with the requirements of the CONTRACT DOCUMENTS including approved modifications thereto. A list of items (Punch List) to be completed or corrected by the Contractor prior to final payment is attached.

ENGINEER

SIGNATURE

TITLE

DATE

Upon the above representation of the CONTRACTOR and the above recommendation of the ENGINEER, the undersigned hereby accepts the work included in the above-captioned contract.

OWNER

SIGNATURE

TITLE

DATE

END OF SECTION

SECTION 006519 - CERTIFICATE OF FINAL COMPLETION

PROJECT TITLE: _____

LOCATION: _____

OWNER: _____

DATE OF CONTRACT COMPLETION: _____

The undersigned CONTRACTOR hereby certifies that all work included in the above-captioned contract has been completed in accordance with the requirements of the CONTRACT DOCUMENTS including approved modifications thereto, and requests that the work be accepted.

I understand that neither the determination by the ENGINEER that the work is completed, nor the acceptance thereof by the Owner, shall operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the contract document

CONTRACTOR

SIGNATURE

TITLE

DATE

The undersigned ENGINEER has inspected the work included in the above-captioned contract, finds it to have been completed in accordance with the requirements of the CONTRACT DOCUMENTS including approved modifications thereto, and accordingly recommends that the work be accepted.

ENGINEER

SIGNATURE

TITLE

DATE

Upon the above representation of the CONTRACTOR and the above recommendation of the ENGINEER, the undersigned hereby accepts the work included in the above-captioned contract.

OWNER

SIGNATURE

TITLE

DATE

END OF SECTION

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.

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
a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

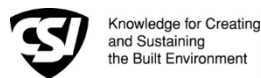
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AMERICAN SOCIETY OF CIVIL ENGINEERS

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The Associated General Contractors of America



Construction Specifications Institute

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1420 King Street, Alexandria, VA 22314

American Council of Engineering Companies
1015 15th Street, N.W., Washington, DC 20005

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400

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, 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*--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*-- 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 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.

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*--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*--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.

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.

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 as Contractor may be required to furnish.

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.

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.

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.

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.

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 Regulations 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:* 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.

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).

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 adaption 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 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:

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.

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. 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.

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 shall, promptly 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 in the Supplementary 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,
- 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.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* Reference is made to the Supplementary Conditions 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. 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.

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. 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.

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 Supplementary 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 the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

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 the Supplementary 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 or required by Laws or Regulations, whichever is greater;

3. include 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 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 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 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 the Supplementary 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.

B. Owner shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will 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.

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. 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 the Supplementary 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 the Supplementary 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, 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.

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 Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. 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.

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. 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 connection 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.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for 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 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 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 the Supplementary 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 Supplementary Conditions, 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.

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 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 record copy 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.

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 , 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.

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.

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 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 of 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. 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. 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 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.

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).

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.

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).

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 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.

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, 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.

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. 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, or acts of God.

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.

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, 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 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.

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.

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. 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 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.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

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.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended 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.

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. 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. 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.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven 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.

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 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 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. 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

4. 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.

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.

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.

ARTICLE 17 - MISCELLANEOUS

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 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 General Conditions.

SECTION 008000 - SUPPLEMENTARY CONDITIONS

These Supplementary Conditions Amend or Supplement the Standard General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary General Conditions have the meanings stated below which are applicable to both the singular and plural thereof.

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 Defined Terms

- SC-1.01.A Insert in the first sentence after the phrase “printed with initial capital letters” the following phrase:
- “or with capital letters”
- SC-1.01.A.2 The definition presented for “Agreement” shall also apply to an “Owner-Contractor Agreement”.
- SC-1.01.A.12 Add the following sentence at the end of the paragraph:
- “The term Contract Documents shall also include the Invitation to Bid and the Instructions to Bidders.”
- SC-1.01.A.17 The following Drawings are part of the Contract Documents:
- Title: Minford Area Water Storage Tank
- Revision No.: 0
- Date: 12/15/2023
- Sheets: 8
- as prepared by CT Consultants, Inc.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.01 Delivery of Bonds and Evidence of Insurance

- SC-2.01.A Insert in the first sentence after the phrase “such bonds” the following phrase:
- “insurance certificates, insurance endorsements, and other documents”
- Insert at the end of the first sentence after the phrase “required to furnish” the following phrase:

“under the Contract Documents”

SC-2.01.B Delete Paragraph 2.01.B of the General Conditions in its entirety and insert the following in its place:

Evidence of Insurance: Before any Work at the Site is started, Contractor shall deliver to the Owner with copies to each additional insured identified in the 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.

SC-2.02 Copies of Documents

SC-2.02.A Delete Paragraph 2.02.A to the General Conditions in its entirety and insert the following in its place:

OWNER shall furnish to CONTRACTOR up to three (3) copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

SC-2.05 Before Starting Construction

SC-2.05.A.2 Add to Paragraph 2.05.A.3 of the General Conditions, the following:

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.

SC-2.07 Initial Acceptance of Schedules

SC-2.07.A Insert in the last sentence, after the phrase “to Engineer”, the following:

“and Owner”

SC-2.07.A.3 Add to Paragraph 2.07.A.3 of the General Conditions, the following:

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.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.03 Reporting and Resolving Discrepancies

SC-3.03.A.1 Insert in the first sentence of Paragraph 3.03.A.1 of the General Conditions before the phrase “Before undertaking” the following phrase:

“In addition to its obligations under the Instructions to Bidders,”

SC-3.03.A.3 Add the following language at the end of Paragraph 3.03.A.3 of the General Conditions:

“or Contractor failed to perform its obligations under the Instructions to Bidders.”

SC-3.03.A Add the following language at the end of Paragraph 3.03.A of the General Conditions:

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.).

SC-3.03.B.1 Add the following language at the end of Paragraph 3.03.B.1 of the General Conditions:

2. Within the Contract Documents, requirements of the Agreement shall take precedence over the 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.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

SC-4.01 Availability of Lands

SC-4.01.B Delete Paragraph 4.01.B to the General Conditions in its entirety and insert the following in its place:

Upon reasonable 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.

SC-4.02 Subsurface and Physical Conditions

SC-4.02.A Add the following language at the end of Paragraph 4.02.A of the General Conditions:

3. In the preparation of Drawings and Specifications, ENGINEER has relied upon the reports of physical conditions of the site of the Work as identified in Specification Section 00300 – Information Available to Bidders.

SC-4.03 Differing Subsurface and Physical Conditions

SC-4.03.A.4 Insert in the first sentence of Paragraph 4.03.A of the General Conditions after the phrase “the Contractor” the following phrase:

“as a condition precedent to any increase in the Contract Price and/or an extension of the Contract Times”

Delete the word “promptly” in the second phrase following Paragraph 4.03.A.4 of the General Conditions and insert the following in its place:

“within 48 hours”

SC-4.04 Underground Facilities

SC-4.04.A.2.b Delete Paragraph 4.04.A.2.b of the General Conditions in its entirety and insert the following in its place:

The Contractor shall be responsible for 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.

SC-4.05 Reference Points

SC-4.05 Add the following language at the end of Paragraph 4.05 of the General Conditions:

Contractor is referred to the General Requirements for additional requirements for laying out the work.

SC-4.06 Hazardous Environmental Condition at Site

SC-4.06 Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

A. No reports on drawings related to Hazardous Environmental Conditions are known to Owner or Engineer.

B. Not Used.

ARTICLE 5 – BONDS AND INSURANCE

SC-5.01 Performance, Payment; and Other Bonds

SC-5.01. A Delete Paragraph 5.01.A of the General Conditions in its entirety and insert the following in its place:

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.

SC-5.01.B Insert in the first sentence of Paragraph 5.01.B of the General Conditions after the phrase "U.S. Department of the Treasury" the following phrase:

"and meet the other requirements of the Contract Documents"

SC-5.03 Certificates of Insurance

SC-5.03.A Delete Paragraph 5.03.A of the General Conditions in its entirety and insert the following in its place:

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

SC-5.03 Add the following language immediately after Paragraph 5.03.B of the General Conditions:

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.

SC-5.04 Contractor's Liability Insurance

SC-5.04.B.1 Delete the phrase "subject to any customary exclusion regarding professional liability" from the first sentence of Paragraph 5.04.B.1

SC-5.04.B.3 Amend in Paragraph 5.04.B.3 of the General Conditions the phrase "completed operations insurance" to read "products and completed operations insurance".

SC-5.04.B.5 Amend in Paragraph 5.04.B.5 of the General Conditions the phrase "materially changed" to read "materially changed with respect to coverage on the Project".

SC-5.04.B.7 Amend in Paragraph 5.04.B.7 of the General Conditions the phrase "completed operations insurance" to read "products and completed operations insurance".

Add the following new paragraphs immediately after Paragraph 5.04.B.

C. The limits of liability for the insurances required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Law or Regulations. The types of insurance and the limits of liability indicated are the minimum required. Neither the Owner nor the Engineer warrant the adequacy of the types of insurance or the limits of liability required. Any policy exclusions shall be indicated on the insurance certificate. Insurance shall be provided on an occurrence form basis. Contractor shall provide verification of all coverage with or on the insurance certificate.

1. Worker's Compensation and related coverage under Paragraphs 5.04.A.1 and A.2 of the General Conditions:

- a. State of Ohio: Statutory
- b. Employer's Liability:
 - Bodily Injury by Accident:
Each Accident \$ 1,000,000
 - Bodily Injury by Disease:
Each Employee \$ 1,000,000
Policy Limit \$ 1,000,000

2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall be written on a commercial general liability form and which shall include completed operations insurance and product liability coverage and eliminate the exclusion with respect to property under the care, custody and control of the Contractor:

- a. Policy Limits:
 - 1) General Aggregate \$ 2,000,000
 - 2) Products – Completed Operations
Aggregate \$ 1,000,000
 - 3) Personal and Advertising Injury \$ 2,000,000
 - 4) Each Occurrence
(Bodily Injury and Property Damage) \$ 1,000,000
 - 5) Fire Damage (any one fire) \$ 1,000,000
 - 6) Medical Expense (any one person) \$ 10,000

b. Policy shall include as a minimum the following coverage:

- 1) Broad Form Property Damage Coverage.
 - 2) An elimination of the exclusions with respect to property under the care, custody, or control of the Contractor. In lieu of elimination of the exclusion, the Contractor may provide Builder's Risk or Installation floater coverage for property under the care, custody, or control of the Contractor.
 - 3) Explosion, Collapse, and Underground coverage applicable under Property Damage Liability Insurance.
 - 4) Contractual Liability Coverage.
 - 5) Independent Contractor Coverage.
 - 6) Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.
3. Comprehensive Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:

a. Bodily Injury:

Each person	\$ 500,000
Each Accident	\$ 1,000,000

b. Property Damage:

Each Accident	\$ 500,000
---------------	------------

4. Umbrella Coverage:

a. Umbrella policy (pay on behalf form) with limits of \$2,000,000 for bodily injury, personal injury and property damage on a combined basis shall be provided with the stated underlying limits of Paragraphs 5.04.C.1, 5.04.C.2, and 5.04.C.3.

b. Policy shall include the Owner, the Engineer and any others required by Paragraph 5.04.B.1 of the General Conditions as additional insureds.

D. Insurance certificates for commercial general, automobile, umbrella, and builder's risk shall specifically indicate by name the additional insureds which are to include the Owner, the Engineer as well as any other persons or entities so identified. Certificates shall be Acord 25-S or equivalent.

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

1. Contractor's insurance shall be primary and non-contributory.

2. Insurance policies shall be written on an occurrence basis only.
3. 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.
4. 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.

SC-5.06 Property Insurance

SC-5.06.A Delete Paragraph 5.06.A in its entirety and insert the following:

A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of full replacement cost thereof. Insurance shall be completed value form.

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 the Supplementary 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 Contractor in accordance with this Paragraph 5.06.A and shall comply with the requirements of Paragraph 5.06.C of the General Conditions.

SC-5.06.B Delete Paragraph 5.06.B of the General Conditions in its entirety.

SC-5.06.D Delete the first sentence of Paragraph 5.06.D of the General Conditions and insert the following in its place:

The Contractor shall pay all deductible provisions of insurances. The maximum deductible shall be \$5,000.

SC-5.06.E Delete Paragraph 5.06.E of the General Conditions in its entirety.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

SC-6.02 Labor; Working Hours

SC-6.02.B Insert in the second sentence of Paragraph 6.02.B of the General Conditions before the phrase “or any legal holiday” the following phrase:

“shut down dates as defined in the Agreement,”

SC-6.02 Add the following new paragraph immediately after Paragraph 6.02.B.

C. Costs incurred by the Owner related to inspection of Work performed by the Contractor, at the Contractor’s discretion, outside of regular working hours and not approved, in writing, by the Owner, shall be the responsibility of the Contractor. The Owner may deduct these costs from the periodic and final payment requests submitted by the Contractor.

SC-6.03 Services, Materials, and Equipment

SC-6.03.B Add the following to the end of Paragraph 6.03.B of the General Conditions.

Contractor and Supplier warrant 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.

SC-6.06 Concerning Subcontractors, Suppliers, and Others

SC-6.06.A Add the following to the end of Paragraph 6.06.A of the General Conditions.

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.

SC-6.06 Add the following new paragraph immediately after Paragraph 6.06.G.

F. The Owner or the Engineer may furnish to any Subcontractor or Supplier to the extent practicable, information about amounts paid to the Contractor on account of Work performed for the Contractor by a particular Subcontractor or Supplier.

SC-6.08 Permits

SC-6.08 Add the following new paragraph immediately after Paragraph 6.08.A.

B. Refer to the General Requirements for additional permit information.

SC-6.10 Taxes

SC-6.10 Add the following new paragraphs immediately after Paragraph 6.10.A.

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.

SC-6.12 Record Documents

SC-6.12.A Delete the last sentence of Paragraph 6.12.A of the General Conditions and insert the following in its place:

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 the Owner.

SC-6.14 Safety Representative

SC-6.14 Add the following new paragraph immediately after Paragraph 6.14.A.

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.

SC-6.20 Indemnification

SC-6.20.A Delete Paragraph 6.20.A in its entirety and insert the following:

A. 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.

SC-6.20.C Delete Paragraph 6.20.C of the General Conditions in its entirety, including Paragraph 6.20.C.1 and Paragraph 6.20.C.2.

ARTICLE 7 – OTHER WORK AT THE SITE

SC-7.04 Claims by Other Contractors

SC-7.04 Add the following new paragraph immediately after Paragraph 7.03.

7.04 Claims by Other Contractors

A. Should Contractor cause damage to the work or property of any separate contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Contractor shall promptly attempt to settle with such other contractor by agreement or to otherwise resolve the dispute by arbitration or at law.

B. Should Contractor cause damage to the work or property of any separate contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Owner or Engineer, Contractor shall indemnify Owner and Engineer as required under Paragraph 6.20.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-9.03 Project Representative

SC-9.03 Add the following new paragraph immediately after Paragraph 9.03.A.

B. Resident Project Representative personnel on this project may include

personnel furnished by Owner, Engineer, or both. The duties and responsibilities of the Resident Project Representative(s) include the following:

1. Review schedules as required in Paragraph 2.05.A of the General Conditions and amendment thereto.
2. Attend conferences and meetings with Contractor.
3. Serve as liaison between Engineer and Contractor and help Engineer serve as liaison between Owner and Contractor.
4. Conduct on-site observation of the work.
5. Observe tests, equipment, and system startups.
6. Report to Engineer when clarifications and interpretations of the Contract Documents are needed. Consider, evaluate, and report to Engineer, Contractor's requests for modification.
7. Maintain orderly records, keep a daily log (when on a part-time basis, keep log for days visiting site), and furnish periodic reports to Engineer of the progress of the Work.
8. Before project completion, prepare final list of items to be completed or corrected and make recommendations to Engineer concerning acceptance of the Work.
9. Review Payment Applications from Contractor.

The Resident Project Representatives shall not:

1. Authorize any deviation from the Contract Documents or substitutions of materials or equipment.
2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractor, or Contractor's superintendent.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences, or procedures of construction.
5. Advise on, issue directions regarding, or assume control over safety precautions and programs in connection with the Work.
6. Accept shop drawing or sample submittals from anyone other than Contractor.

7. Authorize Owner to occupy the Project in whole or in part.
8. Participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Engineer.
9. Offer interpretation of the Contracts Documents without consultation with and direction from the Engineer.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

SC-10.05 Claims

SC-10.05.B Add the following to the end of Paragraph 10.05.B of the General Conditions.

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.

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

SC-11.03 Unit Price Work

SC-11.03.D Delete Paragraph 11.03.D in its entirety and insert the following:

D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. If the total unit cost of a particular item of Unit Price Work amounts to 15% or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by the Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement; and
2. If there is no corresponding adjustment with respect to any other item of Work; and
3. If the Contractor believes that it has incurred additional expense as a result thereof; or
4. If the Owner believes that the quantity variation entitles it to an adjustment in unit price,

either the Owner or the Contractor may make a Claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

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

SC-12.03 Delays

SC-12.03.A Add the following language at the end of Paragraph 12.03.A of the General Conditions:

Abnormal weather conditions shall be defined as conditions related to temperature and precipitation not reasonably anticipatable for the region. The following chart defines the number of days of inclement weather deemed normal for the project area. Conditions beyond the given limits are deemed abnormal.

Month	Days with 0.10 inch Precipitation, or more	Days with 32 Degrees F, or less
January	14	26
February	12	23
March	14	20
April	14	6
May	13	0
June	12	0
July	11	0
August	9	0
September	8	0
October	8	3
November	11	15
December	12	24

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

SC-13.03 Tests and Inspections

SC-13.03.A Add the following language at the beginning of Paragraph 13.03.A of the General Conditions:

All Work is subject to testing to indicate compliance with Contract Document requirements. Duplicate copies of test results of all tests required shall be submitted to Engineer. Testing laboratories are subject to the approval of

Engineer. Tests and inspection of work may be conducted by Owner or an independent laboratory employed by Owner. Tests may also be performed in the field by Engineer as a basis for acceptance of the Work.

Add the following language at the end of Paragraph 13.03.A of the General Conditions:

Samples required for testing shall be furnished by Contractor at no cost to Owner. In the event that completed Work does not conform to specification requirements during the initial test, the Work shall be corrected and retested for conformance. The entire cost of retesting completed Work shall be borne by Contractor. This shall include the extra cost for inspection to Owner which will be deducted from the final amount due Contractor.

SC-13.09 Owner May Correct Defective Work

SC-13.09.A Delete Paragraph 13.09.A in its entirety and insert the following:

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.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

SC-14.02 Progress Payments

SC-14.02.A.1 Insert after the first sentence of Paragraph 14.02.A.1 of the General Conditions the following sentence:

The Application for Payment shall be in the form and submitted in the number of copies (with all related documents), as required by the Contract Documents.

SC-14.02.A.1 Add the following new paragraphs immediately after Paragraph 14.02.A.3.

4. Contractor shall submit on 8-1/2 by 11 paper each lien waiver

submitted. The lien waiver shall be submitted in the same number or copies as the Application for Payment. The copies of the lien waiver submitted shall include at least one original.

5. No advanced payment for shop drawing preparation will be made. Shop drawing costs will be paid when equipment and materials are delivered and suitably stored on the site.

6. All stored equipment and materials for which payment is requested shall have invoices included with the Application for Payment. Equipment shall be identified thoroughly on the invoices, including serial numbers. The invoices shall be submitted in the same number or copies as the Application for Payment.

7. Payment for the stored equipment and material which are on the site shall not exceed the invoiced amount for each item, less the Contract retainage. The overhead and profit for the stored items shall not be invoiced until the item is installed.

8. Payment for off-site storage is normally reserved for sensitive or very large pieces of equipment that in Engineer's opinion would not be practical to have stored on the site. Payment for off-site stored items shall be limited to 75% of the invoiced value of the item, less Contract retainage. Contractor shall reimburse Owner the Cost of inspecting off-site stored items. When off-site storage is approved, Contractor shall provide Insurance Certificates and Document of Ownership to Owner.

SC-14.02.C.1 Delete the word "Ten" in the first sentence of Paragraph 14.02.C.1 of the General Conditions and insert the following in its place:

"Thirty"

SC-14.04 Substantial Completion

SC-14.04 Add the following new paragraphs immediately after Paragraph 14.04.D.

E. 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.

F. If more than one inspection by the Engineer for purposes of evaluating corrected Work is required, the inspections will be performed at the Contractor's expense.

SC-14.06 Final Inspection

SC-14.06 Add the following new paragraph immediately after Paragraph 14.06.A.

B. The ENGINEER will conduct one (1) inspection for the final payment application review when requested to by the CONTRACTOR. If the ENGINEER determines that the contract is not complete in accordance with

the approved contract documents the CONTRACTOR will be assessed for each additional inspection.

END OF SECTION

SECTION 008800 - PREVAILING WAGE REQUIREMENTS

ARTICLE 1 GENERAL

1.01 The Contractor and all Subcontractors shall pay employees on the project the current applicable prevailing wages established by the State of Ohio Department of Commerce Division of Labor & Worker Safety, Wage and Hour Bureau, including all updates, and shall comply with the provisions of Chapter 4115 of the Ohio Revised Code.

END OF SECTION



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Ohio Department of Commerce

Bureau of Wage & Hour Administration

[Consumers](#)

[Business](#)

[License/Permit Holders & Applicants](#)

[Other Government Agencies](#)

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Classification = All, County = SCIOTO, Union = All

County	Classification	Effective	Posted	Union
SCIOTO	Asbestos Worker	8/23/2018	8/23/2018	Asbestos Local 207 WV
SCIOTO	Asbestos Worker	9/8/2016	9/8/2016	Asbestos Local 80 Heat & Frost Insulators
SCIOTO	Boilermaker	10/1/2013	9/25/2013	Boilermaker Local 105
SCIOTO	Bricklayer	6/7/2023	6/7/2023	Bricklayer Local 23 Heavy Hwy (A)
SCIOTO	Bricklayer	6/7/2023	6/7/2023	Bricklayer Local 23 Heavy Hwy (B)
SCIOTO	Bricklayer	9/1/2023	8/30/2023	Bricklayer Local 23 Tile Finisher
SCIOTO	Bricklayer	9/1/2023	8/30/2023	Bricklayer Local 23 Tile Mechanic
SCIOTO	Bricklayer	6/1/2023	5/31/2023	Bricklayer Local 23 (Portsmouth)
SCIOTO	Bricklayer	6/1/2023	5/31/2023	Bricklayer Local 23 (Portsmouth) Industrial
SCIOTO	Carpenter	6/7/2023	6/7/2023	Carpenter Millwright Local 1090 SC South Point District A
SCIOTO	Carpenter	3/5/2014	3/5/2014	Carpenter NE District Industrial Dock & Door
SCIOTO	Carpenter	6/7/2023	6/7/2023	Carpenter & Pile Driver Local 437 SC District C Commercial
SCIOTO	Carpenter	6/7/2023	6/7/2023	Carpenter & Pile Driver Local 437 SC District C1 Industrial
SCIOTO	Carpenter	5/17/2023	5/17/2023	Carpenter & Pile Driver SC District HevHwy
SCIOTO	Cement Mason	5/1/2023	4/26/2023	Cement Mason Statewide HevHwy
SCIOTO	Cement	6/1/2023	5/31/2023	Cement Mason & Plasterers Local 132 (Portsmouth)
SCIOTO	Electrical	1/10/2024	1/10/2024	Electrical Local 575 Inside
SCIOTO	Electrical	3/5/2014	3/5/2014	Electrical Local 575 Inside Lt Commercial Central
SCIOTO	Voice Data Video	6/29/2022	6/29/2022	Electrical Local 575 Voice Data Video
SCIOTO	Lineman	3/1/2023	3/1/2023	Electrical Local 71 High Tension Pipe Type Cable
SCIOTO	Lineman	3/1/2023	3/1/2023	Electrical Local 71 Outside Utility Power
SCIOTO	Lineman	3/1/2023	3/1/2023	Electrical Local 71 Outside (Central OH Chapter)
SCIOTO	Voice Data Video	1/10/2024	1/10/2024	Electrical Local 71 Voice Data Video Outside
SCIOTO	Elevator	1/5/2021	1/5/2021	Elevator Local 11
SCIOTO	Glazier	12/7/2023	12/7/2023	Glazier Local 1195 Zone A
SCIOTO	Ironworker	7/19/2023	7/19/2023	Ironworker Local 769
SCIOTO	Laborer Group 1	5/1/2023	4/26/2023	Labor HevHwy 3
SCIOTO	Laborer	6/15/2022	6/15/2022	Labor Local 83
SCIOTO	Operating Engineer	5/1/2023	4/26/2023	Operating Engineers - Building Local 18 - Zone III
SCIOTO	Operating Engineer	5/1/2023	4/26/2023	Operating Engineers - HevHwy Zone II
SCIOTO	Painter	11/22/2023	11/22/2023	Painter Local 555 Commercial
SCIOTO	Drywall Finisher	11/22/2023	11/22/2023	Painter Local 555 Commercial
SCIOTO	Painter	11/22/2023	11/22/2023	Painter Local 555 HevHwy
SCIOTO	Painter	11/22/2023	11/22/2023	Painter Local 555 Industrial
SCIOTO	Drywall Finisher	11/22/2023	11/22/2023	Painter Local 555 Industrial
SCIOTO	Painter	6/10/2015	6/10/2015	Painter Local 639
SCIOTO	Painter	3/22/2023	3/22/2023	Painter Local 639 Zone 2 Sign
SCIOTO	Plumber/Pipefitter	6/14/2023	6/14/2023	Plumber Pipefitter Local 577 Commercial
SCIOTO	Plumber/Pipefitter	6/14/2023	6/14/2023	Plumber Pipefitter Local 577 Industrial
SCIOTO	Roofer	12/28/2022	12/28/2022	Roofer Local 185
SCIOTO	Sheet Metal Worker	8/12/2022	8/12/2022	Sheet Metal Local 24 Columbus
SCIOTO	Sprinkler Fitter	4/6/2022	4/6/2022	Sprinkler Fitter Local 669
SCIOTO	Truck Driver	5/1/2023	4/26/2023	Truck Driver Bldg & HevHwy Class 1 Locals 20,40,92,92b,100,175,284,438,377,637,908,957
SCIOTO	Truck Driver	5/1/2023	4/26/2023	Truck Driver Bldg & HevHwy Class 2 Locals 20,40,92,92b,100,175,284,438,377,637,908,957
SCIOTO	Truck Driver	5/1/2023	4/26/2023	Truck Driver Bldg & HevHwy Class 3 Locals 20,40,92,92b,100,175,284,438,377,637,908,957

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Prevailing Wage Rate Skilled Crafts

Name of Union: Asbestos Local 207 WV

Change # : LCN01-2018fbLoc207WV

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	\$23.40	\$7.25	\$6.95	\$0.62	\$0.00	\$0.00	\$0.10	\$0.00	\$0.00	\$38.32	\$50.02
Trainee	\$16.70	\$7.25	\$2.60	\$0.62	\$0.00	\$0.00	\$0.10	\$0.00	\$0.00	\$27.27	\$35.62

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Trainee

Jurisdiction (* denotes special jurisdictional note) :

GALLIA, JACKSON, LAWRENCE, MEIGS, PIKE, SCIOTO, WASHINGTON

Special Jurisdictional Note :

Details :

Asbestos, Lead and Mold removal.

A Trainee is defined as a certified asbestos abatement worker who has less than 600 hours of actual work experience as verified by the union's Health & Welfare fund. Asbestos ,Lead & Mold Abatement.

The removal of all insulation materials, and lead 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: Asbestos Local 80 Heat & Frost Insulators

Change # : LCN01-2016fbLoc80

Craft : Asbestos Worker Effective Date : 09/08/2016 Last Posted : 09/08/2016

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Asbestos Insulation Worker	\$31.98		\$8.16	\$6.81	\$0.25	\$0.00	\$5.77	\$0.11	\$0.00	\$0.00	\$53.08	\$69.07
Apprentice	Percent											
1st year	45.00	\$14.39	\$5.92	\$6.81	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.12	\$34.32
2nd year	55.00	\$17.59	\$5.92	\$6.81	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.32	\$39.11
3rd year	65.00	\$20.79	\$8.16	\$6.81	\$0.25	\$0.00	\$5.77	\$0.11	\$0.00	\$0.00	\$41.89	\$52.28
4th year	75.00	\$23.98	\$8.16	\$6.81	\$0.25	\$0.00	\$5.77	\$0.00	\$0.00	\$0.00	\$44.97	\$56.97

Special Calculation Note : Supplemental Medical Retirement.

Ratio :

3 Journeymen to 1 Apprentice per shop

Jurisdiction (* denotes special jurisdictional note) :

GALLIA, JACKSON, LAWRENCE, MEIGS, PIKE, SCIOTO, WASHINGTON

Special Jurisdictional Note :

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. Preparation, fabrication, alteration, applications, erection, assembling, molding, spraying, pouring, mixing, hanging, adjusting, repairing, dismantling, removal, reconditioning, maintenance, finishing and/or waterproofing of cold or hot thermal insulation with such materials as may be specified when these materials are to be installed for thermal purposes in voids, or on either piping, fittings, valves, boilers, ducts, flutes, tanks, vats, equipment or on any hot or cold surfaces for the purpose of thermal control. This is also to include all labor connected with the handling and distribution of thermal insulating materials on job premises.

Prevailing Wage Rate Skilled Crafts

Name of Union: Boilermaker Local 105

Change # : LCN02-2013fbLoc 105

Craft : Boilermaker Effective Date : 10/01/2013 Last Posted : 09/25/2013

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Boilermaker	\$35.26		\$7.07	\$13.28	\$0.89	\$0.00	\$3.00	\$0.55	\$0.00	\$0.00	\$60.05	\$77.68
Apprentice	Percent											
1st 6 months	70.03	\$24.69	\$7.07	\$11.30	\$0.89	\$0.00	\$2.10	\$0.55	\$0.00	\$0.00	\$46.60	\$58.95
2nd 6 months	75.02	\$26.45	\$7.07	\$11.30	\$0.89	\$0.00	\$2.25	\$0.55	\$0.00	\$0.00	\$48.51	\$61.74
3rd 6 months	80.00	\$28.21	\$7.07	\$11.30	\$0.89	\$0.00	\$2.40	\$0.55	\$0.00	\$0.00	\$50.42	\$64.52
4th 6 months	85.02	\$29.98	\$7.07	\$11.30	\$0.89	\$0.00	\$2.55	\$0.55	\$0.00	\$0.00	\$52.34	\$67.33
5th 6 months	87.52	\$30.86	\$7.07	\$13.28	\$0.89	\$0.00	\$2.63	\$0.55	\$0.00	\$0.00	\$55.28	\$70.71
6th 6 months	90.03	\$31.74	\$7.07	\$13.28	\$0.89	\$0.00	\$2.70	\$0.55	\$0.00	\$0.00	\$56.23	\$72.11
7th 6 months	92.50	\$32.62	\$7.07	\$13.28	\$0.89	\$0.00	\$2.78	\$0.55	\$0.00	\$0.00	\$57.19	\$73.49
8th 6 months	95.00	\$33.50	\$7.07	\$13.28	\$0.89	\$0.00	\$2.85	\$0.55	\$0.00	\$0.00	\$58.14	\$74.89

Special Calculation Note : Other is Supplemental Health and Welfare

Ratio :

5 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, BROWN, BUTLER, CHAMPAIGN, CLARK, CLERMONT, CLINTON, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GREENE, GUERNSEY, HAMILTON, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING, MADISON, MEIGS, MIAMI, MONTGOMERY, MORGAN, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PREBLE, ROSS, SCIOTO, VINTON, WARREN

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 Heavy Hwy (A)

Change # : LCN01-2023ibLoc23HevHwyA

Craft : Bricklayer Effective Date : 06/07/2023 Last Posted : 06/07/2023

	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	\$32.40		\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.70	\$67.90
Apprentice	Percent											
1st year	70.00	\$22.68	\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.98	\$53.32
2nd year	80.00	\$25.92	\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.22	\$58.18
3rd year	90.00	\$29.16	\$9.75	\$9.03	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.46	\$63.04

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: Bricklayer Local 23 Heavy Hwy (B)

Change # : LCN01-2023ibLoc23HevHwyB

Craft : Bricklayer Effective Date : 06/07/2023 Last Posted : 06/07/2023

	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	\$33.39		\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.70	\$69.39
Apprentice	Percent											
1st year	70.00	\$23.37	\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.68	\$54.37
2nd year	80.00	\$26.71	\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.02	\$59.38
3rd year	90.00	\$30.05	\$9.75	\$9.03	\$0.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.36	\$64.39

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: Bricklayer Local 23 Tile Finisher

Change # : LCN01-2023ibLoc23TF

Craft : Bricklayer Effective Date : 09/01/2023 Last Posted : 08/30/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Tile Marble Terrazzo Finisher	\$27.87		\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$44.18	\$58.12
Terrazzo Base Grinder	\$28.37		\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$44.68	\$58.87
Marble Sander Polisher	\$27.97		\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$44.28	\$58.27
Apprentices	Percent											
1st 6 months 0-600 hrs	65.00	\$18.12	\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$34.43	\$43.48
2nd 6 months 601-1200 hrs	70.00	\$19.51	\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$35.82	\$45.57
3rd 6 months 1201-1800 hrs	75.00	\$20.90	\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$37.21	\$47.66
4th 6 months 1801-2400 hrs	80.00	\$22.30	\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$38.61	\$49.75
5th 6 months 2401-3000 hrs	85.00	\$23.69	\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$40.00	\$51.84
6th 6 months 3001-3600	95.00	\$26.48	\$9.67	\$5.85	\$0.54	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$42.79	\$56.02
1-30 Days Prior to Entering Apprenticeship	60.00	\$16.72	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16.72	\$25.08

Special Calculation Note : Classification title contains "Bricklayer" because contract originates within the Bricklayer Local.

Note that the classification description is clarified after the local union number at the top of the page.

Ratio :

- 1 Journeyman to 1 Apprentice
- 5 Journeymen to 1 Apprentice
- 10 Journeymen to 2 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

- ADAMS, BROWN, BUTLER, CLERMONT,
- GALLIA, HAMILTON, LAWRENCE, PREBLE*,
- SCIOTO, WARREN, WARREN*

15 Journeymen to 3 Apprentices

20 Journeymen to 4 Apprentices

25 Journeymen to 5 Apprentices

Special Jurisdictional Note : Warren in the townships of Dixon, Gasper, Irsel, Somers & Gratis in Prebble County

Details :

****In order to utilize a Pre-Apprentice, you must have 1 Registered Apprentice in your employ.****

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 Tile Mechanic

Change # : LCN01-2023ibLoc23TM

Craft : Bricklayer Effective Date : 09/01/2023 Last Posted : 08/30/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer Tile Terrazzo Marble Mason Mechanic	\$32.41		\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$48.75	\$64.95
Marble Layout Work	\$32.91		\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$49.25	\$65.70
Swing Scaffold Worker	\$33.91		\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$50.25	\$67.20
Apprentice after 2 years (2400 hrs) as Apprentice Finisher												
Percent												
5th/6 Months 0- 600 hrs	70.00	\$22.69	\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$39.03	\$50.37
6th/6 months 601-1200 hrs	80.00	\$25.93	\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$42.27	\$55.23
7th/6 months 1201-1800 hrs.	85.00	\$27.55	\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$43.89	\$57.66
8th/6 months 1801-2400 hrs.	90.00	\$29.17	\$9.67	\$5.85	\$0.57	\$0.00	\$0.25	\$0.00	\$0.00	\$0.00	\$45.51	\$60.09
.												

Special Calculation Note : Classification title contains "Bricklayer" because contract originates within the Bricklayer Local.

Note that the classification description is clarified after the local union number at the top of the page.

Ratio :

- 1 Journeyman to 1 Apprentice
- 5 Journeymen to 1 Apprentice
- 10 Journeymen to 2 Apprentices
- 15 Journeymen to 3 Apprentices
- 20 Journeymen to 4 Apprentices
- 25 Journeymen to 5 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, BROWN, BUTLER, CLERMONT,
GALLIA, HAMILTON, LAWRENCE, PREBLE*,
SCIOTO, WARREN

Special Jurisdictional Note : In Preble County the Townships of Dixon, Israel, Gasper, Lanier, Somers and Gratis.

Details :

In order to utilize a Pre-Apprentice, you must have 1 Registered Apprentice in your employ.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Portsmouth)

Change # : LCN01-2023ibLoc23Ports

Craft : Bricklayer Effective Date : 06/01/2023 Last Posted : 05/31/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer	\$34.58		\$9.00	\$10.64	\$0.82	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$57.04	\$74.33
Stone Mason Cement Mason	\$34.58		\$9.00	\$10.64	\$0.82	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$57.04	\$74.33
Plasterer	\$34.58		\$9.00	\$10.64	\$0.82	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$57.04	\$74.33
Pointer Caulker Cleaner	\$34.58		\$9.00	\$10.64	\$0.82	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$57.04	\$74.33
Refractory Worker	\$34.58		\$9.00	\$10.64	\$0.82	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$57.04	\$74.33
Marble Mason	\$34.58		\$9.00	\$10.64	\$0.82	\$0.00	\$2.00	\$0.00	\$0.00	\$0.00	\$57.04	\$74.33
Apprentice	Percent											
1st 6 months	60.00	\$20.75	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.21	\$51.58
2nd 6 months	65.00	\$22.48	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.94	\$54.18
3rd 6 months	70.00	\$24.21	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.67	\$56.77
4th 6 months	75.00	\$25.93	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.40	\$59.36
5th 6 months	80.00	\$27.66	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.12	\$61.96
6th 6 months	85.00	\$29.39	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.85	\$64.55
7th 6 months	90.00	\$31.12	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.58	\$67.14
8th 6 months	95.00	\$32.85	\$9.00	\$10.64	\$0.82	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$53.31	\$69.74

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 Apprentices
15 Journeymen to 3 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, GALLIA, SCIOTO

Special Jurisdictional Note :

Details :

In the erection,alteration, repair or demolition of reinforced concrete chimneys,masonry chimney, masonry chimney silos, furnaces, stoves, and stacks, the following rates shall apply: \$0.50 per hour shall be paid in addition to the regular rate of wages up to and including 50 feet from base of structure. An additional \$0.25 per hour for each additional 50 feet thereafter.

All hazardous and high work performed in excess of 25 feet and or any work performed in excess of 6 feet below surface,in ditches, trenches and other excavations where employees are confined and dangerous conditions exist, \$0.25 per hour shall be paid in addition to regular rate of wages.

Employees working with carbon material,loose insulation, high temp mortars or any chemically treated materials injurious to their health, shall receive \$0.25 per hour in addition to their regular rate of wages.

Prevailing Wage Rate Skilled Crafts

Name of Union: Bricklayer Local 23 (Portsmouth) Industrial

Change # : LCN01-2023ibLoc23PortsIndu

Craft : Bricklayer Effective Date : 06/01/2023 Last Posted : 05/31/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bricklayer	\$35.85		\$9.00	\$10.64	\$0.84	\$0.00	\$2.50	\$0.00	\$0.00	\$0.00	\$58.83	\$76.76
Stone Mason Cement Mason	\$35.85		\$9.00	\$10.64	\$0.84	\$0.00	\$2.50	\$0.00	\$0.00	\$0.00	\$58.83	\$76.76
Plasterer	\$35.85		\$9.00	\$10.64	\$0.84	\$0.00	\$2.50	\$0.00	\$0.00	\$0.00	\$58.83	\$76.76
Pointer Caulker Cleaner	\$35.85		\$9.00	\$10.64	\$0.84	\$0.00	\$2.50	\$0.00	\$0.00	\$0.00	\$58.83	\$76.76
Refractory Worker	\$35.85		\$9.00	\$10.64	\$0.84	\$0.00	\$2.50	\$0.00	\$0.00	\$0.00	\$58.83	\$76.76
Marble Mason	\$35.85		\$9.00	\$10.64	\$0.84	\$0.00	\$2.50	\$0.00	\$0.00	\$0.00	\$58.83	\$76.76
Apprentice	Percent											
1st 6 months	60.00	\$21.51	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.99	\$52.75
2nd 6 months	65.00	\$23.30	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.78	\$55.43
3rd 6 months	70.00	\$25.09	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.58	\$58.12
4th 6th months	75.00	\$26.89	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.37	\$60.81
5th 6 months	80.00	\$28.68	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.16	\$63.50
6th 6 months	85.00	\$30.47	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.95	\$66.19
7th 6 months	90.00	\$32.27	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.75	\$68.88
8th 6 months	95.00	\$34.06	\$9.00	\$10.64	\$0.84	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.54	\$71.57

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 Apprentices
- 15 Journeymen to 3 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, GALLIA, SCIOTO

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter Millwright Local 1090 SC South Point District A

Change # : LCN01-2023ibLoc1090SCSPDisA

Craft : Carpenter Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Carpenter Millwright	\$36.50		\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$63.24	\$81.49
Apprentice	Percent											
1st 6 months	60.00	\$21.90	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$48.64	\$59.59
2nd 6 months	65.02	\$23.73	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$50.47	\$62.34
3rd 6 months	70.00	\$25.55	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$52.29	\$65.06
4th 6 months	75.00	\$27.37	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$54.12	\$67.80
5th 6 months	80.00	\$29.20	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$55.94	\$70.54
6th 6 months	85.00	\$31.02	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$57.77	\$73.28
7th 6 months	90.00	\$32.85	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$59.59	\$76.01
8th 6 months	95.00	\$34.67	\$8.13	\$13.59	\$0.60	\$0.00	\$4.15	\$0.27	\$0.00	\$0.00	\$61.42	\$78.75

Special Calculation Note : Other is UBC National Fund.

Ratio :

3 Journeymen to 1 Apprentice

If certain projects warrant a larger percentage of apprentices, it will be agreed to increase the ratio of apprentices to journeymen, but Not to exceed (1) Apprentice to (4) Journeymen.

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, FAYETTE, GALLIA, HIGHLAND, HOCKING, JACKSON, LAWRENCE, MEIGS, PIKE, ROSS, SCIOTO, VINTON

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, underground 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; hosts; 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 drivers 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, planning, extruder, ball, dust collectors, equipment in meat packing plants, splicing or 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, dripping 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 trail 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 Local 437 SC District C Commercial

Change # : LCN01-2023ibLoc437SCDisCComm

Craft : Carpenter Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	\$27.95		\$7.75	\$14.36	\$0.60	\$0.00	\$2.76	\$0.27	\$0.00	\$0.00	\$53.69	\$67.66
Apprentice	Percent											
1st 6 Months	60.00	\$16.77	\$7.75	\$8.98	\$0.60	\$0.00	\$0.00	\$0.27	\$0.00	\$0.00	\$34.37	\$42.76
2nd 6 Months	65.00	\$18.17	\$7.75	\$8.98	\$0.60	\$0.00	\$0.00	\$0.27	\$0.00	\$0.00	\$35.77	\$44.85
3rd 6 Months	70.02	\$19.57	\$7.75	\$9.98	\$0.60	\$0.00	\$1.45	\$0.27	\$0.00	\$0.00	\$39.62	\$49.41
4th 6 Months	75.00	\$20.96	\$7.75	\$9.98	\$0.60	\$0.00	\$1.45	\$0.27	\$0.00	\$0.00	\$41.01	\$51.49
5th 6 Months	80.00	\$22.36	\$7.75	\$10.98	\$0.60	\$0.00	\$1.70	\$0.27	\$0.00	\$0.00	\$43.66	\$54.84
6th 6 Months	85.00	\$23.76	\$7.75	\$10.98	\$0.60	\$0.00	\$1.70	\$0.27	\$0.00	\$0.00	\$45.06	\$56.94
7th 6 Months	90.00	\$25.16	\$7.75	\$11.98	\$0.60	\$0.00	\$1.95	\$0.27	\$0.00	\$0.00	\$47.71	\$60.28
8th 6 Months	95.00	\$26.55	\$7.75	\$11.98	\$0.60	\$0.00	\$1.95	\$0.27	\$0.00	\$0.00	\$49.10	\$62.38

Special Calculation Note : Other is UBC National Fund

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, FAYETTE, HIGHLAND, JACKSON, LAWRENCE*, PIKE, ROSS, SCIOTO

Special Jurisdictional Note : Lawrence County: Except east of State Route 775

Details :

Workmen employed on scaffold work, shafts, elevators, open structures or hazardous work, etc. shall be paid a rate of twenty-five cents (\$0.25) per hour above the regular scale of wages at 40 feet and five (\$0.05) per hour for every ten feet thereafter.

CARPENTERS duties shall include but not limited to the milling, fashioning, joining, assembling, erecting, fastening, or dismantling of scaffolding and of material of wood, plastic, metal, fiber, cork and composition, and all other substitute materials. The handling, cleaning, erecting, installing and dismantling of machinery,

equipment and all materials used by carpenters.

The building and setting of all concrete forms and decking, and dismantling the same; the setting of templates for anchor bolts for structural members and for machinery, and the placing, leveling and bracing of these bolts; the making of all forms for bulkheads, figures, post, balusters and ornaments. The erection and installation of cooling towers assembled onsite. The building of all barricades and handling of rough lumber and drywall. The installation of all required blocking and all toilet accessories, including but not limited to grab bars, napkin dispensers and receptacles, mirrors and soap dispensers. The installation of metal studs and the welding of studs and other fastenings to receive material being applied by carpenters. The installation of all material used in drywall construction such as plasterboard, transite and other composition boards. The installation of carpet, artificial turf, wood and Resilient floors shall consist of and include the laying of all special designs of wood, wood block, wood composition, cork, linoleum, asphalt, mastic, plastic and rubber tile, whether nailed or laid in, or with linoleum paste or glue compositions. The installation of garage and overhead doors. The installation of fixtures, cabinets, shelving, racks, louvers, etc. The assembling and setting of all seats in theaters, halls, churches, schools, auditoriums, grandstands and other buildings.

Our claim of jurisdiction, therefore, extends over the following subdivisions of the trade. Carpenters and Joiners; Bridge, Dock and Wharf Carpenters, Divers, Underpinners, Timbermen and Core Drillers; Shipwrights, Boat Builders, Ship Carpenters, Joiners and Caulkers, Cabinet Makers, Bench Hands, Stair Builders; Millmen; Wood and Resilient Floor Layers and Finishers; Carpet Layers; Shinglers; Siders; Insulators; Acoustic and Drywall Applicators; Shorers and House Movers; Loggers; Lumber and Sawmill Workers; Furniture Workers; Reed and Rattan Workers; Shingle Weavers; Casket and Coffin Makers; Box Makers; Railroad Carpenters; and Car Builders, regardless of material used; and all those engaged in the operation of woodworking or other machinery required in the fashioning, milling or manufacturing of products used in the trade, or engaged as helpers to any of the above divisions or subdivisions, and the handling, erecting and installing of material on any of the above divisions or subdivisions; burning welding, rigging and the use of any instrument or tool for layout work incidental to the trade. When the term "Carpenter" and "Joiner" is used, it shall mean all the subdivisions of the trade.

PILEDRIIVER:

Where piling is used in the construction and repair of all wharves, docks, piers, trestles, caissons, cofferdams, the erection of all sea walls and breakwaters.

The placing of all walling, bumper guards of wood or metal. The framing, boring, drilling or burning of all holes in the same, all tie and hog rods in connection with Piledrivers work.

The driving, bracing, plumbing, cutting-off and capping of all piling whether wood, steel sheeting, metal pipe piling, composite or concrete.

The heading and splicing of wood piling and the making of woodsheet piling, The welding, cutting or burning of any metal and wood piling and shoring and underpinning in connection with Piledriver work.

The loading and unloading of all piling and other material used in connection with Piledrivers work.

The loading, unloading, erecting, framing, dismantling, moving and handling of all drivers, derrick, cranes and other piledriving equipment used in the work. Drilling in piling or drilled in caissons where a steel liner is used.

All machinery used for handling spuds or anchors on floating equipment used in our work shall be operated by our members. Where swing lines or derricks are used, members shall be used as watchmen.

All underwater and marine work on all 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.

All clamming work that is done by floating derricks.

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter & Pile Driver Local 437 SC District C1 Industrial

Change # : LCN01-2023ibLoc437SCDisC1Ind

Craft : Carpenter Effective Date : 06/07/2023 Last Posted : 06/07/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	\$31.73		\$7.75	\$13.98	\$0.60	\$0.00	\$3.08	\$0.27	\$0.00	\$0.00	\$57.41	\$73.27
Pile Driver	\$32.24		\$7.75	\$13.98	\$0.60	\$0.00	\$3.08	\$0.27	\$0.00	\$0.00	\$57.92	\$74.04
Apprentice paid at % of each class above plus listed fringes	Percent											
1st 6 Months	60.00	\$19.04	\$7.75	\$8.98	\$0.60	\$0.00	\$0.00	\$0.27	\$0.00	\$0.00	\$36.64	\$46.16
2nd 6 Months	65.00	\$20.62	\$7.75	\$8.98	\$0.60	\$0.00	\$0.00	\$0.27	\$0.00	\$0.00	\$38.22	\$48.54
3rd 6 Months	70.00	\$22.21	\$7.75	\$9.98	\$0.60	\$0.00	\$1.73	\$0.27	\$0.00	\$0.00	\$42.54	\$53.65
4th 6 Months	75.00	\$23.80	\$7.75	\$9.98	\$0.60	\$0.00	\$1.73	\$0.27	\$0.00	\$0.00	\$44.13	\$56.03
5th 6 Months	80.00	\$25.38	\$7.75	\$10.98	\$0.60	\$0.00	\$1.98	\$0.27	\$0.00	\$0.00	\$46.96	\$59.66
6th 6 Months	85.00	\$26.97	\$7.75	\$10.98	\$0.60	\$0.00	\$1.98	\$0.27	\$0.00	\$0.00	\$48.55	\$62.04
7th 6 Months	90.00	\$28.56	\$7.75	\$11.98	\$0.60	\$0.00	\$2.23	\$0.27	\$0.00	\$0.00	\$51.39	\$65.67
8th 6 Months	95.00	\$30.14	\$7.75	\$11.98	\$0.60	\$0.00	\$2.23	\$0.27	\$0.00	\$0.00	\$52.97	\$68.05

Special Calculation Note : Other is UBC National Fund

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, FAYETTE, HIGHLAND, JACKSON, LAWRENCE*, PIKE, ROSS, SCIOTO

Special Jurisdictional Note : Lawrence County: Except east of State Route 775

Details :

Workmen employed on scaffold work, shafts, elevators, open structures or hazardous work, etc. shall be paid a rate of twenty-five cents (\$0.25) per hour above the regular scale of wages at 40 feet and five (\$0.05) per hour for every ten feet thereafter.

CARPENTERS duties shall include but not limited to the milling, fashioning, joining, assembling, erecting, fastening, or dismantling of scaffolding and of material of wood, plastic, metal, fiber, cork and composition, and all other substitute materials. The handling, cleaning, erecting, installing and dismantling of machinery, equipment and all materials used by carpenters.

The building and setting of all concrete forms and decking, and dismantling the same; the setting of templates for anchor bolts for structural members and for machinery, and the placing, leveling and bracing of these bolts; the making of all forms for bulkheads, figures, post, balusters and ornaments. The erection and installation of cooling towers assembled onsite. The building of all barricades and handling of rough lumber and drywall. The installation of all required blocking and all toilet accessories, including but not limited to grab bars, napkin dispensers and receptacles, mirrors and soap dispensers. The installation of metal studs and the welding of studs and other fastenings to receive material being applied by carpenters. The installation of all material used in drywall construction such as plasterboard, transite and other composition boards. The installation of carpet, artificial turf, wood and Resilient floors shall consist of and include the laying of all special designs of wood, wood block, wood composition, cork, linoleum, asphalt, mastic, plastic and rubber tile, whether nailed or laid in, or with linoleum paste or glue compositions. The installation of garage and overhead doors. The installation of fixtures, cabinets, shelving, racks, louvers, etc. The assembling and setting of all seats in theaters, halls, churches, schools, auditoriums, grandstands and other buildings.

Our claim of jurisdiction, therefore, extends over the following subdivisions of the trade. Carpenters and Joiners; Bridge, Dock and Wharf Carpenters, Divers, Underpinners, Timbermen and Core Drillers; Shipwrights, Boat Builders, Ship Carpenters, Joiners and Caulkers, Cabinet Makers, Bench Hands, Stair Builders; Millmen; Wood and Resilient Floor Layers and Finishers; Carpet Layers; Shinglers; Siders; Insulators; Acoustic and Drywall Applicators; Shorers and House Movers; Loggers; Lumber and Sawmill Workers; Furniture Workers; Reed and Rattan Workers; Shingle Weavers; Casket and Coffin Makers; Box Makers; Railroad Carpenters; and Car Builders, regardless of material used; and all those engaged in the operation of woodworking or other machinery required in the fashioning, milling or manufacturing of products used in the trade, or engaged as helpers to any of the above divisions or subdivisions, and the handling, erecting and installing of material on any of the above divisions or subdivisions; burning welding, rigging and the use of any instrument or tool for layout work incidental to the trade. When the term "Carpenter" and "Joiner" is used, it shall mean all the subdivisions of the trade.

PILEDRIIVER:

Where piling is used in the construction and repair of all wharves, docks, piers, trestles, caissons, cofferdams, the erection of all sea walls and breakwaters.

The placing of all walling, bumper guards of wood or metal. The framing, boring, drilling or burning of all holes in the same, all tie and hog rods in connection with Piledrivers work.

The driving, bracing, plumbing, cutting-off and capping of all piling whether wood, steel sheeting, metal pipe piling, composite or concrete.

The heading and splicing of wood piling and the making of woodsheet piling, The welding, cutting or burning of any metal and wood piling and shoring and underpinning in connection with Piledriver work.

The loading and unloading of all piling and other material used in connection with Piledrivers work.

The loading, unloading, erecting, framing, dismantling, moving and handling of all drivers, derrick, cranes and other piledriving equipment used in the work. Drilling in piling or drilled in caissons where a steel liner is used.

All machinery used for handling spuds or anchors on floating equipment used in our work shall be operated by our members. Where swing lines or derricks are used, members shall be used as watchmen.

All underwater and marine work on all 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.

All clamming work that is done by floating derricks.

Prevailing Wage Rate Skilled Crafts

Name of Union: Carpenter & Piledriver SC District HevHwy

Change # : LRC01-2023inCarpSCHevHwy

Craft : Carpenter Effective Date : 05/17/2023 Last Posted : 05/17/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Journeyman	\$32.42		\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$53.99	\$70.20
Apprentice	Percent											
1st 6 months	60.00	\$19.45	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$41.02	\$50.75
2nd 6 months	65.00	\$21.07	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$42.64	\$53.18
3rd 6 months	70.00	\$22.69	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$44.26	\$55.61
4th 6 months	75.00	\$24.32	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$45.89	\$58.04
5th 6 months	80.00	\$25.94	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$47.51	\$60.47
6th 6 months	85.00	\$27.56	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$49.13	\$62.91
7th 6 months	90.00	\$29.18	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$50.75	\$65.34
8th 6 months	95.00	\$30.80	\$7.60	\$10.78	\$0.50	\$0.00	\$2.54	\$0.15	\$0.00	\$0.00	\$52.37	\$67.77

Special Calculation Note : Other is UBC National Fund

Ratio :

1 Journeymen to 1 Apprentice

An employer shall have the right to employ one (1) Apprentice for one (1) Journeyman Carpenter in its employment for the first Apprentice employed, and 1 (1) Apprentice for two (2) Journeyman Carpenter for additional Apprentices employed.

Thereafter, every third additional carpenter hired shall be an apprentice, if available, and if practical for the type of work being performed.

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GUERNSEY, HIGHLAND, HOCKING, JACKSON, LAWRENCE, LICKING, MADISON, MARION, MEIGS, MORGAN, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, ROSS, SCIOTO, UNION, VINTON, WASHINGTON

Special Jurisdictional Note : **Highway Construction, Airport Construction, Heavy Construction but not limited to: (Tunnels, subways, drainage projects, flood control, reservoirs). Railroad Construction, Sewer Waterworks & Utility Construction but not limited to: (storm sewers, waterlines, gaslines). Industrial & Building site, Power Plant, Amusement Park, Athletic stadium site, Sewer and Water Plants. When the contractor furnishes the necessary underwater gear for the diver, the diver shall be paid one and one half (1 & 1/2) times the journeyman rate for the time spent in the water.

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason Statewide HevHwy

Change # : LCN01-2023ibCementHevHwy

Craft : Cement Mason Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$33.74		\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$52.76	\$69.63
Apprentice	Percent											
1st Year	70.00	\$23.62	\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$42.64	\$54.45
2nd Year	80.00	\$26.99	\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$46.01	\$59.51
3rd Year	90.00	\$30.37	\$8.50	\$7.55	\$0.65	\$0.00	\$2.25	\$0.07	\$0.00	\$0.00	\$49.39	\$64.57

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, 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 : (A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site, Heavy Construction, Airport Construction Or Railroad Construction Work, Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facilities Construction.

*For Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work, Pollution Control, Sewer Plant, Waste & Water Plant, Water Treatment Facility Construction work in the following Counties: Ashtabula, Cuyahoga, Fulton, Geauga, Hancock, Henry, Lake, Lucas, Putnam and Wood Counties, those counties will use the Cement Mason Statewide Heavy Highway Exhibit B District 1 Wage Rate.

Details :

This rate replaces the previous Cement Mason Heavy Highway Statewide Rates (Exhibit A and Exhibit B rates), except for Cement Mason Statewide Heavy Highway Exhibit B Dist 1. sks

Prevailing Wage Rate Skilled Crafts

Name of Union: Cement Mason & Plasterers Local 132 (Portsmouth)

Change # : LCN01-2023ibLoc132

Craft : Cement Effective Date : 06/01/2023 Last Posted : 05/31/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Cement Mason	\$34.22		\$9.30	\$7.35	\$1.55	\$0.00	\$6.00	\$0.00	\$0.00	\$0.00	\$58.42	\$75.53
Plasterers	\$34.22		\$9.30	\$7.35	\$1.55	\$0.00	\$6.00	\$0.00	\$0.00	\$0.00	\$58.42	\$75.53
Apprentice	Percent											
1st year	70.00	\$23.95	\$9.30	\$7.35	\$1.55	\$0.00	\$6.00	\$0.00	\$0.00	\$0.00	\$48.15	\$60.13
2nd year	80.00	\$27.38	\$9.30	\$7.35	\$1.55	\$0.00	\$6.00	\$0.00	\$0.00	\$0.00	\$51.58	\$65.26
3rd year	90.00	\$30.80	\$9.30	\$7.35	\$1.55	\$0.00	\$6.00	\$0.00	\$0.00	\$0.00	\$55.00	\$70.40

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, GALLIA, JACKSON, LAWRENCE, PIKE, SCIOTO

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: **Electrical Local 575 Inside**

Change # : LCN01-2024ibLoc575in

Craft : Electrical Effective Date : 01/10/2024 Last Posted : 01/10/2024

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrician	\$37.00		\$11.15	\$1.11	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$59.27	\$77.77
50 to 100 feet	\$40.70		\$11.15	\$1.22	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$63.08	\$83.43
100 to 200 feet	\$55.50		\$11.15	\$1.67	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$78.33	\$106.08
200 feet & over	\$74.00		\$11.15	\$2.22	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$97.38	\$134.38
Apprentice	Percent											
1st period 0-1000 hrs	45.00	\$16.65	\$11.15	\$0.50	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.35	\$37.67
2nd period 1001-2000 hrs	50.00	\$18.50	\$11.15	\$0.56	\$1.05	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$31.26	\$40.51
3rd period 2001-3500 hrs	55.00	\$20.35	\$11.15	\$0.61	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$42.12	\$52.30
4th period 3501-5000 hrs	65.00	\$24.05	\$11.15	\$0.72	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$45.93	\$57.96
5th period 5001-6000 hrs	75.00	\$27.75	\$11.15	\$0.83	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$49.74	\$63.61
6th period 6501 - 8000 hrs	85.00	\$31.45	\$11.15	\$0.94	\$1.05	\$0.00	\$8.96	\$0.00	\$0.00	\$0.00	\$53.55	\$69.27

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

Journeymen Apprentices
1 to 3 to 2
4 to 6 to 4
7 to 9 to 6 etc.

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, FAYETTE, HIGHLAND, HOCKING, JACKSON, PICKAWAY*, PIKE, ROSS, SCIOTO, VINTON*

Special Jurisdictional Note : In Pickaway County the following townships: Deer Creek ,Perry, Pickaway, Salt Creek and Wayne.

In Vinton County the following townships: Clinton, Eagle, Elk, Harrison, Jackson, Richland, and Swan.

Details :

When workmen are required to work fifty feet or higher from the ground or floor level from trusses, stacks, tanks, boatswain chair, scaffolds, platforms, buckets, J.L.G. lifts with platforms (motorized or manual), catwalks, floors & decks where there are openings and the workmen are subject to a direct fall, the workmen's straight time rate shall be as shown above.

No high rates are required for work performed from bucket trucks or high lifts, on permanent decking, floors and catwalks with permanent hand rails, 40' extension ladders originating from ground level or lighting poles and towers where work is performed on permanent catwalks with handrails.

Prevailing Wage Rate

Skilled Crafts

Name of Union: Electrical Local 575 Inside Lt Commercial Central

Change # : LCN01-2014fbLoc575in

Craft : Electrical 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												
Electrician	\$31.70		\$7.20	\$0.95	\$0.40	\$0.00	\$5.31	\$0.00	\$0.00	\$0.10	\$45.66	\$61.51
50 to 100 feet	\$33.76		\$7.05	\$1.01	\$0.40	\$0.00	\$4.96	\$0.00	\$0.00	\$0.00	\$47.18	\$64.06
1000 to 200 feet	\$46.04		\$7.05	\$1.38	\$0.40	\$0.00	\$4.96	\$0.00	\$0.00	\$0.00	\$59.83	\$82.85
200 feet & over	\$61.38		\$7.05	\$1.84	\$0.40	\$0.00	\$4.96	\$0.00	\$0.00	\$0.00	\$75.63	\$106.32
CE-3 12,001-14,000 Hrs	\$24.37		\$4.28	\$0.73	\$0.45	\$0.00	\$0.73	\$0.00	\$0.00	\$0.10	\$30.66	\$42.85
CE-2 10,001-12,000 Hrs	\$19.15		\$4.28	\$0.57	\$0.45	\$0.00	\$0.57	\$0.00	\$0.00	\$0.10	\$25.12	\$34.70
CE-1 8,001-10,000 Hrs	\$17.41		\$4.28	\$0.52	\$0.45	\$0.00	\$0.52	\$0.00	\$0.00	\$0.10	\$23.28	\$31.99
CW-4 6,001-8,000 Hrs	\$15.67		\$4.28	\$0.47	\$0.45	\$0.00	\$0.47	\$0.00	\$0.00	\$0.10	\$21.44	\$29.27
CW-3 4,001-6,000 Hrs	\$13.93		\$4.28	\$0.42	\$0.45	\$0.00	\$0.42	\$0.00	\$0.00	\$0.10	\$19.60	\$26.57
CW-2 2,001-4,000 Hrs	\$12.19		\$4.28	\$0.37	\$0.45	\$0.00	\$0.37	\$0.00	\$0.00	\$0.10	\$17.76	\$23.86
CW-1 0-2,000 Hrs	\$12.19		\$4.28	\$0.37	\$0.45	\$0.00	\$0.37	\$0.00	\$0.00	\$0.10	\$17.76	\$23.86
Apprentice	Percent											
1st period 0-1000 hrs	40.00	\$12.68	\$7.20	\$0.38	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.10	\$20.76	\$27.10
2nd period 1001-2000 hrs	45.00	\$14.27	\$7.20	\$0.43	\$0.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.10	\$22.39	\$29.53
3rd period 2001-3500 hrs	55.00	\$17.44	\$7.20	\$0.52	\$0.40	\$0.00	\$5.31	\$0.00	\$0.00	\$0.10	\$30.96	\$39.68

4th period 3501- 5000 hrs	65.00	\$20.60	\$7.20	\$0.62	\$0.40	\$0.00	\$5.31	\$0.00	\$0.00	\$0.10	\$34.24	\$44.54
5th period 5001- 6000 hrs	74.70	\$23.68	\$7.20	\$0.71	\$0.40	\$0.00	\$5.31	\$0.00	\$0.00	\$0.10	\$37.40	\$49.24
6th period 6501 - 8000 hrs	85.00	\$26.94	\$7.20	\$0.81	\$0.40	\$0.00	\$5.31	\$0.00	\$0.00	\$0.10	\$40.77	\$54.24

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

Journeyman Apprentices
1 to 3 to 2
4 to 6 to 4
7 to 9 to 6 etc.

Jurisdiction (* denotes special jurisdictional note) :

JACKSON, PIKE, SCIOTO, VINTON*

Construction Electrician and Construction Wireman

Ratio

There shall be a minimum ratio of one inside Journeyman Wireman 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 Vinton County the following townships: Clinton, Eagle, Elk, Harrison, Jackson, Richland, and Swan.

Scope of Work for the Lt. Commercial Rate is as follows: Small medical clinics, stand-alone doctor and dentist offices with up to 600 amp services (not attached to a hospital), Gas Stations/Convenience stores, fast food restaurants, franchised chain restaurants including independent bars and taverns, places of worship, funeral homes, Nursing homes, assisted living facilities and day-care facilities under 15,000 sq ft, small office, retail/wholesale facilities under 15,000 sq ft with less than 10 units attached, storage units, car washes, express hotels and motels (4 stories or less) without conference or restaurant facilities, residential units (subject to Davis Bacon Rates) small stand-alone manufacturing facilities when free standing and not part of a larger facility (less than 15,000 sq ft) solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with the 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 of one replacement of existing fixtures.

Details :

When workmen are required to work fifty feet or higher from the ground or floor level from trusses, stacks, tanks, boatswain chair, scaffolds, platforms, buckets, J.L.G. lifts with platforms (motorized or manual), catwalks, floors & decks where there are openings and the workmen are subject to a direct fall, the workmen's straight time rate shall be as shown above.

No high rates are required for work performed from bucket trucks or high lifts, on permanent decking, floors and catwalks with permanent hand rails, 40' extension ladders originating from ground level or lighting poles and towers where work is performed on permanent catwalks with handrails.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 575 Voice Data Video

Change # : LCN01-2022sksLoc575VDV

Craft : Voice Data Video Effective Date : 06/29/2022 Last Posted : 06/29/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Electrical Installer Technician B	\$28.70		\$9.60	\$4.25	\$0.70	\$0.00	\$0.00	\$0.67	\$0.00	\$0.00	\$43.92	\$58.27
Installer Technician A	\$29.95		\$9.60	\$4.28	\$0.70	\$0.00	\$0.00	\$0.70	\$0.00	\$0.00	\$45.23	\$60.21
Cable Puller	\$14.35		\$9.60	\$3.81	\$0.70	\$0.00	\$0.00	\$0.34	\$0.00	\$0.00	\$28.80	\$35.98
Apprentices	Percent											
1st Period 0-1000 hours	55.00	\$15.79	\$9.60	\$3.86	\$0.70	\$0.00	\$0.00	\$0.37	\$0.00	\$0.00	\$30.31	\$38.21
2nd Period 1001-2000 hours	60.00	\$17.22	\$9.60	\$3.90	\$0.70	\$0.00	\$0.00	\$0.40	\$0.00	\$0.00	\$31.82	\$40.43
3rd Period 2001-3000 hours	65.00	\$18.66	\$9.60	\$3.94	\$0.70	\$0.00	\$0.00	\$0.43	\$0.00	\$0.00	\$33.33	\$42.65
4th Period 3001-4000 hours	70.00	\$20.09	\$9.60	\$3.99	\$0.70	\$0.00	\$0.00	\$0.47	\$0.00	\$0.00	\$34.85	\$44.90
5th Period 4001-5000 hours	75.00	\$21.52	\$9.60	\$4.03	\$0.70	\$0.00	\$0.00	\$0.50	\$0.00	\$0.00	\$36.36	\$47.12
6th Period 5001-6000 hours	80.00	\$22.96	\$9.60	\$4.07	\$0.70	\$0.00	\$0.00	\$0.53	\$0.00	\$0.00	\$37.86	\$49.34

Special Calculation Note : Other is for Holiday Pay.

Ratio :

1 Apprentice to 1 Installer Technician

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, FAYETTE, HIGHLAND, HOCKING, JACKSON, PICKAWAY*, PIKE, ROSS, SCIOTO, VINTON*

Special Jurisdictional Note : In Pickaway County the following townships: Deer Creek, Perry, Pickaway, Salt Creek and Wayne. In Vinton County the following townships: Clinton, Eagle, Elk, Harrison, Jackson, Richland and Swan.

Details :

An employee who is required to wear an electronic device after hours will receive an additional 1.00 per hour for all hours worked.

HOLIDAYS: Memorial Day, 4th of July, Labor Day, Thanksgiving Day, Christmas Day, New Years Day.

The following work is EXCLUDED from the Teledata Technician work scope:

- Installation of computer systems in industrial applications such as assembly lines, robotics, computer controller manufacturing systems.
- Installation of conduit &/or raceways shall be installed by Inside Wireman . On sites where there is no Inside Wireman employed, the Teledata Technician may install raceway, or conduit not greater than 10 foot.
- Fire Alarm work is excluded on all new construction sites or wherever the fire alarm system is installed in conduit
- All HVAC control work.

TECHNICIAN (A) is a Technician B who holds a current Technician Certification from BICSI (Building Industry Consulting Service International, Inc.)

CABLE PULLERS are for the installation of cable from one termination point to another.

Prevailing Wage Rate Skilled Crafts

Name of Union: Electrical Local 71 High Tension Pipe Type Cable

Change # : LCN01-2023ibLoc7

Craft : Lineman Effective Date : 03/01/2023 Last Posted : 03/01/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$48.59	\$7.00	\$1.46	\$0.49	\$0.00	\$11.66	\$0.75	\$0.00	\$0.00	\$69.95	\$94.24
Certified Lineman Welder	\$48.59	\$7.00	\$1.46	\$0.49	\$0.00	\$11.66	\$0.75	\$0.00	\$0.00	\$69.95	\$94.24
Certified Cable Splicer	\$48.59	\$7.00	\$1.46	\$0.49	\$0.00	\$11.66	\$0.75	\$0.00	\$0.00	\$69.95	\$94.24
Operator A	\$43.54	\$7.00	\$1.31	\$0.44	\$0.00	\$10.45	\$0.75	\$0.00	\$0.00	\$63.49	\$85.26
Operator B	\$38.54	\$7.00	\$1.16	\$0.39	\$0.00	\$9.25	\$0.75	\$0.00	\$0.00	\$57.09	\$76.36
Operator C	\$30.97	\$7.00	\$0.93	\$0.31	\$0.00	\$7.43	\$0.75	\$0.00	\$0.00	\$47.39	\$62.88
Groundman 0-12 months Exp	\$24.30	\$7.00	\$0.73	\$0.24	\$0.00	\$5.83	\$0.75	\$0.00	\$0.00	\$38.85	\$51.00
Groundman 0-12 months Exp w/CDL	\$26.72	\$7.00	\$0.80	\$0.27	\$0.00	\$6.41	\$0.75	\$0.00	\$0.00	\$41.95	\$55.31
Groundman 1 yr or more	\$26.72	\$7.00	\$0.80	\$0.27	\$0.00	\$6.41	\$0.75	\$0.00	\$0.00	\$41.95	\$55.31
Groundman 1 yr or more w/CDL	\$31.58	\$7.00	\$0.95	\$0.32	\$0.00	\$7.58	\$0.75	\$0.00	\$0.00	\$48.18	\$63.97
Equipment Mechanic A	\$38.54	\$7.00	\$1.16	\$0.39	\$0.00	\$9.25	\$0.75	\$0.00	\$0.00	\$57.09	\$76.36
Equipment Mechanic B	\$34.75	\$7.00	\$1.04	\$0.35	\$0.00	\$8.34	\$0.75	\$0.00	\$0.00	\$52.23	\$69.60
Equipment Mechanic C	\$30.97	\$7.00	\$0.93	\$0.31	\$0.00	\$7.43	\$0.75	\$0.00	\$0.00	\$47.39	\$62.88

X-Ray Technician	\$48.59	\$7.00	\$1.46	\$0.49	\$0.00	\$11.66	\$0.75	\$0.00	\$0.00	\$69.95	\$94.24	
Apprentice	Percent											
1st 1000 hrs	60.00	\$29.15	\$7.00	\$0.87	\$0.29	\$0.00	\$7.00	\$0.75	\$0.00	\$0.00	\$45.06	\$59.64
2nd 1000 hrs	65.00	\$31.58	\$7.00	\$0.95	\$0.32	\$0.00	\$7.58	\$0.75	\$0.00	\$0.00	\$48.18	\$63.98
3rd 1000 hrs	70.00	\$34.01	\$7.00	\$1.02	\$0.34	\$0.00	\$8.16	\$0.75	\$0.00	\$0.00	\$51.28	\$68.29
4th 1000 hrs	75.00	\$36.44	\$7.00	\$1.09	\$0.36	\$0.00	\$8.75	\$0.75	\$0.00	\$0.00	\$54.39	\$72.61
5th 1000 hrs	80.00	\$38.87	\$7.00	\$1.17	\$0.39	\$0.00	\$9.33	\$0.75	\$0.00	\$0.00	\$57.51	\$76.95
6th 1000 hrs	85.00	\$41.30	\$7.00	\$1.24	\$0.41	\$0.00	\$9.91	\$0.75	\$0.00	\$0.00	\$60.61	\$81.26
7th 1000 hrs	90.00	\$43.73	\$7.00	\$1.31	\$0.44	\$0.00	\$10.50	\$0.75	\$0.00	\$0.00	\$63.73	\$85.60

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 than 25 tons and less than 45 tons).

Operator "B"

Cranes (greater than 6 tons and up to 25 tons), Backhoes, Road Tractor, Dozer up to D-5, Pressure Digger- wheeled or tracked, all Tension wire Stringing equipment.

Operator "C"

Trench, Backhoe, Riding type vibratory Compactor, Ground Rod Driver, Boom Truck (6 ton & below), Skid Steer Loaders, Material Handler.

*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 Utility Power

Change # : LCN01-2023ibLoc7

Craft : Lineman Effective Date : 03/01/2023 Last Posted : 03/01/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$46.03	\$7.00	\$1.38	\$0.46	\$0.00	\$11.05	\$0.75	\$0.00	\$0.00	\$66.67	\$89.68
Substation Technician	\$46.03	\$7.00	\$1.38	\$0.46	\$0.00	\$11.05	\$0.75	\$0.00	\$0.00	\$66.67	\$89.68
Cable Splicer	\$48.21	\$7.00	\$1.45	\$0.48	\$0.00	\$11.57	\$0.75	\$0.00	\$0.00	\$69.46	\$93.56
Operator A	\$41.26	\$7.00	\$1.24	\$0.41	\$0.00	\$9.90	\$0.75	\$0.00	\$0.00	\$60.56	\$81.19
Operator B	\$36.47	\$7.00	\$1.09	\$0.36	\$0.00	\$8.75	\$0.75	\$0.00	\$0.00	\$54.42	\$72.65
Operator C	\$29.28	\$7.00	\$0.88	\$0.29	\$0.00	\$7.03	\$0.75	\$0.00	\$0.00	\$45.23	\$59.87
Groundman 0-12 months Exp	\$23.02	\$7.00	\$0.69	\$0.23	\$0.00	\$5.52	\$0.75	\$0.00	\$0.00	\$37.21	\$48.72
Groundman 0-12 months Exp w/CDL	\$25.32	\$7.00	\$0.76	\$0.25	\$0.00	\$6.08	\$0.75	\$0.00	\$0.00	\$40.16	\$52.82
Groundman 1 yr or more	\$25.32	\$7.00	\$0.76	\$0.25	\$0.00	\$6.08	\$0.75	\$0.00	\$0.00	\$40.16	\$52.82
Groundman 1 yr or more w/CDL	\$29.92	\$7.00	\$0.90	\$0.30	\$0.00	\$7.18	\$0.75	\$0.00	\$0.00	\$46.05	\$61.01
Equipment Mechanic A	\$36.47	\$7.00	\$1.09	\$0.36	\$0.00	\$8.75	\$0.75	\$0.00	\$0.00	\$54.42	\$72.65
Equipment Mechanic B	\$32.88	\$7.00	\$0.99	\$0.33	\$0.00	\$7.89	\$0.75	\$0.00	\$0.00	\$49.84	\$66.28
Equipment Mechanic C	\$29.28	\$7.00	\$0.88	\$0.29	\$0.00	\$7.03	\$0.75	\$0.00	\$0.00	\$45.23	\$59.87
Line Truck w/uuger	\$32.28	\$7.00	\$0.97	\$0.32	\$0.00	\$7.75	\$0.75	\$0.00	\$0.00	\$49.07	\$65.21
Apprentice	Percent										

1st 1000 hrs	60.00	\$27.62	\$7.00	\$0.83	\$0.28	\$0.00	\$6.63	\$0.75	\$0.00	\$0.00	\$43.11	\$56.92
2nd 1000 hrs	65.00	\$29.92	\$7.00	\$0.90	\$0.30	\$0.00	\$7.18	\$0.75	\$0.00	\$0.00	\$46.05	\$61.01
3rd 1000 hrs	70.00	\$32.22	\$7.00	\$0.97	\$0.32	\$0.00	\$7.73	\$0.75	\$0.00	\$0.00	\$48.99	\$65.10
4th 1000 hrs	75.00	\$34.52	\$7.00	\$1.04	\$0.35	\$0.00	\$8.28	\$0.75	\$0.00	\$0.00	\$51.94	\$69.20
5th 1000 hrs	80.00	\$36.82	\$7.00	\$1.10	\$0.37	\$0.00	\$8.84	\$0.75	\$0.00	\$0.00	\$54.88	\$73.30
6th 1000 hrs	85.00	\$39.13	\$7.00	\$1.17	\$0.39	\$0.00	\$9.39	\$0.75	\$0.00	\$0.00	\$57.83	\$77.39
7th 1000 hrs	90.00	\$41.43	\$7.00	\$1.24	\$0.41	\$0.00	\$9.94	\$0.75	\$0.00	\$0.00	\$60.77	\$81.48

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 Outside (Central OH Chapter)**

Change # : LCN01-2023ibLoc71CentralOhio

Craft : Lineman Effective Date : 03/01/2023 Last Posted : 03/01/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	\$43.02	\$7.00	\$1.29	\$0.43	\$0.00	\$8.60	\$0.56	\$0.00	\$0.00	\$60.90	\$82.41
Traffic Signal & Lighting Journeyman	\$41.43	\$7.00	\$1.24	\$0.41	\$0.00	\$8.29	\$0.56	\$0.00	\$0.00	\$58.93	\$79.64
Equipment Operator	\$37.78	\$7.00	\$1.13	\$0.38	\$0.00	\$7.56	\$0.56	\$0.00	\$0.00	\$54.41	\$73.30
Groundman 0-12 months (W/O CDL)	\$22.91	\$7.00	\$0.69	\$0.23	\$0.00	\$4.58	\$0.56	\$0.00	\$0.00	\$35.97	\$47.42
Groundman 0-12 Months W/CDL	\$25.03	\$7.00	\$0.75	\$0.25	\$0.00	\$5.01	\$0.56	\$0.00	\$0.00	\$38.60	\$51.12
Groundman greater than 1 Year W/CDL	\$27.71	\$7.00	\$0.81	\$0.28	\$0.00	\$5.43	\$0.56	\$0.00	\$0.00	\$41.79	\$55.65
Traffic Signal Apprentices											
1st 1,000 hours	\$24.86	\$7.00	\$0.75	\$0.25	\$0.00	\$4.97	\$0.56	\$0.00	\$0.00	\$38.39	\$50.82
2nd 1,000 hours	\$26.93	\$7.00	\$0.81	\$0.27	\$0.00	\$5.39	\$0.56	\$0.00	\$0.00	\$40.96	\$54.43
3rd 1,000 hours	\$29.00	\$7.00	\$0.87	\$0.29	\$0.00	\$5.80	\$0.56	\$0.00	\$0.00	\$43.52	\$58.02
4th 1,000 hours	\$31.07	\$7.00	\$0.93	\$0.31	\$0.00	\$6.21	\$0.56	\$0.00	\$0.00	\$46.08	\$61.62
5th 1,000 hours	\$33.14	\$7.00	\$0.99	\$0.33	\$0.00	\$6.63	\$0.56	\$0.00	\$0.00	\$48.65	\$65.22
6th 1,000 hours	\$37.29	\$7.00	\$1.12	\$0.37	\$0.00	\$7.76	\$0.56	\$0.00	\$0.00	\$54.10	\$72.75

Apprentice Lineman	Percent											
1st 1,000 Hours	60.00	\$25.81	\$7.00	\$0.77	\$0.26	\$0.00	\$5.16	\$0.56	\$0.00	\$0.00	\$39.56	\$52.47
2nd 1,000 Hours	65.00	\$27.96	\$7.00	\$0.84	\$0.28	\$0.00	\$5.59	\$0.56	\$0.00	\$0.00	\$42.23	\$56.21
3rd 1,000 Hours	70.00	\$30.11	\$7.00	\$0.90	\$0.30	\$0.00	\$6.02	\$0.56	\$0.00	\$0.00	\$44.89	\$59.95
4th 1,000 Hours	75.00	\$32.27	\$7.00	\$0.97	\$0.32	\$0.00	\$6.54	\$0.56	\$0.00	\$0.00	\$47.66	\$63.79
5th 1,000 Hours	80.00	\$34.42	\$7.00	\$1.03	\$0.34	\$0.00	\$6.88	\$0.56	\$0.00	\$0.00	\$50.23	\$67.43
6th 1,000 Hours	85.00	\$36.57	\$7.00	\$1.10	\$0.37	\$0.00	\$7.31	\$0.56	\$0.00	\$0.00	\$52.91	\$71.19
7th 1,000 Hours	90.00	\$38.72	\$7.00	\$1.16	\$0.39	\$0.00	\$7.74	\$0.56	\$0.00	\$0.00	\$55.57	\$74.93

Special Calculation Note : Other is Safety & Education Fund (\$0.06) and HRA (\$0.50).

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 Voice Data Video Outside

Change # : LCN-2024ibLoc71VDV

Craft : Voice Data Video Effective Date : 01/10/2024 Last Posted : 01/10/2024

	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	\$33.86		\$7.00	\$1.02	\$0.00	\$0.00	\$1.69	\$0.00	\$0.00	\$0.00	\$43.57	\$60.50
Installer Technician II	\$31.93		\$7.00	\$0.96	\$0.00	\$0.00	\$1.60	\$0.00	\$0.00	\$0.00	\$41.49	\$57.46
Installer Repairman	\$31.93		\$7.00	\$0.96	\$0.00	\$0.00	\$1.60	\$0.00	\$0.00	\$0.00	\$41.49	\$57.46
Equipment Operator II	\$23.97		\$7.00	\$0.72	\$0.00	\$0.00	\$1.20	\$0.00	\$0.00	\$0.00	\$32.89	\$44.88
Cable Splicer	\$33.86		\$7.00	\$1.02	\$0.00	\$0.00	\$1.69	\$0.00	\$0.00	\$0.00	\$43.57	\$60.50
Ground Driver W/CDL	\$16.06		\$7.00	\$0.48	\$0.00	\$0.00	\$0.80	\$0.00	\$0.00	\$0.00	\$24.34	\$32.37
Groundman	\$14.04		\$7.00	\$0.42	\$0.00	\$0.00	\$0.70	\$0.00	\$0.00	\$0.00	\$22.16	\$29.18
Trainees	Percent											
Trainee F	50.00	\$16.93	\$7.00	\$0.51	\$0.00	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$25.29	\$33.75
Trainee E	58.00	\$19.64	\$7.00	\$0.59	\$0.00	\$0.98	\$0.00	\$0.00	\$0.00	\$0.00	\$28.21	\$38.03
Trainee D	66.00	\$22.35	\$7.00	\$0.67	\$0.00	\$1.12	\$0.00	\$0.00	\$0.00	\$0.00	\$31.14	\$42.31
Trainee C	74.00	\$25.06	\$7.00	\$0.75	\$0.00	\$1.25	\$0.00	\$0.00	\$0.00	\$0.00	\$34.06	\$46.58
Trainee B	82.00	\$27.77	\$7.00	\$0.83	\$0.00	\$1.39	\$0.00	\$0.00	\$0.00	\$0.00	\$36.99	\$50.87
Trainee A	90.00	\$30.47	\$7.00	\$0.91	\$0.00	\$1.52	\$0.00	\$0.00	\$0.00	\$0.00	\$39.90	\$55.14

Special Calculation Note :

Ratio :

1 Trainee to 1 Journeyman

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE,

FAIRFIELD, FAYETTE, FRANKLIN, GALLIA,
GEAUGA, GREENE, GUERNSEY, HAMILTON,
HARRISON, HIGHLAND, HOCKING, HOLMES,
JACKSON, JEFFERSON, KNOX, LAKE,
LAWRENCE, LICKING, LOGAN, LORAIN,
MADISON, MAHONING, MARION, MEDINA,
MEIGS, MERCER, MIAMI, MONROE,
MONTGOMERY, MORGAN, MORROW,
MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE,
PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO,
SHELBY, STARK, SUMMIT, TRUMBULL,
TUSCARAWAS, UNION, VINTON, WARREN,
WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

Cable Splicer: Inspect and test lines or cables, analyze results, and evaluate transmission characteristics. Cover conductors with insulation or seal splices with moisture-proof covering. Install, splice, test, and repair cables using tools or mechanical equipment. This will include the splicing of fiber.

Installer Technician I: Must know all aspects of telephone and cable work. This is to include aerial, underground, and manhole work. Must know how to climb and run bucket. Must have all the tools required to perform these tasks. Must be able to be responsible for the safety of the crew at all times. Must also have CDL license and have at least 5 years experience.

Installer Repairman: Perform tasks of repairing, installing, and testing phone and CATV services.

Installer Technician II: Have at least three years of telephone and CATV experience. Must have the knowledge of underground, aerial, and manhole work. Must be able to climb and operate bucket. Must have CDL. Must have all tools needed to perform these tasks.

Equipment Operator II: Able to operate a digger derrick or bucket truck. Have at least 3 years of experience and must have a valid CDL license.

Groundman W/CDL: Must have a valid CDL license and be able to perform tasks such as: climbing poles, pulling down guys, making up material, and getting appropriate tools for the job. Must have at least 5 year's experience.

Groundman: Perform tasks such as: climbing poles, pulling down guys, making up material, and getting appropriate tools for the job. Experience 0-5 years.

Prevailing Wage Rate Skilled Crafts

Name of Union: Elevator Local 11

Change # : LCN01-2020fbLoc11

Craft : Elevator Effective Date : 01/05/2021 Last Posted : 01/05/2021

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Elevator Mechanic	\$48.82		\$15.88	\$10.46	\$0.64	\$3.91	\$8.85	\$1.56	\$0.00	\$0.00	\$90.12	\$114.53
Probationary Apprentice	50.00	\$24.41	\$0.00	\$0.00	\$0.00	\$1.46	\$0.00	\$0.78	\$0.00	\$0.00	\$26.65	\$38.86
1st year	55.00	\$26.85	\$15.88	\$10.46	\$0.64	\$1.61	\$8.85	\$0.86	\$0.00	\$0.00	\$65.15	\$78.58
2nd year	65.00	\$31.73	\$15.88	\$10.46	\$0.64	\$1.90	\$8.85	\$1.02	\$0.00	\$0.00	\$70.48	\$86.35
3rd year	70.00	\$34.17	\$15.88	\$10.46	\$0.64	\$2.05	\$8.85	\$1.09	\$0.00	\$0.00	\$73.14	\$90.23
4th year	80.00	\$39.06	\$15.88	\$10.46	\$0.64	\$2.34	\$8.85	\$1.25	\$0.00	\$0.00	\$78.48	\$98.00
Helper	70.00	\$34.17	\$15.88	\$10.46	\$0.64	\$2.05	\$8.85	\$1.09	\$0.00	\$0.00	\$73.14	\$90.23
Assistant Mechanic	80.00	\$39.06	\$15.88	\$10.46	\$0.64	\$2.34	\$8.85	\$1.25	\$0.00	\$0.00	\$78.48	\$98.00

Special Calculation Note : Other is Holiday Pay. Vacation calculated at 6%.

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.

- 1 Journeymen to 1 Apprentice
- 2 Journeymen to 5 Apprentice
- 3 Journeymen to 6 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, BROWN, BUTLER, CLERMONT, CLINTON, DARKE, GREENE, HAMILTON, HIGHLAND, MIAMI, MONTGOMERY, PREBLE, SCIOTO, SHELBY, WARREN

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Glazier Local 1195 Zone A

Change # : LCN02-2023ibLoc1195 ZoneA

Craft : Glazier Effective Date : 12/07/2023 Last Posted : 12/07/2023

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Glazier	\$32.47		\$0.00	\$8.66	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$45.84	\$62.07
Apprentice	Percent											
1st 0-1000 hrs	60.00	\$19.48	\$0.00	\$3.68	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$27.87	\$37.61
2nd 1001-2000 hrs	70.00	\$22.73	\$0.00	\$3.68	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$31.12	\$42.48
3rd 2001-3000 hrs	75.00	\$24.35	\$0.00	\$3.68	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$32.74	\$44.92
4th 3001-4000 hrs	80.00	\$25.98	\$0.00	\$3.68	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$34.37	\$47.35
5th 4001-5000 hrs	85.00	\$27.60	\$0.00	\$3.68	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$35.99	\$49.79
6th 5001-6000 hrs	90.00	\$29.22	\$0.00	\$3.68	\$0.95	\$0.00	\$3.64	\$0.12	\$0.00	\$0.00	\$37.61	\$52.22

Special Calculation Note : Other is Drug Education

Ratio :

1 Journeymen to 1 Apprentice
3 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

GALLIA, LAWRENCE, MEIGS, SCIOTO

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Ironworker Local 769

Change # : LCN01-2023ibLoc769

Craft : Ironworker Effective Date : 07/19/2023 Last Posted : 07/19/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Ironworker	\$36.16		\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$64.62	\$82.70
Structural, Reinforcing, Ornamental, Fence, Pre-Cast, Welder, Metal Bldg Erector Rigger	\$36.16		\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$64.62	\$82.70
Apprentice	Percent											
1st 6 months	50.00	\$18.08	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$46.54	\$55.58
2nd 6 months is 1st year	60.00	\$21.70	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$50.16	\$61.00
3rd 6 months	65.02	\$23.51	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$51.97	\$63.73
4th 6 months is 2nd year	70.02	\$25.32	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$53.78	\$66.44
5th 6 months	75.00	\$27.12	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$55.58	\$69.14
6th 6 months is 3rd year	80.00	\$28.93	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$57.39	\$71.85
7th 6 months	85.02	\$30.74	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$59.20	\$74.57
8th 6 months is 4th year	90.02	\$32.55	\$9.59	\$9.50	\$1.25	\$0.00	\$8.00	\$0.12	\$0.00	\$0.00	\$61.01	\$77.29

Special Calculation Note : Other is drug and safety.

Ratio :

4 Journeymen to 1 Apprentice
Ornamental Work 1 Apprentice to 2 Journeymen
On spinning cables on suspension bridges
1 Apprentice to 1 Journeyman per job

Jurisdiction (* denotes special jurisdictional note) :

ADAMS*, GALLIA, JACKSON*, LAWRENCE,
PIKE*, SCIOTO

Special Jurisdictional Note : Adams County: Townships included are Spriggs, Liberty, Oliver, Meigs, Jefferson, Monroe, Green, Brush Creek, Tiffin, Franklin. Jackson County: Townships included are Scioto, Hamilton, Madison, Lick, Franklin, Jefferson, Bloomfield. Pike County: Townships included are Campcreek, Union, Scioto, Marion.

Details :

TRAVEL PAY

ZONE 1 BY COUNTY (0-10 MILES) NO BASE RATE INCREASE

ZONE 2 FROM UNION HALL (10-50 MILES) \$0.40 added to Base Rate PLUS FULL FRINGES

ZONE 3 FROM UNION HALL (50 MILES AND OVER) \$2.00 added to base rate PLUS FULL FRINGES

Reinforcing Iron Work Classification including but not limited to:all work in connection with field fabrication, handling (including loading and off loading), sorting, cutting, bending, hoisting, placing, burning, welding and tying or securing of all materials used to reinforce concrete: all sizes and types of reinforcing steel (including composite material) wire mesh. hoops and stirrups, including mechanical splicing on reinforcing steel bar. The unloading, hoisting, placing and tying of all post tensioning cables. Also wrecking of cores, wedging of the tendons, stressing, cutting and repairing. Structural Iron Work Classification but not limited to: field fabrication, all loading to and including erecting, rigging, assembly, dismantling, placing, temporary and permanent securing by any means of all structural iron, steel ornamental lead, bronze, brass, copper, aluminum, glass all ferrous and non ferrous metal and composite material, pre-cast prestressed and post-stressed concrete structures. Bridges & bridge rails, bridge viaducts, bucks bulkheads, bumper and bumper post, canopies and unistrut canopies,corrugated ferrous and non ferrous sheets when attached to steel frames, columns, beams, bar-joists, trusses, grinders,roof decking, electrical supports, elevator cars, elevator fronts and enclosures,erection of steel towers, flag poles, gymnasium equipment, stadium and arena seating, jail cell work, jail cell beds, benches, bunks, chairs, tables, mirrors, jail cell access doors, rigging and installation of machinery and equipment (erecting, aligning, anchoring and dismantling, erection and dismantling of tower cranes, gantries, material and personnel hoists, tanks, hoppers and conveyors. All pre-engineered metal buildings and their entirety including siding, roofing, gutters, downspouts, and erection of all. Ornamental Iron Work but not limited to: all work in connection with field fabrication, handling, including loading/off loading, sorting, cutting, fastening, anchoring, bending, hoisting, placing, burning, welding, and tying, dismantling of all materials used in miscellaneous iron, for stairs, hand railings, door, fence, windows, curtain wall, erection and welding of all metal sash, architectural and ornamental treatments but not necessarily limited to all sizes and types of ornamental, steel, iron, lead, bronze, brass, copper, aluminum, all ferrous and non ferrous metals and composite materials. Fence Erector Iron Worker Classification but not limited to: All work in connection with the field fabrication and erection of chain link fence, which includes but not limited to the loading and of the fence fabric and posts also the installation of the above.

Prevailing Wage Rate Skilled Crafts

Name of Union: Labor HevHwy 3

Change # : LCN01-2023ibLocalHevHwy3

Craft : Laborer Group 1 Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$34.62		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.42	\$65.73
Group 2	\$34.79		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.59	\$65.98
Group 3	\$35.12		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.92	\$66.48
Group 4	\$35.57		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$49.37	\$67.15
Watch Person	\$27.35		\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.15	\$54.83
Apprentice	Percent											
0-1000 hrs	60.00	\$20.77	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$34.57	\$44.96
1001-2000 hrs	70.00	\$24.23	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$38.03	\$50.15
2001-3000 hrs	80.00	\$27.70	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$41.50	\$55.34
3001-4000 hrs	90.00	\$31.16	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$44.96	\$60.54
More than 4000 hrs	100.00	\$34.62	\$8.20	\$4.05	\$0.45	\$0.00	\$1.00	\$0.00	\$0.10	\$0.00	\$48.42	\$65.73

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), Yarnier, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

Group 4

Miner, Welder, Gunitite 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 83

Change # : LCN01-2022sksLoc83

Craft : Laborer Effective Date : 06/15/2022 Last Posted : 06/15/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Laborer Group 1	\$38.23		\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$50.57	\$69.69
Group 2	\$38.48		\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$50.82	\$70.06
Group 3	\$38.63		\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$50.97	\$70.29
Apprentice	Percent											
0-1000 hrs	59.99	\$22.93	\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$35.27	\$46.74
1001-2000 hrs	70.00	\$26.76	\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$39.10	\$52.48
2001-3000 hrs	80.00	\$30.58	\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$42.92	\$58.22
3001-4000 hrs	89.99	\$34.40	\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$46.74	\$63.94
More than 4000 hrs	100.00	\$38.23	\$7.70	\$3.95	\$0.40	\$0.00	\$0.00	\$0.00	\$0.15	\$0.14	\$50.57	\$69.69

Special Calculation Note : Other is LEAD-CAP

Ratio :

1 Journeymen to 1 Apprentice
4 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, GALLIA, HIGHLAND,
JACKSON, LAWRENCE, MEIGS, PIKE, ROSS,
SCIOTO, VINTON

Special Jurisdictional Note :

Details :

Group 1

Building & Construction Laborers, Signalman, Plaster Tenders, Carpenter Tenders, Mason Tenders, Mortar Mixers, Pipe Layers, Bottom Man, Sheeting & Shoring Men, Watchmen & Waterboy.

Group 2

Air & Machine Driver Tool Operators, Hand Spikers, Chain Saws, Powered Concrete Buggies, Asphalt Rakers & Smoothers, Form Setters (Street & Highway) Burning & Cutting Torches

Group 3

**Gunnite Machine Operator, Gunnite Nozzle Man, Powder Men & Blasters, Miners (Tunnel & Caisson)
Muckers (Tunnel & Caisson).**

All Hazardous & High Work performed in excess of 25 ft. above solid base shall pay .25 per hour above Classification.

In the erection, alteration, repair or demolition of reinforced concrete chimneys, masonry chimneys, silos, and furnaces, the following rates shall apply:

25- 100 ft. \$1.00 per hour/over base rate 150-200 ft. \$1.50 per hour/over base rate
100-150 ft. \$1.25 per hour/over base rate 200-250 ft. \$1.75 per hour/over base rate
Over 250 ft. \$2.00 per hour/over base rate

Prevailing Wage Rate Skilled Crafts

Name of Union: Operating Engineers - Building Local 18 - Zone III

Change # : LCN01-2023ibLoc18zone3

Craft : Operating Engineer Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Operator Group A	\$41.49		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.74	\$78.48
Operator Group B	\$41.37		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.62	\$78.30
Operator Group C	\$40.33		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.58	\$76.74
Operator Group D	\$39.15		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$55.40	\$74.97
Operator Group E	\$33.69		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.94	\$66.78
Master Mechanic	\$41.74		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.99	\$78.86
Cranes & Mobile Concrete Pumps 150'-180'	\$41.99		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$58.24	\$79.23
Cranes & Mobile Concrete Pumps 180'-249'	\$42.49		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$58.74	\$79.98
Cranes & Mobile Concrete Pumps 249' and over	\$42.74		\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$58.99	\$80.36
Apprentice	Percent											
1st Year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.00	\$47.37
2nd Year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$41.14	\$53.59
3rd Year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$45.29	\$59.81
4th Year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.44	\$66.04
Field Mechanic Trainee												

1st Year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$37.00	\$47.37
2nd Year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$41.14	\$53.59
3rd Year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$45.29	\$59.81
4th Year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.44	\$66.04

Special Calculation Note : Other: Education & Safety \$0.09; *Misc is National Training

Ratio :

For every (3) Operating Engineer Journeymen employed by the company there may be employed (1) Registered Apprentice or trainee Engineer through the referral when they are available. An apprentice, while employed as part of a crew per Article VIII, paragraph 78, will not be subject to the apprenticeship ratios in this collective bargaining agreement

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WYANDOT

Special Jurisdictional Note :

Details :

Note: There will be a 10% increase for the apprentices on top of the percentages listed above provided they are operating mobile equipment. 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 (Inserter/Remover); Rotovator (Lime-Soil Stabilizer); Submersible Pumps (4" and over discharge); Switch & Tie Tampers (without lifting and aligning device); Trench Machines (24" and under); Utility Operators.

Group D - Backfillers and Tampers; Ballast Re-locator; Batch Plant Operators; Bar and Joint Installing Machines; Bull Floats; Burlap and Curing Machines; Clefplanes; Compressors, on building construction; Concrete Mixers, more than one bag capacity; Concrete Mixers, one bag capacity (side loaders); All Concrete Pumps (without boom with 4" or smaller system); Concrete Spreader; Conveyors, used for handling building materials; Crushers; Deckhands; Drum Fireman (in asphalt plants); Farm type tractors pulling attachments; Finishing Machines; Form Trenchers; Generators: Gunitite 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 # : LCN01-2023ibLoc18hevhwyl

Craft : Operating Engineer Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)		
Classification											
Operator Class A	\$41.49	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.74	\$78.48
Operator Class B	\$41.37	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.62	\$78.30
Operator Class C	\$40.33	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$56.58	\$76.74
Operator Class D	\$39.15	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$55.40	\$74.97
Operator Class E	\$33.69	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$49.94	\$66.78
Master Mechanic	\$41.74	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.00	\$0.05	\$57.99	\$78.86
Apprentice	Percent										
1st Year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$37.00	\$47.37
2nd Year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$41.14	\$53.59
3rd Year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$45.29	\$59.81
4th Year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$49.44	\$66.04
Field Mech Trainee Class 2											
1st year	50.00	\$20.75	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$37.00	\$47.37
2nd year	60.00	\$24.89	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$41.14	\$53.59
3rd year	70.00	\$29.04	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$45.29	\$59.81
4th year	80.00	\$33.19	\$9.01	\$6.25	\$0.85	\$0.00	\$0.00	\$0.09	\$0.05	\$49.44	\$66.04

Special Calculation Note : Other: Education & Safety Fund is \$0.09 per hour. *Misc is National Training

Ratio :

For every (3) Operating Engineer Journeymen employed by the company, there may be employed (1) Registered Apprentice or Trainee Engineer through the

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT,

referral when they are available. An Apprentice, while employed as part of a crew per Article VIII, paragraph 65 will not be subject to the apprenticeship ratios in this collective bargaining agreement

CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LUCAS, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

**Apprentices will receive a 10% increase on top of the percentages listed above provided they are operating mobile equipment. 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 555 Commercial

Change # : LCN02-2023ibLoc555Com

Craft : Painter Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Brush Roll	\$27.43		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.14	\$61.86
Wallcovering	\$27.43		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.14	\$61.86
Sandblasting, Spray, Steam Cleaning, Pressure Washing	\$28.56		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.27	\$63.55
Floor Sanding, Power Tools, Epoxy & Two Component Materials	\$28.56		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.27	\$63.55
Lead Abatement, Hazardous Waste & Toxic Materials	\$28.56		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.27	\$63.55
Apprentices	Percent											
1st Year	50.00	\$13.72	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.43	\$41.28
2nd Year	65.00	\$17.83	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.54	\$47.45
3rd Year	75.00	\$20.57	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.28	\$51.57
4th Year	90.00	\$24.69	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.40	\$57.74

Special Calculation Note : Apprentices shall be paid percentage of the above classification.

Ratio :

3 Journeymen to 1 Apprentice
1 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, HIGHLAND, JACKSON, PIKE, SCIOTO

Special Jurisdictional Note :

Details :

Commercial work:all interior & exterior work on multiple dwelling units (5 units or more). High Rise Apartments, building with an elevator, schools,libraries,stores,churches,public buildings,amusement parks,real-estate developments, commercial garages, & instructions. Industrial work:all work on industrial plants,processing plants,storage tanks,warehouses,skeleton structures & bridges.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 555 Commercial

Change # : LCN03-2023ibLoc555Co

Craft : Drywall Finisher Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Drywall Finisher	\$27.43		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.14	\$61.86
Apprentices												
	Percent											
1st Year	50.00	\$13.72	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$34.43	\$41.28
2nd Year	65.00	\$17.83	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$38.54	\$47.45
3rd Year	75.00	\$20.57	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$41.28	\$51.57
4th Year	90.00	\$24.69	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.40	\$57.74

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice
1 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, HIGHLAND, JACKSON, PIKE, SCIOTO

Special Jurisdictional Note :

Details :

Commercial work:all interior & exterior work on multiple dwelling units (5 units or more). High Rise Apartments, building with an elevator, schools,libraries,stores,churches,public buildings,amusement parks,real-estate developments, commercial garages, & instructions. Industrial work:all work on industrial plants,processing plants,storage tanks,warehouses,skeleton structures & bridges.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 555 HevHwy

Change # : LCN03-2023ibLoc555

Craft : Painter Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Bridge & Stacks	\$38.63		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$59.34	\$78.65
Painter Bridge Equipment Tender	\$32.28		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.99	\$69.13
Containment Builder	\$32.18		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$52.89	\$68.98
Bridge Quality Control	\$23.75		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.46	\$56.34
Apprentice	Percent											
1st Year	50.01	\$19.32	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$40.03	\$49.69
2nd Year	65.00	\$25.11	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.82	\$58.37
3rd Year	75.00	\$28.97	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.68	\$64.17
4th Year	90.00	\$34.77	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$55.48	\$72.86

Special Calculation Note : APPRENTICES BASED ON % OF EACH CLASS ABOVE PLUS FULL FRINGES

Ratio :

3 Journeyman to 1 Apprentice
1 Journeyman to 1 Apprentice Thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, HIGHLAND, JACKSON, PIKE, SCIOTO

Special Jurisdictional Note :

Details :

Industrial work shall embrace all work on industrial plants, processing plants, storage tanks, warehouses, skeleton structures and bridges.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 555 Industrial

Change # : LCN03-2023ibLoc555Ind

Craft : Painter Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Brush Roll	\$33.81		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.52	\$71.42
Wallcovering	\$33.81		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.52	\$71.42
Sandblasting, Spray, Steam Cleaning, Pressure Washing	\$35.44		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.15	\$73.87
Bulk & Storage Tanks of 25,000 Gallons or more Capacity, Epoxy & Two Component Materials	\$35.44		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.15	\$73.87
Lead Abatement, Hazardous Waste & Toxic Materials	\$35.44		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$56.15	\$73.87
Apprentices	Percent											
1st Year	50.00	\$16.91	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.62	\$46.07
2nd Year	65.00	\$21.98	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.69	\$53.67
3rd Year	75.00	\$25.36	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.07	\$58.75
4th Year	90.00	\$30.43	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.14	\$66.35

Special Calculation Note : Apprentices shall be paid percentage of the above classifications.

Ratio :

3 Journeymen to 1 Apprentice
1 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, HIGHLAND, JACKSON, PIKE, SCIOTO

Special Jurisdictional Note :

Details :

Commercial work:all interior & exterior work on multiple dwelling units (5 units or more). High Rise Apartments, building with an elevator, schools,libraries,stores,churches,public buildings,amusement parks,real-estate developments, commercial garages, & instructions. Industrial work:all work on industrial plants,processing plants,storage tanks,warehouses,skeleton structures & bridges.

Prevailing Wage Rate Skilled Crafts

Name of Union: Painter Local 555 Industrial

Change # : LCN03-2023ibLoc555Ind

Craft : Drywall Finisher Effective Date : 11/22/2023 Last Posted : 11/22/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Painter Drywall Finisher	\$33.81		\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$54.52	\$71.42
Apprentices												
	Percent											
1s Year	50.00	\$16.91	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.62	\$46.07
2nd Year	65.00	\$21.98	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.69	\$53.67
3rd Year	75.00	\$25.36	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.07	\$58.75
4th Year	90.00	\$30.43	\$6.20	\$13.99	\$0.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.14	\$66.35

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time.

Ratio :

3 Journeymen to 1 Apprentice
1 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, HIGHLAND, JACKSON, PIKE, SCIOTO

Special Jurisdictional Note :

Details :

Commercial work:all interior & exterior work on multiple dwelling units (5 units or more). High Rise Apartments, building with an elevator, schools,libraries,stores,churches,publc buildings,amusement parks,real-estate developments, commercial garages, & instructions. Industrial work:all work on industrial plants,processing plants,storage tanks,warehouses,skeleton structures & bridges.

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 639 Zone 2 Sign

Change # : LCN01-2023ibLoc639

Craft : Painter Effective Date : 03/22/2023 Last Posted : 03/22/2023

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Sign Journeyman Tech/Team Leader Class A	\$25.28	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.68	\$0.00	\$0.00	\$27.87	\$40.51
Painter Sign Journeyman Tech/Team Leader Class B	\$25.28	\$1.70	\$0.21	\$0.00	\$0.49	\$0.00	\$0.68	\$0.00	\$0.00	\$28.36	\$41.00
Painter Sign Journeyman Tech/Team Leader Class C	\$25.28	\$1.70	\$0.21	\$0.00	\$0.97	\$0.00	\$0.68	\$0.00	\$0.00	\$28.84	\$41.48
Painter Sign Journeyman Tech/Team Leader Class D	\$25.28	\$1.70	\$0.21	\$0.00	\$1.46	\$0.00	\$0.68	\$0.00	\$0.00	\$29.33	\$41.97
Sign Journeyman Class A	\$25.00	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.67	\$0.00	\$0.00	\$27.58	\$40.08
Sign Journeyman Class B	\$25.00	\$1.70	\$0.21	\$0.00	\$0.48	\$0.00	\$0.67	\$0.00	\$0.00	\$28.06	\$40.56
Sign Journeyman Class C	\$25.00	\$1.70	\$0.21	\$0.00	\$0.96	\$0.00	\$0.67	\$0.00	\$0.00	\$28.54	\$41.04
Sign Journeyman Class D	\$25.00	\$1.70	\$0.21	\$0.00	\$1.44	\$0.00	\$0.67	\$0.00	\$0.00	\$29.02	\$41.52
Tech Sign Fabrication/ Erector Class A	\$19.67	\$1.70	\$0.21	\$0.00	\$0.00	\$0.00	\$0.53	\$0.00	\$0.00	\$22.11	\$31.95

Tech Sign Fabrication/ Erector Class B	\$19.67	\$1.70	\$0.21	\$0.00	\$0.38	\$0.00	\$0.53	\$0.00	\$0.00	\$22.49	\$32.33
Tech Sign Fabrication/ Erector Class C	\$19.67	\$1.70	\$0.21	\$0.00	\$0.76	\$0.00	\$0.53	\$0.00	\$0.00	\$22.87	\$32.71
Tech Sign Fabrication/ Erector Class D	\$19.67	\$1.70	\$0.21	\$0.00	\$1.13	\$0.00	\$0.53	\$0.00	\$0.00	\$23.24	\$33.08

Special Calculation Note : Other is for paid holidays.

Ratio :

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, AUGLAIZE, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GREENE, HAMILTON, HANCOCK, HARDIN, HENRY, HIGHLAND, HOLMES, HURON, JACKSON, KNOX, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MERCER, MIAMI, MONTGOMERY, MORROW, MUSKINGUM, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PREBLE, PUTNAM, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, WARREN, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

- Class A: less that 1 year.
- Class B: 1-3 years.
- Class C; 3-10 years.
- Class D: More than 10 years.

Prevailing Wage Rate Skilled Crafts

Name of Union: Plumber Pipefitter Local 577 Commercial

Change # : LCN01-2023ibLoc577Com

Craft : Plumber/Pipefitter Effective Date : 06/14/2023 Last Posted : 06/14/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Plumber Pipefitter	\$36.22		\$9.50	\$13.68	\$1.20	\$0.00	\$2.00	\$0.22	\$0.00	\$0.00	\$62.82	\$80.93
Apprentice	Percent											
1st Year	50.00	\$18.11	\$9.50	\$0.00	\$1.20	\$0.00	\$0.00	\$1.68	\$0.00	\$0.22	\$30.71	\$39.77
2nd Year	55.00	\$19.92	\$9.50	\$5.40	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$39.92	\$49.88
3rd Year	60.00	\$21.73	\$9.50	\$6.00	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$42.33	\$53.20
4th Year	65.00	\$23.54	\$9.50	\$7.80	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$45.94	\$57.71
5th Year	85.00	\$30.79	\$9.50	\$10.20	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$55.59	\$70.98

Special Calculation Note : Other ITF and Safety. for Journeymen and Other for Apprentice is National Pension, \$0.12 is Safety, and \$0.10 is ITF

Ratio :

- Jobsite:
 1 Journeyman to 2 Apprentices
 2 Journeymen to 3 Apprentices
 3 Journeymen to 3 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, GALLIA, HIGHLAND,
 JACKSON, LAWRENCE, PIKE, SCIOTO, VINTON

Special Jurisdictional Note :

Details :

Commercial work is defined as all work that does no fall under the industrial description

Prevailing Wage Rate Skilled Crafts

Name of Union: Plumber Pipefitter Local 577 Industrial

Change # : LCN01-2023ibLoc577Ind

Craft : Plumber/Pipefitter Effective Date : 06/14/2023 Last Posted : 06/14/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Plumber Pipefitter	\$39.98		\$9.50	\$13.68	\$1.20	\$0.00	\$2.00	\$0.22	\$0.00	\$0.00	\$66.58	\$86.57
Apprentice	Percent											
1st Year	50.00	\$19.99	\$9.50	\$0.00	\$1.20	\$0.00	\$0.00	\$1.68	\$0.00	\$0.22	\$32.59	\$42.59
2nd Year	55.00	\$21.99	\$9.50	\$5.40	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$41.99	\$52.98
3rd Year	60.00	\$23.99	\$9.50	\$6.00	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$44.59	\$56.58
4th Year	65.00	\$25.99	\$9.50	\$7.80	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$48.39	\$61.38
5th Year	85.00	\$33.98	\$9.50	\$10.20	\$1.20	\$0.00	\$2.00	\$1.68	\$0.00	\$0.22	\$58.78	\$75.77

Special Calculation Note : Other ITF and Safety. for Journeymen and Other for Apprentice is National Pension, \$0.12 is Safety, and \$0.10 is ITF

Ratio :

8 Journeymen to 2 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, GALLIA, HIGHLAND, JACKSON, LAWRENCE, PIKE, SCIOTO, VINTON

Special Jurisdictional Note :

Details :

Industrial Work shall be defined as, manufacturing plants, testing facilities, enrichment plants, compressor stations, power generating plants, coke plants, co-generation plants, chemical plants, incinerators, and steel mills.

Prevailing Wage Rate Skilled Crafts

Name of Union: **Roofer Local 185**

Change # : LCN01-2022ibLoc185

Craft : Roofer Effective Date : 12/28/2022 Last Posted : 12/28/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Roofer	\$30.25		\$7.46	\$4.15	\$0.13	\$0.00	\$0.00	\$2.26	\$0.00	\$0.00	\$44.25	\$59.38
Apprentice	Percent											
1st 1000 hours	50.00	\$15.13	\$7.46	\$1.00	\$0.00	\$0.00	\$0.00	\$2.27	\$0.00	\$0.00	\$25.85	\$33.42
2nd 1000 hours	60.00	\$18.15	\$7.46	\$1.25	\$0.00	\$0.00	\$0.00	\$2.27	\$0.00	\$0.00	\$29.13	\$38.21
3rd 1000 hours	70.01	\$21.18	\$7.46	\$1.75	\$0.00	\$0.00	\$0.00	\$2.27	\$0.00	\$0.00	\$32.66	\$43.25
4th 1000 hours	75.00	\$22.69	\$7.46	\$4.15	\$0.00	\$0.00	\$0.00	\$2.27	\$0.00	\$0.00	\$36.57	\$47.91
5th 1000 hours	80.00	\$24.20	\$7.46	\$4.15	\$0.00	\$0.00	\$0.00	\$2.27	\$0.00	\$0.00	\$38.08	\$50.18
6th 1000 hours	90.00	\$27.23	\$7.46	\$4.15	\$0.00	\$0.00	\$0.00	\$2.27	\$0.00	\$0.00	\$41.11	\$54.72

Special Calculation Note : No special calculations for this skilled craft wage rate are required at this time. Other is Supplemental Pension

Ratio :

3 Journeymen to 2 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, GALLIA, JACKSON, LAWRENCE, PIKE, SCIOTO, VINTON

Special Jurisdictional Note :

Details :

Prevailing Wage Rate Skilled Crafts

Name of Union: Sheet Metal Local 24 Columbus

Change # : LCN01-2022sksLoc24Col

Craft : Sheet Metal Worker Effective Date : 08/12/2022 Last Posted : 08/12/2022

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)			MISC (*)
Classification												
Sheet Metal Worker	\$33.53		\$9.55	\$12.28	\$1.06	\$0.00	\$3.82	\$0.00	\$0.00	\$0.00	\$60.24	\$77.00
Apprentice	Percent											
1 st Year A	50.02	\$16.77	\$7.82	\$1.88	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$27.32	\$35.71
1st Year B	55.00	\$18.44	\$7.82	\$2.07	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$29.18	\$38.40
2nd Year A	60.00	\$20.12	\$8.89	\$7.80	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$37.66	\$47.72
2nd Year B	65.02	\$21.80	\$8.95	\$7.98	\$0.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$39.58	\$50.48
3rd Year A	70.00	\$23.47	\$9.10	\$8.59	\$1.06	\$0.00	\$2.67	\$0.00	\$0.00	\$0.00	\$44.89	\$56.63
3rd Year B	75.00	\$25.15	\$9.17	\$9.21	\$1.06	\$0.00	\$2.87	\$0.00	\$0.00	\$0.00	\$47.46	\$60.03
4th Year A	80.00	\$26.82	\$9.25	\$9.83	\$1.06	\$0.00	\$3.06	\$0.00	\$0.00	\$0.00	\$50.02	\$63.44
4th Year B	85.00	\$28.50	\$9.32	\$10.44	\$1.06	\$0.00	\$3.25	\$0.00	\$0.00	\$0.00	\$52.57	\$66.82

Special Calculation Note : No special calculations for this skilled craft wage rate required at this time.

Ratio :

- 1 Journeyman to 1 Apprentice
- 2-8 Journeymen to 2 Apprentices
- 9-11 Journeymen to 3 Apprentices
- 12-14 Journeymen to 4 Apprentices
- 15-17 Journeymen to 5 Apprentices
- 18-20 Journeymen to 6 Apprentices
- 21-23 Journeyman to 7 Apprentices
- 24-26 Journeyman to 8 Apprentices
- 27-29 Journeymen to 9 Apprentices
- 30-32 Journeymen to 10 Apprentices
- 33-35 Journeymen to 11 Apprentices
- 36-38 Journeymen to 12 Apprentices
- 39-41 Journeymen to 13 Apprentices
- 42-44 Journeymen to 14 Apprentices
- 45-47 Journeymen to 15 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ATHENS, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GUERNSEY, HOCKING, JACKSON, KNOX, LAWRENCE, LICKING, MADISON, MARION, MEIGS, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, ROSS, SCIOTO, UNION, VINTON

48-50 Journeymen to 16 Apprentices
and so on

Special Jurisdictional Note :

Details :

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												
CILASS 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 # : LCN01-2023ibBldgHevHwy

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	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; drivers on tandems; truck sweepers (not to include power sweepers & scrubbers)	\$31.24		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.39	\$64.01
Apprentice	Percent											
First 6 months	80.00	\$24.99	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.14	\$54.64
7-12 months	85.00	\$26.55	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.70	\$56.98
13-18 months	90.00	\$28.12	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.27	\$59.32
19-24 months	95.00	\$29.68	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.83	\$61.67
25-30 months	100.00	\$31.24	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.39	\$64.01

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,
COSHOCOTON, 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 :

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 # : LCN01-2023ibBldgHevHwy

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	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; 5 Axle & Over; Belly Dumps; Low boys - Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation; Truck Mechanics (when needed)	\$31.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.64
Apprentice		Percent										
First 6 months	80.00	\$25.33	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$42.48	\$55.14
7-12 months	85.00	\$26.91	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.06	\$57.52
13-18 months	90.00	\$28.49	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$45.64	\$59.89
19-24 months	95.00	\$30.08	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$47.23	\$62.27
25-30 months	100.00	\$31.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.81	\$64.64

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 :

Prevailing Wage Rate Skilled Crafts

**Name of Union: Truck Driver Bldg & HevHwy Class 3
Locals 20,40,92,92b,100,175,284,438,377,637,908,957**

Change # : LCN01-2023ibBldgHevHwy3

Craft : Truck Driver Effective Date : 05/01/2023 Last Posted : 04/26/2023

	BHR		Fringe Benefit Payments					Irrevocable Fund		Total PWR	Overtime Rate	
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 3 Articulated Dump Trucks; Ridge-Frame Rock Trucks; Distributor Trucks)	\$32.66		\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.81	\$66.14
Apprentice	Percent											
First 6 months	80.00	\$26.13	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$43.28	\$56.34
7-12 months	85.00	\$27.76	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$44.91	\$58.79
13-18 months	90.00	\$29.39	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$46.54	\$61.24
19-24 months	95.00	\$31.03	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$48.18	\$63.69
25-30 months	100.00	\$32.66	\$7.75	\$9.20	\$0.20	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$49.81	\$66.14

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 :

SECTION 008900 - PERMITS

ARTICLE 1 PERMITS OBTAINED BY THE OWNER

1.01 The following permits were obtained by the Owner related to this Project:

A. OEPA – Division of Drinking and Ground Waters Permit to Install

1.02 The above permits have been included as attachments to this section or will be provided to the Contractor in advance of issuance of the Notice to Proceed for this Project. Contractor shall comply with all provisions of these permits and shall be responsible for notifications as required by these permits.

ARTICLE 2 PERMITS OBTAINED BY CONTRACTOR

2.01 Contractor shall obtain all other permits required for the Work.

2.02 Any permits required for dewatering operations shall be obtained and paid for by Contractor.

END OF SECTION

SECTION 009113 - ADDENDA

1. All Addenda issued by the OWNER/ENGINEER shall be inserted into this section.
2. If Addenda are issued, all prospective bidders are hereby notified that the Addenda forms a part of the Bidding and Contract documents and modifies the original bidding and contract documents issued. Acknowledge receipt of this addendum in the space provided in the bid proposal section of the specifications. Failure to do so may subject the bidder to disqualification.

END OF SECTION

Work Change Directive

No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

You are directed to proceed promptly with the following change(s):

Item No.	Description

Attachments (list documents supporting change):

Purpose for Work Change Directive:

- Authorization for Work described herein to proceed on the basis of Cost of the Work due to:
 - Nonagreement on pricing of proposed change.
 - Necessity to expedite Work described herein prior to agreeing to changes on Contract Price and Contract Time.

Estimated change in Contract Price and Contract Times:

Contract Price \$ _____ (increase/decrease) Contract Time _____ days (increase/decrease)

If the change involves an increase, the estimated amounts are not to be exceeded without further authorization.

Recommended for Approval by Engineer:	Date
Authorized for Owner by:	Date
Accepted for Contractor by:	Date
Approved by Funding Agency (if applicable):	Date:

Change Order No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:	Date of Contract:	
Contractor:	Engineer's Project No.:	

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments: (List documents supporting change):

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$ _____	Original Contract Times: <input type="checkbox"/> Working days <input type="checkbox"/> Calendar days Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: Substantial completion (days): _____ Ready for final payment (days): _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED: By: _____ Engineer (Authorized Signature) Date: _____	ACCEPTED: By: _____ Owner (Authorized Signature) Date: _____	ACCEPTED: By: _____ Contractor (Authorized Signature) Date: _____
Approved by Funding Agency (if applicable): _____		Date: _____

Change Order Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

SECTION 011100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Project Scope and Location
- B. Owner Supplied Products
- C. Contractor Use of Site
- D. Existing Services, Structures and Underground Facilities
- E. Protection of Work and Improvements
- F. Schedules and Work Sequence
- G. Owner Occupancy

1.2 PROJECT SCOPE AND LOCATION

- A. The project generally consists of the construction of a 506,627 gallon (64'Ø x 21'), AWWA D103, glass-lined, bolted steel, ground storage tank and related appurtenances.
- B. The project site is located along High St. / Twp. Rd. 476, Minford, Scioto County, Ohio.
- C. Contractor shall provide all items, articles, materials, operations or methods mentioned or scheduled on the Drawings or herein specified: including all labor, supervision, equipment, incidentals, taxes and permits necessary to complete the Work as described within the Contract Documents. Contractor shall install all items provided by Owner as mentioned or scheduled on the Drawings or herein specified.

1.3 OWNER SUPPLIED PRODUCTS

- A. Owner will complete project components as outlined on the Drawings.

1.4 CONTRACTOR USE OF SITE

- A. Access to Site: Limited to Contractor.
- B. Construction Operations: Easements were not obtained for this project. Contractor shall contain operations to within the rights-of-way or lands upon which the work is to be performed.

1.5 EXISTING SERVICES, STRUCTURES AND UNDERGROUND FACILITIES

- A. Should uncharted or incorrectly charted piping or other utilities be encountered during installation, notify Owner and consult with utility owner immediately for directions.
- B. Cooperate with Owner and utility companies in keeping respective services and facilities in operation and repair any damaged utilities to the satisfaction of the utility owner.
- C. Contractor shall not interrupt existing utilities serving facilities occupied and used by the Owner or others, except when permitted in writing by the Owner.
- D. Any accidental interruption of services shall be repaired immediately, including provision of temporary facilities until permanent repairs can be made.
- E. Existing underground facilities may consist of gas lines, water lines, storm sewers, and buried telephone and electric cables. The utilities shown on the Drawings are based on data furnished by the utility companies listed in the Drawings and on field observations and are believed to be reasonably accurate.
- F. Contractor shall notify the Ohio Utilities Protection Service (OUPS), (1-800-362-2764), and any other non-OUPS utility a minimum of 48 hours prior to commencing work on the project to coordinate the marking of utilities in the field. Based on information made available by the various utility companies, the companies shown in the Drawings have facilities in the area.
- G. Contractor shall proceed with caution in the excavation and preparation of the Site so the exact location of structures and Underground Facilities can be determined. Contractor shall include in Contract Price any costs for temporary or permanent relocations of such structures and Underground Facilities required to complete the Work unless specifically indicated otherwise in the Specifications.
- H. Contractor shall keep an accurate and complete record of all such structures and Underground Facilities encountered and shall provide the Owner a copy of this record. The record shall include a description of the item encountered, opinion as to condition, and adequate measurements and depths so that the item can be located in the future.
- I. Contractor shall inspect all structures and Underground Facilities for condition and soundness. Unsound conditions shall be reported to the structure or facility owner immediately after exposing. Contractor shall not proceed with the work until the structure or facility owner has been notified. Owner shall then be given time to inspect and correct, if required, the structure or Underground Facility. Contractor shall make claim under the provisions of Articles 11 and 12 of the General Conditions should the Contractor feel a price or time adjustment is justified.

- J. Any additional costs incurred because of the failure of the Contractor to report the condition of any and all existing structure or Underground Facility encountered shall be paid by the Contractor.
- K. Whenever the Engineer feels it is necessary to explore and excavate to determine the location of existing structures and Underground Facilities, the Contractor shall make explorations and excavations for such purposes. If Contractor is required to perform additional work in making the explorations and excavations, extra compensation will be allowed as provided for in the General Conditions.

1.6 PROTECTION OF WORK AND IMPROVEMENTS

- A. Contractor shall protect the property of the Owner, existing improvements, and the Work installed by the Contractor and others from abuse, damage, dust, debris, and other objectionable materials resulting from construction activities.
- B. Contractor shall provide suitable covers, partitions, or other dust and fume containment devices to suit construction operations.
- C. Contractor shall keep property, existing improvements and the Work, including structures, mains, fittings and accessories free from dirt and foreign matter at all times.
- D. Contractor shall provide temporary plugging of openings, holes and pipe ends that are existing or that the Contractor has installed.
- E. Property, improvements and Work damaged by Contractor shall be repaired or replaced by Contractor to the satisfaction of the Owner.

1.7 SCHEDULES AND WORK SEQUENCE

- A. Contractor shall provide schedules for performance of the Work in accordance with the provision set forth within the General Conditions. The schedule(s) shall detail all phases of construction to completion with milestones and associated dates. The schedule(s) shall be presented in a format acceptable to the Owner and Engineer.

1.8 OWNER OCCUPANCY

- A. Owner shall have access to site throughout the term of the project.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 011100

SECTION 013100 - COORDINATION, FIELD ENGINEERING AND MEETINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. Coordination – General.
- B. Coordination with Owner’s Operations.
- C. Field engineering.
- D. Progress meetings.
- E. Pre-installation conferences.

1.2 COORDINATION - GENERAL

- A. Contractor shall coordinate scheduling, submittals, and work of the various sections of the work to assure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later. Refer to Section 011100 – Summary of Work for specific construction sequence.
- B. Contractor shall verify that utility requirement characteristics of operating equipment are compatible with building utilities and coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Contractor shall coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on drawings and shall follow routing shown for pipes, ducts and conduit as closely as practicable. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs.
- D. In finished areas, except as otherwise indicated, Contractor shall conceal pipes, ducts and wiring within the construction and coordinate the locations of fixtures and outlets with finish elements.
- E. Contractor shall coordinate completion and cleanup of work of separate sections in preparation for substantial completion and for portions of work designated for Owner’s occupancy.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- G. Coordinate work with other site contractors involved in the Project as indicated by the Plans and Specifications, or as directed by the Owner.

1.3 COORDINATION WITH OWNER'S OPERATIONS

- A. The Contractor shall schedule construction activities so as to keep existing Owner's roadways, utilities and facilities in operation at all times unless otherwise approved by the Owner.
- B. Temporary roadways if required to divert traffic around this work area shall be furnished, maintained and subsequently removed by the Contractor.
- C. All temporary pumping, piping or miscellaneous equipment required shall be furnished, maintained and subsequently removed by the Contractor.
- D. All proposed construction sequences, and all process shutdowns and equipment tie-ins shall be scheduled well in advance and shall occur only after being approved by the Owner.

1.4 FIELD ENGINEERING

- A. Contractor shall locate and protect property stakes, legal survey monuments, and survey control and reference points. Contractor shall pay for replacement of disturbed property stakes and legal survey monuments by a Professional Surveyor registered in the State of Ohio and acceptable to the Owner.
- B. Contractor shall provide field engineering services as required to establish elevations, lines, and levels, utilizing recognized engineering survey practices.
- C. Contractor shall be responsible for all lines, elevations, and measurements of buildings, structures, piping, utilities, and other work executed by the Contractor under the Contract. Contractor must exercise proper precaution to verify figures before laying out the work, and will be held responsible for any error resulting from their failure to exercise such precaution.

1.5 PROGRESS MEETINGS

- A. Progress meetings will be held throughout progress of the Work at intervals agreed to by the Owner, Engineer and Contractor. Interval will generally be monthly.
- B. Contractor's project manager, job superintendent, major subcontractors and suppliers shall attend as appropriate to agenda topics for each meeting. Contractor's representatives shall have authority to bind Contractor to decisions at the meetings.
- C. At the meetings the Contractor shall submit typed reports detailing the progress of the Work, compliance with submitted progress schedules and future construction plans affecting the schedule of the Work.
- D. The Engineer will prepare and distribute minutes to all attending parties.

1.6 PREINSTALLATION CONFERENCES

- A. When required in individual specification Section, convene a pre-installation conference at work site prior to commencing work of the Section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific Section.
- C. Notify Engineer a minimum of five (5) days in advance of meeting date.
- D. Review conditions of installation, preparation and installation procedures, and coordination with related work.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 013100

SECTION 013216 - PROGRESS SCHEDULES

PART 1 - GENERAL

1.1 RELATED SECTIONS

- A. Section 013300 – Submittals.

1.2 FORMAT

- A. Prepare schedules as a horizontal bar chart with separate bar for each major portion of Work or operation, identifying first workday of each week.
- B. Sequence of Listings: In the same sequence as the Bid Schedule contained within this Project Manual or the schedule of values provide for lump sum work.
- C. Scale and Spacing: To provide space for notations and revisions.
- D. Sheet Size: Minimum 8-1/2 X 11 inches. Maximum of 22" x 34". All sheets submitted shall be easily reproducible and not requiring to piece together more than 3 sheets.

1.3 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify work of separate stages, separate floors and other logically grouped activities.
- C. Provide sub-schedules to define critical portions of the entire schedule.
- D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the last day of each month.
- E. Provide separate schedule of submittal dates for shop drawings, product data, and samples, including Owner furnished products, if applicable, and Products identified under Allowances, if applicable, and dates reviewed submittals will be required from Engineer. Indicate decision dates for selection of finishes.
- F. Indicate delivery dates for Owner furnished products and Products identified under Allowances, if applicable.
- G. Coordinate content with bid schedule or schedule of values as appropriate.

1.4 REVISIONS TO SCHEDULES

- A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.

- B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- C. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect, including the effect of changes on schedules of separate contractors.

1.5 SUBMITTALS

- A. Submit Preliminary Progress Schedule in accordance with the requirements outlined in Paragraph 2.05 of the General Conditions.
- B. Submit revised Progress Schedules with each Application for Payment.

1.6 DISTRIBUTION

- A. Distribute copies of reviewed schedules to Project site file, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 013216

SECTION 013300 - SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included:

1. Whenever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards.
2. To facilitate Contractor's understanding of the design intent, procedures have been established for advanced submittal of design data and for its review or rejection by the Engineer.
3. The type of submittal requirements specified in this section include shop drawings, product data, samples and other miscellaneous work-related submittals.

B. Related work described elsewhere:

1. Additional requirements for submittals are described in other sections of these specifications. Submittals shall conform to Article 6 of the General Conditions.
2. Section 013216 – Progress Schedules
3. Section 017823 – Operation and Maintenance Manuals

1.2 IDENTIFICATION OF SUBMITTALS

A. Contractor shall completely identify each submittal and re-submittal by showing at least the following information:

1. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
2. Name and location of project and identification number.
3. Drawing number and specification section number to which the submittal applies.
4. Include the date of each submittal or re-submittal.

B. Contractor shall sequentially number submittals and shall provide a transmittal form. Include the project name, project number along with the sequential number. Re-submittals to have original submittal number with an alphabetic suffix.

C. Provide within the transmittal or via supplemental sheets a space for Contractor and Engineer review stamps. Engineer stamp requires a minimum 2-inch by 3-inch space.

1.3 GROUPING OF SUBMITTALS

A. Unless otherwise specifically permitted by the Engineer, the Contractor shall make all submittals in groups containing all associated items so that information is available for checking each when it is received.

- B. Partial submittals may be rejected as not complying with the provisions of the Contract Documents.
- C. Review will be performed on a complete submittal as received. The Engineer will not divide a submittal and take separate action on each portion.

1.4 TIMING OF SUBMITTALS

- A. Contractor shall make all submittals far enough in advance of scheduled dates of installation to provide required time for reviews, for securing necessary approval, for possible revision and re-submittal and for placing orders and securing delivery.
- B. Review of submittals by Engineer will be made and responded to within 14 calendar days after receipt of same unless additional information is required. In lieu of returning a document when supplemental information is required, a written hold notice may be issued which will suspend the review period until a response is received.
- C. If review of a submittal is dependent upon information to be provided via another submittal which has not been received, the first submittal will be held until the second submittal is received. Written notice will be provided to the Contractor regarding the hold status of the first submittal.

1.5 SHOP DRAWINGS

- A. Shop drawings include specially-prepared technical data for this project including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to a range of similar projects. Shop drawings submitted for all manufactured or fabricated items. See individual technical sections for specialized requirements.
- B. All documents shall be clear and readable.
- C. Contractor shall make all shop drawings accurately to scale and sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
- D. Shop drawings shall be checked, approved, and stamped by Contractor in accordance with the General Conditions before transmittal to Engineer for review and approval.
- E. Complete shop drawings and descriptive data shall be submitted on all manufactured or fabricated items prior to 25% completion of the work. Except as noted, six hard copies of shop drawings and descriptive data shall be submitted to Engineer for approval. Electronic submissions are not acceptable. Three copies of these will be returned to the Contractor if approved. If the shop drawings are not approved two corrected copies will be returned to the Contractor for use in resubmittal. If Contractor desires more than three approved copies, submitted quantity shall be increased accordingly.
- F. It is the Contractor's responsibility to provide other affected contractors and/or sub-contractors with copies of approved shop drawings.

- G. Shop drawings shall be submitted to the Engineer will be reviewed and stamped “Approved,” “Approved as Noted,” “Revise and Resubmit,” or “Rejected.” Contractor shall resubmit the above number of corrected shop drawings for all shop drawings stamped “Revise and Resubmit” and “Rejected” and will continue this process until shop drawings are stamped “Approved,” or “Approved as Noted.” Installation shall not proceed until shop drawings have been resubmitted and stamped “Approved,” or “Approved as Noted.”
- H. If shop drawings are stamped “Approved as Noted” or “Revise and Resubmit” and Contractor does not agree with revisions or cannot conform with revisions, fabrication shall not proceed and shop drawings shall be resubmitted with explanation of Contractor’s position.
- I. All shop drawings used for construction site activities shall bear “Approved” or “Approved as Noted” stamp of the Engineer.
- J. Arrangements may be made between the Contractor and the Engineer to provide additional copies of “Approved” shop drawings for field activity purposes.

1.6 COLORS AND PATTERNS

- A. Unless the precise color and pattern is specifically described in the Contract Documents, whenever a choice of color or pattern is available in a specified product Contractor shall submit accurate color charts and pattern charts to Engineer for Owner’s review and selection.
- B. Unless all available colors and patterns have identical wearing capabilities and are identically suited for the installation, Contractor shall completely describe the relative capabilities of each.

1.7 SAMPLES AND FIELD MOCK-UPS

- A. Contractor shall provide samples and field mock-ups where noted or specified.
- B. Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the work will be judged.
- C. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product and full range of color, texture and pattern.
- D. Samples shall have labels firmly attached, bearing the following information:
 - 1. Name of project.
 - 2. Description of product and finish.
 - 3. Name of Contractor.
 - 4. Trade name and number of product.
 - 5. Standards met by the product.

- E. Approval of samples must be obtained prior to proceeding with any work affected by material requiring sample approval.
- F. Samples, unless otherwise noted, become the property of the Owner.
- G. In situations specifically approved by the Engineer, the retained sample may be used in the construction as one of the installed items.
- H. Field mock-ups:
 - 1. Contractor shall erect field mock-ups at the project site in a location acceptable to the Owner and the Engineer.
 - 2. When accepted by the Engineer, the mock-up will become the basis for comparison of the actual work.
 - 3. Remove mock-up at conclusion of the work if it was not incorporated into the work.

1.8 PRODUCT DATA

- A. Contractor shall provide product data as required to supplement shop drawings.
- B. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by Contractor to illustrate a material, product or system for some portion of the work.
- C. Contractor shall collect required product data into one submittal for each unit of work or system.
- D. Contractor shall include manufacturer's standard printed recommendations for application and use, compliance with standards, performance characteristics, wiring and piping diagrams and controls, component parts, finishes, dimensions, required clearances, and other coordination requirements.
- E. Contractor shall mark each copy of standard printed data to identify pertinent products, models, options, and other data.
- F. Contractor shall supplement manufacturer's standard data to provide information unique to the work.
- G. Contractor shall identify within the data variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed Work.

1.9 RESUBMITTAL REQUIREMENTS

- A. Contractor shall revise and resubmit submittals as required.
- B. Shop Drawings and Product Data:

1. Revise initial drawings or data and resubmit as specified for initial submittal.
2. Itemize in a cover letter any changes which have been made other than those requested by the Engineer.

C. It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the Engineer by the second submission of a submittal item. The Owner reserves the right to withhold monies due the Contractor to cover additional costs of the Engineer's review beyond the second submittal.

1.10 MANUFACTURER'S INSTRUCTIONS

- A. Manufactured articles, materials and equipment shall be stored, commissioned, operated, applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer, unless specified to the contrary.
- B. Whenever specifications call for work to be performed, or materials to be installed in accordance with the manufacturer's printed instructions or directions, Contractor shall furnish copies as required for shop drawings of those instructions or directions to Engineer before installing the material or performing the work.
- C. Contractor shall identify with the submittal any conflicts between manufacturers' instructions and Contract Documents.

1.11 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Engineer for review.
- B. Contractor shall furnish copies as required for shop drawings of those certificates to Engineer before installing the material or performing the work.
- C. Certificates shall indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.
- D. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 013300

SECTION 014100 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. OSHA Requirements
- B. Roadway Limits

1.2 OSHA REQUIREMENTS

- A. All work, including site safety, equipment, materials, and fabricated items provided under the Contract, shall comply with the provisions of the "Occupational Safety and Health Act" (OSHA), and all other applicable federal, state, county and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirements shall be followed. Job site safety shall be the sole responsibility of the Contractor.
- B. The Contractor's failure to thoroughly familiarize himself with the aforementioned safety provisions shall not relieve him from compliance with the obligations and penalties set forth herein.

1.3 ROADWAY LIMITS

- A. Contractor shall comply with posted roadway weigh restrictions including any seasonal weight restrictions established by the governing highway authority.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 014300

SECTION 014300 - FIELD ENGINEERING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Survey and field engineering.
- B. Quality control.
- C. Submittals.
- D. Project record documents.

1.2 QUALITY ASSURANCE

- A. Employ a Professional Surveyor registered in the State of Ohio and acceptable to Owner, to perform survey work of this section.
- B. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

1.3 SUBMITTALS FOR REVIEW

- A. Submit name, address, and telephone number of Surveyor before starting work.
- B. On request, submit documentation verifying accuracy of survey work.
- C. Submit a certificate signed by the Professional Surveyor, that the elevations and locations of the Work are in conformance with Contract Documents.

1.4 PROJECT RECORD DOCUMENTS

- A. Maintain a complete and accurate log of control and survey work as it progresses. The project record documents shall be available at every progress meeting for verification that the actual work is being properly recorded.
- B. Submit Record Documents under provisions of Section 017800.

1.5 EXAMINATION

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Engineer of any discrepancies discovered.

1.6 SURVEY REFERENCE POINTS

- A. Contractor to locate and protect survey control and reference points.

- B. Control datum for survey that is indicated on Drawings.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Engineer the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.7 SURVEY REQUIREMENTS

- A. Provide field survey services. Utilize recognized survey practices.
- B. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, and ground floor elevations.
 - 4. All other proposed work as shown on the Drawings.
- C. Periodically verify layouts by same means.

1.8 SURVEYS FOR MEASUREMENT AND PAYMENT

- A. Perform surveys to determine quantities of unit cost, including control surveys to establish measurement reference lines at request of Owner or Engineer. Notify Owner and Engineer prior to starting work.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 014300

SECTION 014500 - QUALITY CONTROL

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance and control of installation.
- B. References.
- C. Tolerances.
- D. Manufacturers' field services and reports.
- E. Manufacturer's certificates.
- F. Testing services.

1.2 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Contractor shall monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Contractor shall comply fully with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Contractor shall comply with specified standards as a minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Work shall be performed by persons qualified to produce workmanship of specified quality.
- F. Contractor shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.3 REFERENCES

- A. Conform to reference standard by date of issue current on date of Contract Documents.
- B. Obtain copies of standards when required by Contract Documents.
- C. Should specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

- D. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.4 TOLERANCES

- A. Contractor shall monitor tolerance control of installed products to produce acceptable work and shall not permit tolerances to accumulate.
- B. Contractor shall comply with manufacturer's tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Contractor shall adjust products to appropriate dimensions; position before securing products in place.

1.5 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections or when requested by Engineer, Contractor shall require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions of surfaces and installation, and quality of workmanship.
- B. Contractor shall submit qualifications of observer to Engineer 30 days in advance of required observations.
- C. Contractor shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer' written instructions.
- D. Contractor shall submit report in duplicate within 30 days of observation to Engineer for information.

1.6 MANUFACTURERS' CERTIFICATES

- A. When required by specified sections, submit three copies of manufacturer's certificates that certify the products meet or exceed specified requirements.

1.7 TESTING SERVICES

- A. When required by specified sections, Contractor shall appoint, employ and pay for specified services of an independent firm to perform testing.
- B. The independent firm will perform tests and other services specified in individual specification sections and as required by the Engineer.
- C. Testing and source quality control may occur on or off the project site. Perform offsite testing as required by the Engineer or the Owner.

- D. Reports will be submitted by the independent firm to the Engineer and Contractor indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
 - 1. Notify Engineer and independent firm 24 hours prior to expected time for operations requiring services.
 - 2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
- F. Testing does not relieve Contractor to perform Work to contract requirements.
- G. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions of the Engineer. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Sum/Price.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 014500

SECTION 015000 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included:

1. Temporary utilities.
2. Barriers.
3. Tree removal.
4. Contractor office and storage shed(s).
5. Engineer's field office.
6. Protection of installed work.
7. Temporary support facilities.
8. Removal of utilities, facilities, and controls.
9. Dust control.
10. Water, erosion and sediment control.
11. Noise control.
12. Traffic control.
13. Site security.
14. Site cleanup.

B. Contractor shall arrange for and provide temporary facilities as specified herein and as required for proper and expeditious prosecution of the Work.

C. Contractor shall pay all costs, except as otherwise specified, until final acceptance of the Work unless Owner makes arrangements for use of completed portions of the Work after substantial completion in accordance with the provisions of the General Conditions.

D. Contractor shall make all temporary connections to utilities and services in locations acceptable to Owner and local authorities having appropriate jurisdiction.

1. Furnish all necessary labor and materials.
2. Make all installations in a manner subject to the acceptance of such authorities and Owner.
3. Maintain such connections.
4. Remove temporary installation and connection when no longer required.
5. Restore services and sources of supply to proper operating conditions.

1.2 TEMPORARY UTILITIES

A. Temporary Electricity

1. Arrange for and provide for all temporary electrical service required for the project. Provide for all temporary drops required by the work.
2. All work shall comply with all local, state and federal requirements. Include lock-

out tag-out procedures and devices as necessary.

B. Temporary Lighting

1. Provide lighting as required of the various trades and the work being performed.

C. Temporary Sanitary Facilities

1. Provide and maintain required facilities and enclosures.
2. Provide sufficient number for number of workmen and women employed. Locate near work areas. Perform regular maintenance as needed to control odors.
3. At end of construction, remove facilities or return existing facilities to same or better condition as originally found.

D. Temporary Water

1. Contractor shall supply its own water during construction. Contractor shall also provide its own piping, valves and appurtenances for its requirements. Connection to the existing water system shall be coordinated with the Owner and shall meet all code requirements including disinfection and backflow prevention.

E. Temporary Fire Protection

1. Contractors who maintain or provide an enclosed shed or trailer shall provide and maintain in operating order in each shed or trailer a minimum of one fire extinguisher. More extinguishers shall be provided as necessary. Fire extinguishers shall be minimum dry chemical, nonfreezing type, UL rating 2A-30BC, with 10-pound capacity for Class A, B and C fires.

1.3 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction activities and demolition.
- B. Provide barricades required by governing authorities for public rights-of-way.
- C. Protect vehicular traffic, stored materials, site, and structures from damage.

1.4 TREE REMOVAL

- A. No tree removal will be permitted outside the designated construction work limits without permission of the Owner or Engineer.
- B. Trees which are not removed will be protected by ensuring that trees to be removed are felled so as not to injure the remaining trees.
- C. Prior to site clearing or tree trimming, the contractor and Owner shall walk the site in an effort to designate the trees to be saved and those to be trimmed back or removed. A barrier will be placed at an appropriate distance from the trunks and root systems of the

trees to remain.

- D. Soil and other materials will not be stored next to or within the drip-line of trees.
- E. The contractor shall repair all injuries to bark, trunks, limbs, and roots of remaining vegetation by properly dressing, cutting, bracing, and painting using only approved tree surgery methods, tools, and materials.
- F. Selective pruning of tree limbs prior to initiation of construction should only be used within the established construction work limits where removal is required for construction activities.

1.5 CONTRACTOR OFFICE AND STORAGE SHED(S)

- A. Contractor shall provide facilities to meet Contractor's needs.
- B. Provide telephone as required for Contractor's needs. At a minimum, Contractor shall maintain telephone service to the project site to facilitate communication with site supervisory personnel.
- C. Maintain a copy of the Contract Documents for the specific use of marking to reflect the construction records. Clearly indicate in red the modifications or alterations to the original documents. Attach supporting documentation as necessary. The Contractor shall continually update these documents.
- D. Provide storage areas and sheds of size to meet storage requirements for products of individual sections, allowing for access and orderly provision for maintenance and for observation of products to meet requirements of Section 01600 – Materials and Equipment.

1.6 ENGINEER'S FIELD OFFICE

- A. None Required.

1.7 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- C. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- D. Prohibit traffic from landscaped areas.

1.8 SUPPORT FACILITIES

- A. Contractor shall provide whatever facilities and services which may be needed to properly support primary construction processes and meet compliance requirements and governing regulations.
- B. Contractor shall not use permanent facilities except as otherwise indicated, unless authorized by Owner.

1.9 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials just prior to final completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.
- C. Restore existing facilities used during construction to specified, or to original or better condition.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.1 DUST CONTROL

- A. Contractor shall execute the Work by methods to minimize raising dust from construction operations.
- B. Contractor shall provide positive means to prevent airborne dust from dispersing into atmosphere.

3.2 WATER, EROSION AND SEDIMENT CONTROL

- A. Contractor shall grade site to drain and shall maintain excavations free of water. Provide, operate and maintain pumping equipment.
- B. Contractor shall protect site from puddling or running water.
- C. Contractor shall provide erosion control measures as necessary to control discharge of sediment laden water to surface waters and wetlands.
- D. Except as provided in the Contract Documents, overland discharge of water from dewatering operations shall not be allowed. Depending on water quality, such water shall either be piped directly to the surface water or shall be directed to sedimentation basins or other such structures or features prior to discharge to surface waters so as not to cause damage to existing ground and improvements, erosion, or deposition in the discharge area.

- E. Contractor shall use jute or synthetic netting, silt fences, straw bales, dikes, channels and other applicable measures to prevent erosion of soils disturbed by its construction operation.
- F. Restoration of the site shall proceed concurrently with the construction operation. See Drawings and Specifications for erosion control measures in addition to that which may be required above.

3.3 NOISE CONTROL

- A. Provide methods, means and facilities to minimize noise produced by construction operations.

3.4 TRAFFIC CONTROL

- A. Contractor shall be responsible for providing all signs, barricades, flagmen and other traffic control devices in the construction zone.
- B. All traffic control measures shall meet the requirements of the Ohio Manual of Uniform Traffic Control Devices.
- C. Do not close or obstruct roadways without approval of the Owner.
- D. Maintain two-way traffic on streets at all times unless the Owner and the governing agency authorize one-way traffic for given areas and during specific operations.
- E. Conduct construction operations with minimum interference to roadways.

3.5 SITE SECURITY

- A. Contractor shall have the sole responsibility of safeguarding the Site perimeter to prevent unauthorized entry to the Site throughout the duration of the Project. Contractor shall at all times provide such permanent and temporary fencing or barricades or other measures as may be necessary to restrict unauthorized entry to its construction area including construction in public right-of-way or easements. Site security measures shall include safeguards against attractive nuisance hazards as a result of construction activity.
- B. Contractor shall at all times be responsible for the security of the Work including materials and equipment. Owner will not take any responsibility for missing or damaged equipment, tools, or personal belongings. Contractor shall have the sole responsibility of safeguarding the Work and the Site throughout the duration of the Project.

3.6 SITE CLEANUP

- A. Contractor shall cleanup the Site and remove all rubbish on a weekly basis unless a more frequent interval is warranted by the volume or type of rubbish present.

- B. Contractor shall cleanup public streets and highways and remove any dirt, mud, or other materials due to project traffic on a daily basis and shall comply with all local and state ordinances and permit regulations.

END OF SECTION 015000

SECTION 016000 - MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: Contractor shall be responsible for the delivery, handling, storage and protection of all material and equipment required to complete the Work as specified herein.
- B. Related Sections and Divisions: Specific requirements for the handling and storage of material and equipment are described in other sections of these Specifications.

1.2 RELATED SECTIONS

- A. Bid Documents - Instructions to Bidders: Product options and substitution procedures.
- B. Section 013300 - Submittals

1.3 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Provide interchangeable components of the same manufacturer, for similar components.
- C. When any construction deviations from the Drawings and/or Specifications necessary to accommodate equipment supplied by Contractor result in additional costs to the Contractor or other contractors, such additional costs shall be borne by the Contractor. Contractor shall also pay any additional costs necessary for revisions of Drawings and/or Specifications by the Engineer.
- D. Each major component of equipment shall bear a nameplate giving the name and address of the manufacturer and the catalog number or designation.

1.4 TRANSPORTATION AND HANDLING

- A. Materials, products and equipment shall be properly containerized, packaged, boxed and protected to prevent damage during transportation and handling.
- B. Contractor shall not overload any portion of the structure in the transporting or storage of materials.
- C. Contractor shall not damage other construction by careless transportation, handling, spillage, staining or impact of materials.

- D. Contractor shall provide equipment and personnel to handle products, including those provided by Owner, by methods to prevent soiling and damage.
- E. Contractor shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging and surrounding surfaces.
- F. Contractor shall handle products by methods to avoid bending or overstressing. Lift large and heavy components only at designated lift points.

1.5 DELIVERY AND RECEIVING

- A. Contractor shall arrange deliveries of products in accordance with the Progress Schedule, allowing time for observation prior to installation.
- B. Contractor shall coordinate deliveries to avoid conflict with the Work and conditions of the Site; limitations on storage space; and availability of personnel and handling equipment.
- C. Contractor shall deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
- D. Contractor shall clearly mark partial deliveries of component parts of equipment to identify equipment and contents to permit easy accumulation of parts and to facilitate assembly.
- E. Immediately upon delivery, Contractor shall inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Accessories and installation hardware are correct.
 - 4. Containers and packages are intact and labels legible.
 - 5. Products are protected and undamaged.

1.6 STORAGE AND PROTECTION

- A. Contractor shall store products, immediately on delivery, in accordance with manufacturer's instructions, with seals and labels intact and legible.
- B. Equipment Manufacturer shall coordinate with Contractor to clarify storage requirements for equipment to be delivered to the site. Coordination shall be completed in advance of the projected delivery date to assure adequate facilities will be available for protection of the equipment.
- C. In enclosed storage, Contractor shall:
 - 1. Provide suitable temporary weather tight storage facilities as may be required for materials that will be damaged by storage in the open.

2. Maintain temperature and humidity within ranges stated in the manufacturer's instructions.
3. Provide ventilation for sensitive products as required by manufacturer's instructions.
4. Store unpacked and loose products on shelves, in bins or in neat groups of like items.
5. Store solid materials such as insulation, tile, mechanical and electrical equipment, fittings, and fixtures under shelter, in original packages, away from dampness and other hazards.
6. Store liquid materials away from fire or intense heat and protect from freezing.

D. At exterior storage, Contractor shall:

1. Store unit materials such as concrete block, brick, steel, pipe, conduit, door frames and lumber off ground, out of reach of dirt, water, mud and splashing.
2. Store tools or equipment that carry dirt outside.
3. Store large equipment so as to not damage the Work or present a fire hazard.
4. Cover products subject to discoloration or detention from exposure to the elements, with impervious sheet material and provide ventilation to avoid condensation.
5. Completely cover and protect equipment or material that is prime coated or finish painted with secured plastic or cloth tarps. Store out of reach of dirt, water, mud and splashing.
6. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
7. Provide surface drainage to prevent erosion and ponding of water.
8. Prevent mixing of refuse or chemically injurious materials or liquids.
9. Cover aggregates such as sand and gravel in cold wet weather.
10. Remove all traces of piled bulk materials at completion of work and return site to original or indicated condition.

1.7 MAINTENANCE OF STORAGE

- A. Contractor shall periodically inspect stored products on a scheduled basis.
- B. Contractor shall verify that storage facilities comply with manufacturer's product storage requirements, and verify that the manufacturer's required environmental conditions are maintained continually.
- C. Contractor shall verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes is acceptable under requirements of the Contract Documents.
- D. Contractor shall perform scheduled maintenance of equipment in storage as recommended by the manufacturer. A record of the maintenance shall be kept and turned over to the Engineer when the equipment is installed.

1.8 INSTALLATION REQUIREMENTS

- A. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the respective manufacturers, unless otherwise noted.
- B. After installation, Contractor shall protect all materials and equipment against weather, dust, moisture, and mechanical damage.
- C. Contractor shall be responsible for all damages that occur in connection with the care and protection of materials and equipment until completion and final acceptance of the Work by the Owner. Damaged material and equipment shall be immediately removed from the Site.

1.9 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

1.10 SUBSTITUTIONS AFTER NOTICE TO PROCEED

- A. Engineer will consider requests for Substitutions only within 45 days after date of Notice to Proceed.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the Substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
 - 5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.
 - 6. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

1.11 SUBSTITUTION SUBMITTAL PROCEDURE

- A. Submit in accordance with Section 013300 - Submittals.
- B. The Engineer will notify Contractor, in writing, of decision to accept or reject request.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 016000

SECTION 017800 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Operation and maintenance data.
- E. Warranties.
- F. Spare parts and maintenance materials.

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Owner's inspection.
- B. Provide submittals to Owner that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

- A. It is the Contractor's responsibility to completely clean up the construction site at the completion of the Work.

1.4 ADJUSTING

- A. Contractor shall adjust operating products and equipment to ensure smooth and unhindered operation.

1.5 OPERATION AND MAINTENANCE DATA

- A. Provide per Section 017823.

1.6 WARRANTIES

- A. Contractor shall provide warranties beyond one-year warranty as required by technical sections and as follows:
 - 1. Provide duplicate notarized copies of equipment warranty.
 - 2. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.

- B. Include in the Operation and Maintenance Manual.
- C. Submit prior to request for Substantial Completion.
- D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.7 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Contractor shall provide spare parts and maintenance materials as outlined in the specification sections related to the equipment supplied.
- B. Include in the Operation and Maintenance Manual.
- C. Submit prior to final Application for Payment.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 017800

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Format and content of manuals.
- B. Schedule of submittals.

1.2 RELATED SECTIONS

- A. Section 013300 - Submittals: Submittals procedures; Shop drawings, product data, and samples.
- B. Section 016000 - Material and Equipment: Systems demonstration.
- C. Section 017800 - Contract Closeout: Contract Closeout Procedures; Project Record Documents.
- D. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.4 FORMAT

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8-1/2 x 11 inch three-ring binders with hardback, cleanable, plastic covers. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project; identify subject matter of contents.
- D. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data on 24-pound paper.

- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.5 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer, subconsultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- F. Warranties and Bonds: Bind in copy of each.

1.6 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual product specification Sections.

1.7 SUBMITTALS

- A. Submit one copy of preliminary draft or proposed format and outline of content before start of Work. Engineer will review draft and return copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

- C. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with Engineer comments. Revise content of documents as required prior to final submittal.
- D. After approval of draft by Engineer, Contractor shall submit three copies to Owner.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

Not Applicable.

END OF SECTION 017823

SECTION 033000 – CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Furnishing, forming, placing, finishing, curing and other related work of cast-in-place concrete for water line thrust blocking and other structures as required.

1.2 REFERENCES

- A. ACI 305 - Hot Weather Concreting.
- B. ACI 306 - Cold Weather Concreting.
- C. ACI 308 - Standard Practice for Curing Concrete.
- D. ACI 347 - Recommended Practice for Concrete Formwork.
- E. ASTM C33 - Concrete Aggregates.
- F. ASTM C94 - Ready-Mixed Concrete.
- G. ASTM C150 - Portland Cement.
- H. ASTM C260 - Air-Entraining Admixtures for Concrete.
- I. ASTM C494 - Chemical Admixtures for Concrete.
- J. ASTM C618 - Fly ash and raw or calcinated natural pozzolan for use as a mineral admixture in Portland cement concrete.

1.3 QUALITY ASSURANCE

- A. Perform work in accordance with ACI 301 and 318.
- B. Obtain materials from same source throughout the Work.
- C. Conform to ACI 305 when concreting during hot weather.
- D. Conform to ACI 306 when concreting during cold weather.

1.4 PROJECT RECORD DOCUMENTS

- A. Submit under Provisions of Section 017839.
- B. Accurately record actual locations of all embedded utilities and components which are concealed from view.

1.5 SUBMITTALS

- A. Submit under provisions of Section 013323.
- B. Submit product data for specified products including all proposed admixtures.
- C. Submit proposed mix design and 28-day test results for each class of concrete for review prior to commencement of work.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: ASTM C150, Type I, Type II, Type III, Type IV, Type V, Portland type; or ASTM C595, Type IP, Portland Pozzolan Cement shall not exceed 25 percent by weight. Different cements shall not be used interchangeably in the same element or portion of work. No industrial slag will be allowed to be used in any concrete mix design.
- B. Fine Aggregate: ASTM C33.
- C. Coarse Aggregate: ASTM C33, Size 57.
- D. Water: ASTM C94, Clean and not detrimental to concrete.

2.2 ADMIXTURES

- A. Air Entrainment: ASTM C260.
- B. Chemical Admixtures, where approved by the Engineer, shall conform to ASTM C494.
- C. No Calcium Chloride shall be added to the mix.

2.3 ACCESSORIES

- A. Bonding Agent: Two component modified epoxy resin as manufactured by Thermal Chem, Sika Corp., Sonneborn or equal.
- B. Joint Filler: Closed cell polyvinyl chloride foam resiliency recovery of 95% if not compressed more than 50% of original thickness.
- C. Sealant: Cold applied two-part liquid neoprene.

2.4 CONCRETE MIX

- A. Mix concrete in accordance with ASTM C94.
- B. All concrete, unless otherwise specified, shall have the following characteristics:

1. Minimum Compressive Strength at 28 days
 - a. Unexposed foundation work: 4000 PSI
 - b. All exposed concrete work (including floors, walls, columns, walks): 4000 PSI
 2. Maximum Water Cement Ratio: 0.45
 3. Minimum Cement Content
 - a. 4000 PSI mix: 564 LB/CY (6 sacks)
 4. Slump – Minimum: 2"
 5. Maximum: 4"
 6. Air Entrainment: 6 ± 1 percent (all concrete exposed to weather)
- C. All concrete designated as “Fill Concrete” shall have the following characteristics:
1. Minimum Compressive Strength at 28 days: 3000 PSI
 2. Minimum Cement Content: 376 lb (4 sacks) per cubic yard
 3. Slump – Minimum: 1"
 4. Maximum: 6"
- D. Add an air entraining agent to the mix for concrete exposed to the exterior or subject to freeze-thaw cycling.
- E. Use set retarding admixtures during hot weather only when approved by Engineer. Use set accelerating admixtures during cold weather only when approved by Engineer. Only non-chloride accelerators will be considered.
- F. No admixture shall be used unless approved in writing by the Engineer.
- G. Water shall not be added to the mix at the job site without specific approval by the Engineer
- H. Slump tests shall be taken prior to the addition of any approved water reducing or plasticizing agents.

2.5 FORMS

- A. Conform to ACI 301.
- B. Forms for exposed surfaces shall produce a smooth surface unless noted otherwise on the drawings.

PART 3 - EXECUTION

3.1 CONCRETE FORMWORK

- A. Construct and erect concrete formwork in accordance with ACI 301 and ACI 347.
- B. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause hardship in placing concrete.

- C. Minimize form joints. Symmetrically align joints and make watertight to prevent leakage of mortar.
- D. Arrange and assemble formwork to permit stripping so that concrete is not damaged during its removal.
- E. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.
- F. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.
- G. Camber slabs and beams to achieve ACI 301 tolerances.
- H. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.
- I. Construct formwork to maintain tolerances in accordance with ACI 301.
- J. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices and embedded items.
- K. Do not apply form release agent where concrete surfaces are scheduled to receive special finishes or applied coverings, which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

3.2 FORM REMOVAL

- A. Do not remove forms and shoring until concrete has sufficient strength to support its own weight and construction and design loads which may be imposed upon it.
- B. Reshore structural members due to design requirements or construction conditions to permit successive construction.
- C. Do not damage concrete surfaces during form removal.

3.3 JOINTS

- A. Provide keyways in all construction joints. The width of the keyway shall be 1/3 of the wall or slab thickness (3 ½ inch minimum) by 1½ inch deep, unless otherwise shown on the drawings.
- B. Provide control joints in sidewalks spaced approximately 5 feet on center and expansion joints at approximately 20 feet on center. Expansion joints shall also occur adjacent to all construction items in place when walks are poured.

- C. Control joints may be saw cut using a 3/16 inch thick blade, cutting 1/3 into the depth of the slab thickness. Saw cut control joints shall be made no sooner than 4 hours and no later than 24 hours after finishing is completed.

3.4 PREPARATION

- A. Verify anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, held securely and will not cause hardship in placing concrete.
- B. Prepare previously placed concrete by cleaning with a steel brush and removing all foreign matter and laitance.
 - 1. Saturate surface with water
 - 2. Immediately before placing new concrete, place a bed of mortar over the entire surface.
- C. Where called for on the drawings, apply a bonding agent in accordance with the manufacturer's instructions.
- D. At locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.5 PLACING CONCRETE

- A. Notify Engineer minimum 24 hours prior to commencement of concreting operations.
- B. Place concrete in accordance with ACI 301.
- C. Hot Weather Placement: ACI 301 and ACI 305.
- D. Cold Weather Placement: ACI 301 and ACI 306.
- E. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during concrete placement.
- F. The method of placing the concrete shall be such to insure against separation of materials.
- G. Place concrete continuously between predetermined construction and control joints in layers not exceeding 18 inches in depth. Do not break or interrupt successive pours such that cold joints occur.
- H. Placement of concrete shall be completed within one hour after the introduction of mixing water.
- I. All concrete shall be consolidated by vibrating. A spare vibrator shall be kept on the job during all concrete placing operations.
- J. Sidewalks shall be four (4) inches thick minimum and placed on four (4) inches of compacted sand fill unless noted otherwise on the drawings.

3.6 FINISHING

- A. Walkway finishes
 - 1. Finishes shall be as follows:
 - a. Sidewalks, curbs, and ramps shall have a broom finish. The broom finish of the sidewalks shall be transverse to the walk.
 - b. Edges of sidewalks and edges at control and expansion joints shall be neatly finished using a 3/8 inch radius tool.

3.7 CURING

- A. Concrete curing shall be in accordance with ACI 301 and ACI 308.
- B. Beginning immediately after placement, concrete shall be protected from premature drying, excessive hot or cold temperatures and mechanical injury.
- C. For concrete surfaces not in contact with forms, one of the following procedures shall be applied immediately after completion of placement and finishing.
 - 1. Ponding
 - 2. Application of absorptive mats or fabric kept continuously wet.
 - 3. Application of waterproof sheet materials conforming to ASTM C171.
 - a. Seal all edges and joints.
 - 4. Application of liquid membrane-forming curing compound conforming to ASTM C309.
 - a. Curing compound shall not be used on surfaces to which additional concrete or other material (hardeners, weatherproofing, paint, adhered floor coverings, etc.) is to be bonded.
- D. For concrete surfaces in contact with forms the following procedures shall be followed:
 - 1. Moisture loss from surfaces placed against forms exposed to the sun shall be minimized by keeping the forms wet.
 - 2. After the concrete has hardened and while the forms are still in place, form ties shall be loosened and water applied to run down the inside of the form to keep the concrete wet.
 - 3. Immediately following form removal, surfaces shall be kept wet by a water spray or water saturated fabric. Liquid membrane-forming curing compound conforming to ASTM C309 may be used with the previous restrictions still applying.
 - 4. Curing procedures shall be continued for at least 7 days. One procedure may be replaced by another any time after the concrete is one day old.

3.8 CONCRETE INSPECTING AND TESTING

- A. Contractor shall be responsible for costs for inspecting and testing of concrete.
- B. Portland cement:
 - 1. Secure from the cement manufacturer Certificates of Compliance delivered directly to the concrete producer for further delivery directly to the testing laboratory.
 - 2. Require the Certificates of Compliance to positively identify the cement as to production lot, bin or silo number, dating and routing of shipment, and compliance with the specified standards.

3. If so required by the Owner, promptly provide such other specific physical and chemical data as requested.

C. Aggregate:

1. Provide one test unless character of material changes, material is substituted, or additional test is requested by the Owner or Engineer.
2. Sample from conveyer belts or batching gates at the ready-mix plant:
 - a. Sieve analysis to determine compliance with specified standards and grading.
 - b. Specify gravity test for compliance with specified standards.
3. Laboratory design mix:
 - a. After approval of aggregate, and whenever character or source of material is changed, provide mix design in accordance with ACI 613.
 - b. Provide designs for all mixes prepared by a licensed Civil Engineer.
4. Molded concrete cylinders:
 - a. Provide three test cylinders for each 100 cubic yard, or fraction thereof, of each class of concrete of each day's placement. Cylinders shall be poured under the observation of the Owner or Engineer.
 - b. Test one cylinder at seven (7) days, one at twenty-eight (28) days, and one when so directed.
 - c. Report the mix, slump, gage and location of concrete in the structure and test results.
 - d. Take specimens and make tests in accordance with the applicable ASTM standard specifications.
5. Core tests:
 - a. Provide only when specifically so directed by the Owner because of low cylinder test results.
 - b. Cut from locations directed by the Owner, securing in accordance with ASTM C42, and prepare and test in accordance with ASTM C39.
6. Placement inspections:
 - a. Throughout progress of concrete placement, make slump tests to verify conformance with specified slump.
 - b. Using all required personnel and equipment throughout progress of concrete placement, verify that finished concrete surfaces will have the level or slope that is required by the Contract Documents.

3.9 CONCRETE REINFORCEMENT INSPECTING AND TESTING

- A. Prior to use, test all reinforcement steel bars for compliance with the specified standards.
 1. Material identified by mill test reports, and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish mill test reports to the testing laboratory for certification.
 2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.
- B. Unidentified steel:
 1. Have testing laboratory select samples consisting of two (2) pieces of each size, each 18" long.
 2. Have the testing laboratory make one tensile test and one bend test for each 2-1/2 tons of fraction thereof of each size of unidentified steel.

3. Provide continuous inspection for all welding of reinforcement steel.

3.10 DEFECTIVE CONCRETE

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, finishes tolerances or specified strength requirements.
- B. Repair or replacement of defective concrete will be determined by the Engineer.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.
- D. If, according to the Engineer, the defects in the concrete cannot be patched successfully or if the patch is unsatisfactory from the standpoint of appearance or structural integrity, the entire section of concrete shall be removed and replaced at the Contractor's expense.

3.11 PATCHING

- A. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Engineer upon discovery.
- C. Patch imperfections in accordance with ACI 301.
- D. The area to be patched shall be cleaned and all defective concrete removed down to sound concrete. The area and an area at least 6 inches wide surrounding it shall be saturated with water.
- E. A bonding agent shall be applied prior to placing the patching mortar.
- F. The patching mortar shall be made of the same materials and proportions as used for the concrete, except the coarse aggregate shall be omitted.
- G. On all exposed concrete, sufficient white Portland cement shall be substituted for the regular cement to produce a color matching finish.

3.12 CONCRETE SEALANT

- A. Exposed concrete shall be sealed with an approved concrete sealant after installation.

END OF SECTION 033000

SECTION 310000 – EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Soil Materials
 - a. Sub base Material
 - 1) Building porous fill
 - 2) Pavement sub base course
 - b. Backfill and fill materials
 - c. Drainage fill
 - d. Impervious fill
 - e. Topsoil
2. Protection
 - a. Existing improvements protection
 - 1) Salvageable improvements
 - 2) Existing utilities protection
3. Site Clearing
 - a. Clearing and grubbing
 - b. Topsoil stripping
4. Excavation
 - a. Excavation classifications
 - b. Shoring, bracing, and underpinning
 - 1) Underpinning
 - 2) Shoring and bracing
 - c. Dewatering
 - d. New structures
 - e. Pavements
 - f. Ditches
 - g. Pipe Trenches
5. Compaction
6. Backfill and Fill
 - a. Preparation for backfill
 - b. Ground surface preparation for fill
 - c. Placement and compaction
7. Grading
 - a. Grading at existing trees
 - 1) Lowering grades at existing trees
 - 2) Raising grades at existing trees
 - a) Minor fills at existing trees
 - b) Moderate fills at existing trees
 - b. Grading outside building lines
 - c. Grading surface of fill under building slabs

1.2 RELATED SECTIONS

- A. Related work specified elsewhere includes, but is not limited to:
 - 1. Section 311100, Clearing and Grubbing
 - 2. Section 312323.14, Fill

- B. All embankment and fill shall conform to ODOT Item 203.

1.3 SUBMITTALS

- A. All submittals shall conform completely to the requirements of Section 017800, Submittals.
- B. Site Plan showing:
 - 1. Vegetation removal limits.
 - 2. Areas for temporary construction and field offices.
- C. Project Record Documents:
 - 1. Accurately record actual locations of capped and active utilities and subsurface construction.
- D. Reference Submittals
 - 1. Material Certification
 - a. Building porous fill
 - b. Gravel fill
 - c. Pavement sub base course
 - d. Other material certification as required
 - 2. Test Reports (if required by Engineer)
 - a. General
 - 1) Test soil materials proposed for use in the Work and promptly submit test result reports.
 - 2) The Engineer may require one optimum moisture-maximum density curve for each type of soil encountered in sub grade and fills under:
 - a) Building slabs
 - b) Foundations
 - c) Paved areas.
 - 3) Determine maximum densities in accordance with ASTM D698.
 - 4) The Engineer will determine the suitability of materials to be used as fill.
 - 5) For borrow materials, perform a mechanical analysis (AASHTO T88), plasticity index (AASHTO T91), and a moisture-density curve (AASHTO T99 or ASTM DG98).
 - b. Backfill and fill materials
 - c. Verification of each footing sub grade
 - d. Field density test reports.
 - e. One optimum moisture-maximum density curve for each type of soil encountered.

- f. Other tests as required
- g. If a soil testing is not performed, contractor assumes responsibility for adequate foundations for each structure.

1.4 JOB CONDITIONS

- A. Minimize production of dust due to operations; do not use Water if it will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- B. Comply with other requirements specified in Section 017700.
- C. Use of Explosives: The use of explosives will not be permitted.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Soil Materials:

1. Gravel Fill: Naturally or artificially graded mixture of crushed limestone or gravel. The gradation shall conform to ASTM C33 size # 57.
2. Pavement Subbase Course: ODOT Item 304.
3. Backfill and Fill Materials:
 - a. Provide soil materials for backfill and fill free of clay, debris, waste, frozen materials, vegetation and other deteriorious matter.
 - b. Rock or gravel shall not be larger than 3" in any direction.
 - c. Backfill and fill shall consist of materials classified as "SC" or coarser by ASTM D2487.
 - d. Materials finer than "SC" may be used when a registered Geotechnical Engineer is engaged to analyze proposed fill material for its suitability as fill material and its ability to be compacted in accordance with this section. The material shall be such that the required compaction percentages of maximum density, listed in paragraph "Compaction" in Part 3 of this Section, can be reasonably achieved.
 - 1) Materials classified as "ML" or finer by ASTM D2487 shall not be permitted, except when a registered Geotechnical Engineer is engaged.
4. Alternate and Fill Material
 - a. Contractor may, at his option, substitute a specially manufactured material upon approval.
 - b. The material shall have a cement base and is combined with other admixtures, fly ash, or other materials specifically designed for the product.
 - c. The material must have been successfully used in the completion of mass fills having a minimum of 20,000 cubic yards in the past 5 years.
 - d. Similar materials must have been successfully used for at least 10 years.
 - e. Material must have a minimum cast density of 30 pcf and a minimum compressive strength of 4,000 psi.
 - f. Material shall be Elastize II EF, or approved equal.

PART 3 - EXECUTION

3.1 PROTECTION

A. General

1. Protection of Persons and Property
 - a. Barricade open excavations occurring as part of this Work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required.
 - b. Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout and other hazards created by excavation operations.

B. Existing Improvements Protection

1. General
 - a. Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 - b. Protect improvements on adjoining properties and on the Owner's property.
 - c. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.
2. Existing Utilities Protection
 - a. Locate existing underground utilities in the areas of Work. Utilities on plans are shown to the best available information but are not warranted to be accurate. Contractor shall call the Ohio Utilities Protection Services and have utilities located 48 hours prior to any construction. If utilities are to remain in place, provide adequate means of protecting during excavation operations.
 - b. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Engineer or Owner immediately. Cooperate with the Owner and public and private utility companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the Utility Owner.
 - c. Do not interrupt existing utilities serving facilities occupied and used by the Owner or others, except when permitted in writing by the Engineer or Owner and then only after acceptable temporary utility services have been provided.

3.2 SITE CLEARING

A. Clearing and Grubbing

1. Clear the Site of trees, shrubs and other vegetation, except for that indicated to be left standing.
2. Trees, Shrubs and Plants
 - a. Remove all trees, shrubs and plants.
 - b. Remove trees, shrubs and plants not designated to remain.
 - c. Remove roots larger than 3" in diameter and matted roots existing in an area within 5' of construction.

- d. Remove larger than 3" depth to 18" below sub grade in paved areas.
 - e. Remove roots larger than 3" to sub grade in turf areas.
 - f. Completely remove stumps, roots, and other debris.
3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
 - a. Place fill material in horizontal layers not exceeding 6" loose depth, and thoroughly compact to a density equal to adjacent original ground.

B. Topsoil Stripping

1. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4". Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2" in diameter, and without weeds, roots, and other objectionable materials.
2. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with the underlying subsoil or other objectionable material.
3. Strip topsoil to its entire depth from areas to be graded and areas to be occupied by building, roadways, parking areas, walks, etc.
4. Stockpile topsoil in storage piles. Construct storage piles to freely drain surface water. Cover storage piles to prevent windblown dust.

3.3 EXCAVATION

A. General

1. Excavation consists of the removal and disposal of materials encountered when establishing the required grade elevations.
2. Unauthorized excavation consists of removal of materials beyond indicated sub grade elevation or side dimensions without the specific direction of the Engineer.
 - a. Under footings, foundation bases, or retaining walls, unauthorized excavation may be filled by extending the indicated bottom elevation of the footing or base to the excavation bottom (Engineer must be notified and approval given before commencing), without altering the required top elevation. Lean concrete fill (1500 psi minimum) may be used to bring elevations to the proper position, only when acceptable to the Engineer and/or the Owner and when approval has been given.
 - b. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of the same classification, unless otherwise directed by the Engineer and/or the Owner.

B. Excavation Classifications: All excavation is unclassified.

C. Stability of Excavations

1. Slope the sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

3. The maximum slope ratio from bottom edge of foundation to the next foundation and/or any other excavation shall be one (1) vertical to two (2) horizontal, except where approved by a registered Geotechnical Engineer to be less than a 1 to 2 slope.

D. Shoring and Bracing and Underpinning

1. General
 - a. Design and provide shoring and bracing and underpinning to comply with local codes and authorities having jurisdiction.
2. Shoring and Bracing
 - a. Provide materials for shoring and bracing, such as sheet piling, soldier beams, stringer, rakes, whalers and cross-braces, etc., in good serviceable condition.
 - b. Maintain shoring and bracing in excavations regardless of the period excavations will be open. Carry down shoring and bracing as the excavation progresses.
 - 1) Provide permanent steel sheet piling or pressure creosoted timber sheet piling wherever subsequent removal of sheet piling might permit the lateral movement of soil under adjacent structures. Cut-off tops as required and leave permanently in place.
 - c. Excavations shall be shored and sheeted with members of sizes and arrangement sufficient to prevent injury to persons, damage to structure, injurious caving, or erosion; shoring, sheeting and bracing shall be removed as the excavations are backfilled; care shall be exercised to prevent injurious caving during the removal of the and/or sheeting.

E. Dewatering

1. Prevent surface water and subsurface or groundwater from flowing into the excavations and flooding the Project Site and surrounding area.
2. Do not allow water to accumulate in excavations. Remove water from excavations to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to the stability of sub grades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey the water away from excavations.
3. Convey water removed from excavations and rainwater to collecting or runoff areas. Provide and maintain temporary drainage ditches and other diversions outside the excavation limits for each structure. Do not use trench excavations for Site utilities as temporary drainage ditches.

F. Material Storage

1. Stockpile excavated materials classified as satisfactory soil material where indicated by the Engineer or Owner, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
2. Locate and retain fill materials away from edges of excavations.
3. Dispose of excess soil material and waste materials as specified hereinafter.

G. Removal of Unsatisfactory Soil Materials

1. Excavate unsatisfactory soil materials encountered that extend below the required elevations, to the additional depth as indicated by the ENGINEER or Owner.
2. Such additional excavation, provided it is not due to the fault or neglect of the Contractor, shall be measured as indicated by the ENGINEER or Owner, and paid for as a change in the Work.

H. Cold Weather Protection

1. Protect excavation bottoms against freezing when the atmospheric temperature is less than 35 deg F.

I. Existing Improvements

1. General
 - a. Remove above-grade and below-grade improvements necessary to permit construction, and other Work as indicated.
 - b. Removal of abandoned underground piping or conduit interfering with construction is included under this Section.
2. Surface Structures
 - a. Remove buildings, curbs, gutters, walls, fences, walks, drives, etc., where indicated.
3. Subsurface Structures
 - a. Subsurface Structures Inside or Beneath New Structure.
 - 1) Remove during excavation where necessary to reach required elevations.
 - 2) Remove vertical projections and/or horizontal structures to a distance of 4'-0" below any part of new construction such as foundations, slabs, tie beams, grade beams and utilities.
 - 3) Existing horizontal surfaces below new construction shall be thoroughly fractured to ensure drainage.
 - b. Subsurface Structures Outside of New Structure and within 3' of New Footing Edges - Remove all horizontal and vertical structures.
 - c. Subsurface Structures Beyond 3' of New Footing Edges
 - 1) Remove structures to a level at least 2' below new finish grades.
 - 2) Horizontal surfaces existing below finished grade shall be thoroughly fractured to ensure drainage.
4. Abandoned Underground Utilities
 - a. Demolish and completely remove from the Site existing underground utilities indicated to be removed. Coordinate with local utility companies for shut-off of services if lines are active.
 - b. Any lines to be abandoned that extend beyond the excavation must be capped or plugged.
 - c. Abandoned underground utilities under structures to be constructed (concrete, masonry, cast iron, ceramic clay, etc.) that are no longer in use shall be filled solid with concrete, or remove and backfill as specified herein.
 - d. Close open ends of metallic conduit and pipe with threaded galvanized metal caps or plastic plugs, or other suitable method for the type of material and size of pipe. Do not use wood plugs.
 - e. Close open ends of concrete and masonry utilities with not less than 8" thick brick masonry bulkheads, constructed to completely fill the opening.

- f. Wet brick before laying, and lay brick in mortar so as to form a full bed with ends and side joints in one operation and joints not more than 3/8" wide. Protect fresh masonry from freezing or from rapid drying and maintain protection until mortar has set.

J. New Structures

1. Conform to the elevations and dimensions shown on the Drawings, within a tolerance of $\pm 0.10'$, and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction required, and for inspection.
2. In excavating for footings and foundations, take care not to disturb the bottom of the excavation. Excavate by hand to final grade just before reinforcement is placed. Trim bottoms to the required lines and grades to leave a solid base to receive concrete.

K. Pavements

1. Cut surface under pavements to comply with grades indicated.

L. Ditches

1. Cut ditches to cross-sections and grades as shown. Deposit excavated materials to prevent cave-ins or material falling or sliding into ditch. Keep ditches free of debris until final acceptance of the Work.

3.4 COMPACTION

- A. General: Control soil compaction during construction for compliance with the percentage of maximum density specified for each area classification.

B. Percentage of Maximum Density Requirements

1. In fill areas, provide not less than the following percentages of maximum density of soil material compacted at optimum moisture content, according to standard proctor ASTM D69B dry density.
 - a. Structures: Compact each 8" layer of backfill or fill material at a minimum 98% density. Fill shall be in compliance with tank manufacturer requirements for structural loads.
 - b. Building slabs and steps: Compact each 8" layer of backfill or fill material at 98% density
 - c. All other areas: No specific density requirements are listed. Finished construction must not settle appreciably. Contractor may be required to refill any settled areas.
2. Contractor may be required, at the Engineer's discretion, to test the soil density.

C. Moisture Control

1. Where the sub grade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to the surface of sub grade, or layer of soil

- material, to prevent free water appearing on the surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
 - a. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing or pulverizing, until the moisture content is reduced to a satisfactory value, as determined by moisture-density relation tests.

3.5 BACKFILL AND FILL

A. General

1. Place acceptable soil material in layers to required sub grade elevations, for each area classification listed below.
 - a. In all excavations: Excavated or borrow backfill and fill materials
 - b. Under grassed areas: Excavated or borrow backfill and fill materials.
 - c. Under walks and pavements: Approved sub base material.
2. All soil materials shall be sampled and tested for compliance with all requirements of Part 2 of this Section.

B. Preparation for Backfill

1. Backfill excavations as promptly as the Work permits, but not until completion of the following:
 - a. Acceptance by ENGINEER or Owner of construction below finish grade including, where applicable, damp proofing, waterproofing, and perimeter insulation
 - b. Inspection, testing, approval, and recording locations of underground utilities
 - c. Removal of concrete formwork
 - d. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in a manner to prevent settlement of the structure or utilities, or leave in place if required.
 - e. Removal of trash and debris
 - f. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
 - g. Do not backfill against walls until slab on grade and first framed floor is complete and concrete has attained its design strength.

C. Placement and Compaction

1. Place backfill and fill materials in layers not more than 8" in loose depth. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content of the soil material. Compact each layer to the required percentage of maximum density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
2. Pipe backfill: Roadways, Sidewalks and Drive; 100% Standard Proctor compaction; lawn areas; 95% Standard Proctor compaction. Contractor shall place backfill materials evenly adjacent to structures, to the required elevations.

Contractor shall take care to prevent wedging action and unequal horizontal pressures of the backfill against structures by placing the material uniformly on all sides of the structure to approximately the same elevation in each lift ($\pm 1'-0''$).

3. Where utility facilities and structures are supported in place, use special equipment and techniques as required to achieve the specified compaction under and around them.

D. Alternate Backfill and Fill Material

1. The installer shall be certified by the manufacturer of the material and approved by the Engineer.
2. All equipment used in batching, mixing, and placement must be approved by the manufacturer.
3. A representative of the manufacturer must be on site for the initial placement of materials and make any appropriate changes in operations.
4. Five (5) samples will be taken for testing from each 200 cubic yards of material placed. Testing will be conducted in accordance with Section 01400.

3.6 GRADING

- A. General: Uniformly grade areas within the limits of grading under this Section, including adjacent transition areas. Smooth finished surfaces within specified tolerances, with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

B. Grading Outside Building Lines

1. Grade areas outside building lines to drain away from structures and to prevent ponding of water. Compact as specified.
2. Finish the surfaces free from irregular surface changes, and as follows:
 - a. Grassed Areas: Finish areas to receive topsoil to within not more than 0.10' above or below the required sub grade elevations.
 - b. Walks: Shape the surface of areas under walks to line, grade and cross-section, with the finish surface not more than 0.10' above or below the required sub grade elevation.
 - c. Pavements: Shape the surface of areas under pavement to line, grade and cross-section indicated, with the finish surface not more than 1/2" above or below the required sub grade elevation, and graded to prevent ponding of water after rains. Include such operations as plowing, dicing, and any moisture or aerating required to provide the optimum moisture content for compaction. Fill low areas resulting from removal of unsatisfactory soil materials, obstructions, and other deleterious materials, using satisfactory soil material.
 - d. Ditches: Finish ditches to ensure proper flow and drainage. Conduct final rolling operations to produce a hard, uniform and smooth cross-section.

C. Grading Surface Under Building Slabs

1. Grade the surface of fill under building slabs smooth and even, free of voids, compacted a specified, and to required elevation.
2. Provide final grades within a tolerance of 1/4" when tested with a 10' straightedge; the maximum out-of-level tolerance for the entire length of grade for slabs in either direction shall be $\pm 2"$.

3.7 FIELD QUALITY CONTROL

- A. Compact each 8" layer of backfill to levels stated previously or fill material at 98% density Quality Control Testing Construction
 1. Testing service, if required by the Engineer, must inspect, and the Geotechnical Engineer must approve, existing ground surface, fill layers and sub grades before further construction Work is performed thereon. Tests will be taken as follows:
 - a. Footing Sub grade: For each stratum of existing soil on which footings will be placed, provide visual verification and any tests that are required to verify that design bearing capacities have been met. This verification shall be made by a qualified Soil Engineer. The Engineer or Owner reserves the right to order more or fewer inspection tests as required.
 - b. Paved Areas and Building Slab Subgrade: Make at least one field density test of the subgrade surface in cut areas for every 2,000 sq. ft. of paved area or building slab, but in no case less than three tests. In each compacted fill layer, make one field density for every 2,000 sq. ft. of overlaying building slab or paved area, but in no case less than three tests. The Engineer or Owner reserves the right to order more or less inspection tests as required.
 2. If, in the opinion of the Engineer or Owner, based on reports of the testing service and inspection, the subgrade or fills, which have been placed, are below the specified density, provide additional compaction and testing at no additional expense to the Owner.
 - a. The results of the density tests shall be equal to or greater than the specified density except that 1 density test out of 5 consecutive density tests for the same area being tested may have a test result of 2% below specified density.

3.8 MAINTENANCE

- A. Protection of Graded Areas
 1. Protect newly graded areas from traffic and erosion, and keep free of trash and debris.
 2. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.
- B. Reconditioning Compacted Areas
 1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction. Use hand tamping for recompaction over underground utilities and under floor sub drains, if any.

3.9 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Burning on Owner's Property: Not permitted.
- B. Removal from Owner's Property: Remove all waste materials, including excavated material classified as unsatisfactory soil material, trash and debris, from the Owner's property and legally dispose of it.

END OF SECTION 310000

SECTION 311100 – CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Removal of surface debris.
- B. Removal of trees, shrubs, and other plant life.
- C. Topsoil excavation.

1.2 RELATED SECTIONS

- A. Specifications sections related to this section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, Division 1 and all other applicable sections in this manual.

1.3 REGULATORY REQUIREMENTS

- A. Conform to all applicable and local codes for environmental requirements, disposal of debris, burning debris on site, use of herbicides, and other applicable items.
- B. Coordinate clearing work with utility companies.
- C. Work shall conform to the requirements of ODOT-CMS Item 201 Clearing and Grubbing.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Herbicide, if required shall conform to applicable and local codes per environmental requirements

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that existing plant life designated to remain is tagged or identified.
- B. Identify a waste area and/or salvage area for placing removed materials.

3.2 PROTECTION

- A. Locate, identify, and protect utilities that remain, from damage.

- B. Protect trees, plant growth, and features designated to remain, as final landscaping.
- C. Do not disturb any area that is not necessary for completion of this project. Disturbance shall be in accordance with projects Storm Water Pollution Prevention Plan.
- D. Protect benchmarks, survey control points, and existing structures from damage or displacement. Wetlands areas are not to be disturbed.

3.3 CLEARING

- A. Clear areas required for access to site and execution of Work.
- B. Remove trees and shrubs within marked areas or as indicated. Remove stumps, main root ball, root system for complete removal of surface rock and other as indicated on drawings.
- C. Clear undergrowth and deadwood, without disturbing subsoil.
- D. Apply herbicide to remaining stumps to inhibit growth.

3.4 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.

3.5 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, re-landscaped, or re-graded, marked areas, entire site, without mixing with foreign materials.
- B. Do not excavate wet topsoil.
- C. Stockpile in area designated on site to depth not exceeding 8 feet and protect from erosion.
- D. Install perimeter silt fence around stockpile area to prevent erosion and sediment transport from occurring.
- E. Stockpiled topsoil shall be used for final grading around proposed improvements.

END OF SECTION 311100

SECTION 312316.13 - TRENCH EXCAVATING, BEDDING AND BACKFILL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: All trench excavations and fills to the lines and grades given for conduits, pipelines, etc. as required for proper completion of the work of this contract as shown on the Contract Drawings.
- B. The trench excavation work item in this contract shall include the removal, handling, rehandling, filling, and disposal of any and all materials (whether they be wet or dry) found unsuitable by the Engineer encountered within the limits of the work and the transportation and placing thereof, and shall include all pumping, bailing, draining, sheeting and shoring, backfill, refill and protection, and sand backfill, together with rolling and tamping where such is required by these specifications and is not specifically included in another item of work in this contract.
- C. Existing ground elevations of the work site(s) are shown by figures and/or by contours on the Contract Drawings. The contours and elevations of the present ground are believed to be reasonably correct, but do not purport to be absolutely so, and are presented only as an approximation. The Contractor shall satisfy himself, however, by his own actual examination of the site of the work, as to both the existing elevations and the amount of work required under this Section. If the Contractor is not willing to accept the ground surface elevations indicated upon the Drawings for payment, he shall notify the Engineer prior to the starting of any excavation work.

1.2 QUALITY ASSURANCE

- A. State and local code requirements shall control the construction specified herein.
 - 1. Ohio Department of Transportation (latest edition) for the products specified herein.
- B. Compaction testing shall be performed by a soil testing laboratory as specified in Section 013319. Testing shall be in accordance with ASTM Standards:
 - 1. C33 Specification for Concrete Aggregates.
 - 2. D698 Tests for Moisture – Design of Relations of Soils.
 - 3. D1556 Test for Density of Soil-in-Place by the Sand Cone Method.
 - 4. D2922 Test for Density of Soil and Soil Aggregates in Place by Nuclear Methods.

1.3 SUBMITTALS

- A. Certifications attesting that the composition analysis of pipe protection and material stone backfill materials meet specification requirements.
- B. Reference Submittals:

1. Material Certification: Provide material certification for the items below:
2. Granular backfill material.
3. Pipe bedding material.
4. Test Reports: Provide two copies of test reports.

1.4 JOB CONDITIONS

A. Control of Traffic

1. The Contractor shall provide all traffic control measures in accordance with the Ohio Department of Transportation as prescribed by the Ohio Manual of Uniform Traffic Control Devices.

B. Utility Services

1. The Contractor shall be responsible for maintaining all building utility service connections during the excavation and backfill process.
2. Immediately report to the utility company and the Engineer any break, leak or other damage to the lines or protective coatings made or discovered.
3. Allow free access to utility company personnel at all times for purposes of maintenance, repair and inspection.

PART 2 - PRODUCTS

2.1 PIPE BEDDING MATERIAL

- A. Granular material shall be crushed stone size as shown on Table 703-01 (ODOTCMS), No. 57, 6, 67, 68, or 7.

2.2 BACKFILL MATERIAL

- A. Backfill materials shall be either natural materials or granular materials as specified below.
 1. Type A. Granular material as specified in ODOT Item 304.
 2. Type B. Natural soil free from stones larger than 2 inches across their greatest dimension, top soil, vegetation, debris, rubbish or frozen material. When approved by the Contract Administrator, stones no larger than 8" across their greatest dimension may be deposited at least 2 feet above the top of the pipe.
 3. Type C. Low Strength Mortar as specified in ODOT Item 613.
- B. The backfill under and/or within five feet of existing or proposed roadways, paved shoulders, curbs, existing parking areas and drives shall be Type A granular material.

2.3 UTILITY MARKING TAPE

- A. Three (3) inch wide detectable utility marking tape bearing wording based upon the utility involved permanently printed on the tape. Tape color shall comply with the APWA color code.

2.4 TRACER WIRE

- A. Metallic detectable underground wire shall be located as shown on standard details. Tracer wire shall be 12 AWG Solid Copper Wire designed specifically for detecting underground utilities and direct burial use.
- B. At all valves, line beginnings and ends, the wire shall be clamped to a 3-foot-long piece of ½-inch rebar with a brass clamp. The rebar shall be placed vertically next to the valve or structure and extend 2 inches above finished grade.
- C. Tracer Wire shall be installed on top of pipe bedding or 12 inches above pipe crown on all force mains and non-metallic pipe.

PART 3 - EXECUTION

3.1 GENERAL PREPARATION

- A. Trench Excavation shall follow lines and grades as indicated on the plans. Exact positions shall be subject to and adjusted to interferences with related work and real-world conditions.
- B. Leave Trenches open until inspected by Engineer.
- C. Prior to beginning excavation, notify the Ohio Utilities Protection Service as required and notify all utilities on the project of the intended work schedule.
- D. Locate all existing utilities or other structure of critical location in advance of excavation.
- E. Uncover existing pipes and cables ahead of trenching for new work.
- F. Whenever existing items such as sewer pipes, water pipes, gas mains, culverts, or other pipes or structures are encountered in or near the lines of trenches being excavated, use proper care in preserving operation of such items intact and immediately repair any damage to such items.

3.2 MAINTENANCE AND PROTECTION OF TRAFFIC

- A. Coordinate the work to insure the least inconvenience to traffic and maintain traffic in one or more unobstructed lanes unless closing the street is authorized.
- B. Maintain access to all streets and private drives.

- C. Provide and maintain signs, flashing warning lights, barricades, markers, and other protective devices as required to conform with construction operations and to keep traffic flowing with minimum restrictions.
- D. Comply with state and local codes, permits and regulations.

3.3 CUTTING PAVED SURFACES

- A. Where installation of pipelines, miscellaneous structures, and appurtenances necessitate breaking a paved surface, make cuts in a neat uniform fashion forming straight lines parallel with the centerline of the trench.
- B. Protect edges of cut pavement during excavation to prevent raveling or breaking; square edges prior to pavement replacement.
- C. The requirement for neat line cuts, in other than state highways, may be waived if the final paving restoration indicates overlay beyond the trench width.

3.4 BLASTING

- A. Blasting will not be permitted.

3.5 METHOD OF TRENCH EXCAVATION

- A. All excavation shall be in open cut, unless otherwise permitted by the Engineer.
- B. Excavation shall be made to undisturbed finish subgrade six (6) inches below the bottom of the pipe or structure, unless otherwise shown on the Drawings.
- C. Where unsuitable bearing material is encountered the trench shall be excavated to an additional depth below the excavation for the bottom of the pipe barrel of six (6) inches for pipe of twenty-four (24) inches diameter and smaller and of nine (9) inches for pipe greater than twenty-four (24) inches in diameter. This additional excavation is to be refilled with suitable material in a satisfactory manner to provide the proper foundation for the conduit bed.
- D. Trench must be excavated with vertical sides from the bottom of the trench to one (1) foot above the top of the pipe, from which point sides may slope to ground surface, except that, in streets or roadways, trenches must be excavated with vertical sides to the top of the trench. Width of trench in the vertical section shall be excavated only as wide as necessary to provide free forking space on each side of the piping according to the size of the pipe and the character of the ground. In every case there shall be sufficient space between the pipe and the sides of the trench to make it possible to thoroughly compact the backfill around the pipe and to secure tight joints, but in no case more than one (1) foot on either side of pipe. In no case, however, shall the width of the trench at the top of the pipe exceed the dimensions as shown on the Contract Drawings. In no case will it be permitted to excavate pipe trenches with sides sloping to the bottom.
- E. Bottom of trench bed must give a full, firm but slightly yielding support to the lower section of the pipe and so that the pipe barrel is firmly supported in the cradle throughout

its entire length, in such manner as to prevent any subsequent settlement of the pipe. Boulders or loose rocks which might bear against the pipe will not be permitted in the trench bottom or sides below two (2) feet above the pipe. Bell holes must be excavated to assure full length bearing of the pipe barrel.

- F. Trenches must be kept free from water until the material in the joints has sufficiently set.
- G. At no time shall the Contractor advance trenching operations more than 400 feet ahead of completed pipeline, including backfill, except as approved by the Engineer.
- H. Where the Contractor, by error or intent, excavates beyond the minimum required depth, the trench shall be brought to the required pipeline grade with bedding material.

3.6 SUPPORT OF EXCAVATION

- A. The Contractor shall be responsible for supporting and maintaining all excavations required hereunder utilizing a trench box and even to the extent of sheeting, shoring the sides and ends of excavations with timber or other satisfactory supports. If the sheeting, braces, shores, and stringers or walling timbers or other supports are not properly placed or are insufficient, the Contractor shall provide additional or stronger supports. The requirements of sheeting or shoring, or of the addition of supports, shall not relieve the Contractor of this responsibility for their sufficiency. All trench protection and sheeting and shoring must conform to the regulations of the Federal Occupations Safety and Health (OSHA) and will be subject to conform to their respective inspections. All orders of the OSHA representatives must be complied with by the Contractor.
- B. All timbering shall be removed where and when required and, upon its removal, all voids carefully and compactly filled. If any timber is ordered in writing to be left in place, it shall be cut-off as directed and will be paid for with a Change Order. No payment will be made for wasted ends or for timber left in place without specific written authorization by the Engineer.

3.7 REMOVAL OF WATER

- A. The Contractor shall pump out or otherwise remove and dispose of, as fast as it may collect any water, sewage, or any other liquids which may be found or may accumulate in the excavation, regardless of whether it be water or liquid wastes from his own contract or from existing conduits and works.
- B. Maintain pipe trenches dry until pipe has been jointed, inspected, and backfilled, and concrete work has been completed. Preclude trench water from entering pipelines under construction.
- C. Intercept and divert surface drainage away from excavations. Design surface drainage systems so that they do not cause erosion on or off the site, or cause unwanted flow of water.
- D. There shall be, upon the work at all times during the construction, proper and approved pumps and machinery of sufficient capacity to meet the maximum requirements for the removal of water or other liquids and their disposal.

- E. Dewatering operations shall in no way violated the conditions of the storm water pollution prevention plan (SWPPP), or the EPA regulations for Construction Storm Water.

3.8 BEDDING

- A. Bedding material below the pipe and that under and around the pipe to spring line shall be well tamped. That above spring line shall be placed in six (6) inch layers and be well tamped to a minimum height of twelve (12) inches above the top of the pipe.
- B. Where foundation conditions are such that the above types of bedding cannot be provided, as in quicksand, etc., special provisions shall be made as called for by the Drawings or as directed by the Engineer by providing concrete cradle or lumber foundations.

3.9 UNAUTHORIZED EXCAVATIONS

- A. All excavations carried outside of the lines and grades given or specified, together with the disposal of such material, and all excavations and other work resulting from slides, cave-ins, swellings or upheavals shall be at the Contractor's own cost and expense. All spaces resulting from unauthorized excavations or from slides or cave-ins shall be refilled at the Contractor's expense with concrete or other suitable material.

3.10 ADDITIONAL EXCAVATION

- A. It is expected that satisfactory foundations will be found at the elevations shown on the Drawings, but in case the material encountered is not suitable, or in case it is found desirable or necessary to go to additional depth, the excavation shall be carried to an additional depth as ordered and refilled as directed by the Engineer.

3.11 THRUST RESTRAINT

- A. Provide pressure and vacuum pipe with concrete thrust blocking at all bends, tees, valves, and changes in direction, in accordance with the Contract Drawings.

3.12 BACKFILLING

- A. As the various pipelines, conduits, etc. or parts of same are completed and inspected, the Contractor shall refill the space under, around and over with material as specified herein. Unless otherwise directed, all forms, bracing and lumber shall be removed during backfilling and the cavities and voids resulting from the removal shall be thoroughly backfilled.
- B. The bedding material shall be as specified and placed in accordance with the standard details. The limits of bedding shall be as indicated on the Standard Details for the respective pipes. The Contractor must use special care in placing this portion of the backfill so as to avoid injuring or moving the pipe when compacting the backfill. When the backfill has progressed to the limits shown on the Standard Details for the respective pipe, the work of backfilling shall be stopped, and the backfill in place shall be tamped or puddled as directed. Care shall be taken to prevent floating of the pipe.

- C. No cinders, rubbish, rocks, boulders, shale or other objectionable material shall be used as backfill against the pipe or in any part of the trench when, in the opinion of the Engineer, it will be injurious to the work. No backfilling shall be done with frozen materials upon frozen materials.
- D. Over sewers and other arched structures built in place and after the structure is completed and before the supports or centers are struck, the trenches shall be carefully filled by depositing without shock and by tamping suitable earth or other selected material at the sides and to a height not less than two (2) feet above the top of the pipe. This backfill shall be graded evenly across the trench. This backfilling must be done as the work progresses, and before any filling is deposited directly from a machine, bucket, cars, wagon, or other vehicles. The backfilling shall then be brought up evenly and all eccentric loading shall be avoided. In no case shall material dumped from bucket, truck or bulldozer be allowed to fall directly upon any conduit, pipe or other structure, and, in all cases, the bucket must be lowered so that the shock of the falling material will not injure the structure.
- E. The backfill shall be placed and compacted, using power driven mechanical tampers in layers of six (6) inch compacted thickness unless approved by the Engineer. Final paving shall be as shown on the Contract Drawings and Standard Details.

3.13 DISPOSAL OF WASTE

- A. A selected portion of the excavate material will be used for backfilling or filling about the pipe as ordered. Excavated material in excess of that needed for backfilling and filling and unsuitable material shall be disposed of by the Contractor at his own expense, and the cost of such disposal shall be deemed as having been included in the unit or lump sum prices bid.
- B. Prior to disposal, the Contractor shall obtain and submit to the Engineer written permission from the owner of the property upon which the material and debris are to be placed.

3.14 COMPACTION REQUIREMENTS

- A. Control soil compaction during construction to provide the minimum percentage of density specified for each area as determined according to ASTM D698.
- B. Provide not less than the following maximum density of soil material compacted at optimum moisture content for the actual density of each layer of soil material in place, and as approved by the Engineer:
 - 1. Structures, Pavements, Walkways, Curbs and Steps:
 - a. Compact the subgrade and each layer of fill material or backfill material at 98% of maximum density.
 - 2. Lawn and Unpaved Area:
 - a. Compact each layer of fill material or backfill material at 90% of maximum density.

C. Moisture Control:

1. Where subgrade or layer of soil material must be moisture conditioned before compacting, uniformly apply water to surface of subgrade or layer of soil material to prevent free water appearing on surface during or subsequent to compacting operations.
 - a. Remove and replace, or scarify and air dry, soil material that is too wet to permit compacting to specified density.
 - b. Soil material that has been removed because it is too wet to permit compacting may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing, or pulverizing until moisture content is reduced to a satisfactory value as determined by moisture-density relation tests approved by the test laboratory.

D. Unsuitable Backfill Material:

1. Where the Engineer deems backfill material to be unsuitable and rejects all or part thereof due to conditions prevailing at the time of construction, remove the unsuitable material and replace with select material stone backfill or suitable foreign backfill material.
2. Compaction testing shall be required every 100 cubic yards or as required by the Engineer. Backfill found to be deficient shall be removed and re-compacted until compliant at no additional cost to the Owner.

3.15 UTILITY MARKING TAPE

- A. Install detectable utility marking tape above all plastic pipelines, eighteen (18) to twenty-four (24) inches below final grade.

3.16 ROUGH GRADING

- A. Rough grade areas disturbed by construction to a uniform finish. Form the bases for terraces, banks, lawns and paved areas.
- B. Grade areas to be paved to depths required for placing sub-base and paving materials.
- C. Rough grade areas to be seeded three (3) inches below indicated finish contours.

3.17 RESTORATION OF UNPAVED SURFACES

- A. Restore unpaved surfaces disturbed by construction to equal the surface condition prior to construction.
- B. Restore grassed areas in accordance with Section 329200.19, Seeding and Mulching.

3.18 MAINTENANCE

- A. Protection of newly graded areas:

1. Protect newly graded areas from traffic and erosion, and keep free from trash and weeds.
 2. Repair and reestablish grades in settled, eroded, and rutted areas to the specified tolerances.
- B. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify the surface, reshape, and compact to the required density prior to further construction.

END OF SECTION 312316.13

SECTION 312323.14 – COMPACTED GRANULAR BACKFILL

PART 1 - GENERAL

1.1 SCOPE

- A. The Contractor shall furnish all the materials from the top of bedding to the pavement sub grade and shall properly place and compact gravel backfill, as approved, over conduits, pipelines and elsewhere, when ordered by the Engineer, when they are located under pavement or cross under roads, drives and elsewhere when backfill is required to be accomplished without future settlement, and only when and as called for by the Drawings or as may be ordered by the Engineer.
- B. Gravel, or other granular material that is excavated from the project area as part of the excavation shall not be used for the purposes of this specification.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Backfill material shall be crushed limestone granular material meeting the requirements of ODOT CMS Item 304.

PART 3 - EXECUTION

3.1 PLACING

- A. Granular backfill, when called for by the Drawings, or ordered by the Engineer, for trench backfill shall be properly graded and placed in layers not over six (6") inches in depth, with voids reduced to a minimum, and thoroughly compacted with power driven mechanical tampers, or as directed by the Engineer. The placing of this material shall be continued until the required depth is compacted, and the top of this backfill shall be finished to the lines and grades called for by the Drawings, or as ordered by the Engineer. Should settlement occur, the Contractor must add and compact additional fill, and he must maintain the backfill at the required sub grade until the project is satisfactorily completed.

3.2 COMPACTION

- A. Minimum compaction for compacted granular material shall be 98 percent of the maximum dry density of the backfill material.
- B. At the beginning of compaction operations, the Contractor shall construct a test section in accordance with ODOT CMS Supplement 1015. Utilizing the test section, the Contractor shall establish the minimum compactive effort required to achieve the required trench compaction.

- C. Utilizing the minimum compactive effort established via the test section, installation of the compacted granular material may proceed without further compaction tests so long as the following conditions are maintained:
 - 1. The established minimum compactive effort is utilized throughout the installation area.
 - 2. Maximum lift thicknesses are maintained.
 - 3. Material and or the supporting materials are not appreciably different from those utilized in performance of the test section.
 - 4. Observation of the material within the trench does not reflect any areas where compaction visually appears inadequate.

- D. In areas where, in the judgement of the Owner or his designated representative, the compaction of the material within the trench appears to be inadequate, the Owner or his designee may require a compaction test to be performed by the Contractor. Testing to demonstrate the compaction of the in place material shall be the responsibility of the Contractor.

- E. It shall be the responsibility of the Contractor to perform compaction tests according to ODOT CMS Supplement 1015, or as required by the Owner or his designated representative. Tests shall be performed by competent personnel and with equipment made for the purposes intended and kept in good repair and working order. When, in the judgement of the Owner or his designated representative that the personnel performing the tests are not competent to do so or the equipment provided is not adequate, the Owner may order, at his sole discretion, that a certified soils testing laboratory perform tests and provide test reports to establish that the material and work conform with Project requirements.

- F. When material and/or the supporting materials change appreciably, placing the performance of the initial test section in question, the Contractor shall construct a new test section in accordance with ODOT CMS Supplement 1015 to establish revised compactive effort requirements for the project.

END OF SECTION 312323.14

SECTION 312500 – EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 REFERENCE

- A. All applicable requirements of other portions of the Contract Documents apply to the Work of this Section.
- B. All requirements of the Storm Water Pollution Prevention Plan and Erosion Control Plan included in the project plans.

1.2 DESCRIPTION OF WORK

- A. Work of this section includes, but is not limited to:
 - 1. Construction of sediment control measures
 - 2. Periodic cleanout of sediment traps and disposal of silt
 - 3. Maintenance of public and private travel ways in clean condition
 - 4. Removal of sediment control devices
 - 5. Temporary stabilization, including stockpiles

1.3 QUALITY ASSURANCE

- A. All pre-packaged standard products shall have the Manufacturer's certified analysis affixed and conform to regulatory requirements.
- B. Sediment control measures depicted on the Drawings are intended to be minimum requirements to meet anticipated site conditions.
- C. When no sediment control facility is shown on the Drawings, the Contractor shall provide and design the facility to prevent salutation of adjacent property or streams.
- D. All erosion and sediment control measures shall be installed per specifications of Ohio Department of Natural Resources: Rainwater and Land Development; Ohio's Standards for Storm Water Management and Land Development and Urban Stream Protection. All construction shall conform to the requirements thereof.

1.4 SCHEDULE

- A. Required sediment control facilities must be in operation prior to land clearing and/or other construction, to ensure that sediment-laden water does not enter the natural drainage system.
- B. Sediment control measures shall be maintained in a satisfactory condition until such time that cleaning and/or construction is completed and approval received by the Engineer.
- C. Construction sequence shall be as specified on the Drawings and as specified in applicable portions of these Specifications.

- D. The implementation, maintenance, replacement and additions to sediment control measures shall be the responsibility of the Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials shall meet the requirements of the Ohio EPA and Ohio Department of Natural Resources and as specified in applicable portions of these Specifications.

PART 3 - EXECUTION

3.1 GENERAL

- A. Sediment control provisions shall meet or exceed the requirements of the Ohio EPA Division of Surface Water.
- B. As construction progresses and seasonal conditions dictate, more sediment control facilities may be required. It shall be the responsibility of the Contractor to address new conditions that may be created and to provide additional facilities over and above minimum requirements as may be required.
- C. Wherever possible, the Contractor shall limit grading to only those areas involved in current construction activities and will limit the length of time of exposure and unprotected graded areas. The Contractor shall accomplish either temporary or permanent stabilization of these areas at the earliest opportunity.
- D. The Contractor shall provide all labor, materials, equipment and supervision to install erosion and sediment controls as shown on the Contract Drawings and/or specified herein. Work shall include but not be limited to excavation and shaping of existing ground, placement of silt fence, or as required complying with the U.S. Soil Conservation Service (USSCS) requirements. Work shall include furnishing, installing and maintaining all facilities and procedures necessary to maintain compliance with the local County Erosion and Sedimentation Control Ordinance and the USSCS Handbook.
- E. The work described herein and/or noted on the Contract Drawings shall be the first work performed under this Contract and no other work shall be performed until this work is completed and ready for use.
- F. The Contractor shall take all necessary precautions and measures to protect all properties from damage. He shall repair all damage caused by his operations to all public and private property including roads, walks, curbs, utilities, trees, shrubs, plantings, etc. and leave each property in good condition and/or at least equivalent to the condition found.

3.2 PROTECTIVE MEASURES

- A. Temporary silt fence shall be provided at the locations deemed necessary by the Owner, Engineer or Contractor.

- B. No debris or obstruction shall be left unstabilized in flood plains or stream areas beyond the period of project construction.
- C. The method of construction in flood plains shall provide for daily protection of all disturbed areas. Any cross-drainage through flood plains shall be safely channeled through disturbed areas to protect outlets.
- D. Storm drainage systems shall be kept operable and free of all excavated material.
- E. When the season permits, permanent vegetation stabilization of disturbed areas shall immediately follow the construction work. If permanent vegetative measures cannot be applied, temporary controls shall be used until the appropriate planting season.
- F. The Contractor shall maintain the silt fence until the project is completed and the threat of erosion and sedimentation from project construction is no longer present. Any displacement, ruptures, breaks or failure of the silt fence during the contract period shall be immediately repaired by the Contractor before resumption of construction activities with no additional cost to the Owner.
- G. Additional measures required by agencies having inspection authority for sediment and erosion control not outlined herein or detailed on the Contract Drawings shall be performed by the Contractor at no additional cost to the Owner.

END OF SECTION 312500

SECTION 312514 – STABILIZATION MEASURES FOR EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Water, erosion, and sediment control.

1.2 REFERENCES

- A. Rainwater and Land Development Manual, 2006, prepared by the Ohio Department of Natural Resources.
- B. Ohio Department of Transportation Construction and Material Specifications (ODOT-CMS).
- C. Section 329219 – Seeding and Mulching.

PART 2 - PRODUCTS

2.1 SILT FENCE MATERIALS

- A. Silt fence fabric shall be ODOT Type C Geotextile fabric or as described in the chart below:

Fabric Properties	
Minimum Tensile Strength	120 lbs
Maximum Elongation at 60 lbs	50%
Minimum Puncture Strength	50 lbs
Minimum Tear Strength	40 lbs
Minimum Burst Strength	200 psi
Apparent Opening Size	≤ 0.84mm
Minimum Permittivity	$1 \times 10^{-2} \text{ sec.}^{-1}$
Ultraviolet Exposure Strength Retention	70%

- B. Fence Posts – The length shall be a minimum of 32 inches long. Wood posts will be 2 inch by 2 inch hardwood of sound quality. The maximum spacing between posts shall be 10 feet.

2.2 MULCH MATERIALS

- A. Straw – Straw shall be unrotted small grain applied at the rate of 2 tons/acre or 90 pounds/1,000 square feet (two to three bales). The straw mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 square foot sections and place two 45 pound bales of straw in each section.

- B. Hydroseeders – Wood cellulose fiber should be used at 2,000 pounds/acre or 46 pounds/1,000 square feet.
- C. Other – Other acceptable mulches include mulch matting applied according to manufacturer's recommendations or wood chips applied as 10-20 ton/acre.

2.3 MATTING MATERIALS

- A. Excelsior matting shall be 48 inches wide and weigh an average of 0.75 pound/square yard or greater.
- B. Jute matting shall be 48 inches wide and weigh an average of 0.75 pounds/square yard or greater.
- C. Matting made of other material and providing equal or greater stabilization than the above may be submitted.

2.4 FILTER BERM MATERIALS

- A. Compost used for filter berms shall be weed, pathogen and insect free and free of any refuse, contaminants or other materials toxic to plant growth. They shall be derived from a well-decomposed source of organic matter and consist of a particles ranging from 1/4" to 3".

2.5 FILTER SOCK MATERIALS

- A. Compost used for filter socks shall be weed, pathogen and insect free and free of any refuse, contaminants or other materials toxic to plant growth. They shall be derived from a well-decomposed source of organic matter and consist of a particles ranging from 3/8" to 2".
- B. Filter Socks shall be 3 or 5 mil continuous, tubular, HDPE 3/8" knitted mesh netting material, filled with compost passing the above specifications for compost products.

2.6 TEMPORARY SEED MIXTURES

- A. Temporary seeding mixtures shall comply with the following table:

Seeding Dates	Species	Lb./1000 ft2	Lb/Acre
March 1 to August 15	Oats	3	128 (4 Bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Perennial Ryegrass	1	40
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	55
	Perennial Ryegrass	3.25	142
	Creeping Red Fescue	0.4	17
	Kentucky Bluegrass	0.4	17
	Oats	3	128 (3 bushel)
	Tall Fescue	1	40
Annual Ryegrass	1	40	
August 16th to November	Rye	3	112 (2 bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Wheat	3	120 (2 bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Perennial Rye	1	40
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	40
	Perennial Ryegrass	3.25	40
	Creeping Red Fescue	0.4	40
Kentucky Bluegrass	0.4		
November 1 to Feb. 29	Use mulch only or dormant seeding.		
Note: Other approved species may be substituted.			

2.7 GEOTEXTILES FOR CONSTRUCTION ENTRANCES

- A. Geotextiles utilized in the installation of construction entrances shall meet the following parameters:

Minimum Tensile Strength	200 lbs.
Minimum Puncture Strength	80 psi.
Minimum Tear Strength	50 lbs.
Minimum Burst Strength	320 psi.
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm.
Permittivity	1×10^{-3} cm/sec.

PART 3 - EXECUTION

3.1 GENERAL WATER, EROSION AND SEDIMENT CONTROL

- A. CONTRACTOR shall grade site to drain and shall maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. CONTRACTOR shall protect site from puddling or running water.
- C. CONTRACTOR shall provide erosion control measures as necessary to control discharge of sediment-laden water to surface waters and wetlands.
- D. CONTRACTOR shall use jute or synthetic netting, silt fences, straw bales, dikes, channels, check dams and other applicable measures to prevent erosion of soils disturbed by its construction operation.

3.2 INSTALLATION OF SEDIMENT BASINS

- A. Sediment basins shall be constructed and operational before upslope land disturbance begins.
- B. Site Preparation - The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. The pool area shall be cleared as needed to facilitate sediment cleanout. Gullies and sharp breaks shall be sloped to no steeper than 1:1. The surface of the foundation area will be thoroughly scarified before placement of the embankment material.
- C. Cut-Off Trench -The cutoff trench shall be excavated along the centerline of the embankment. The minimum depth shall be 3 ft. unless specified deeper on the plans or as a result of site conditions. The minimum bottom width shall be 4 ft., but wide enough to permit operation of compaction equipment. The trench shall be kept free of standing water during backfill operations.
- D. Embankment -The fill material shall be free of all sod, roots, frozen soil, stones over 6 in. in diameter, and other objectionable material. The placing and spreading of the fill material shall be started at the lowest point of the foundation and the fill shall be brought up in approximately 6 in. horizontal layers or of such thickness that the required compaction can be obtained with the equipment used. Construction equipment shall be operated over each layer in a way that will result in the required compaction. Special equipment shall be used when the required compaction cannot be obtained without it. The moisture content of fill material shall be such that the required degree of compaction can be obtained with the equipment used.
- E. Pipe Spillway -The pipe conduit barrel shall be placed on a firm foundation to the lines and grades shown on the plans. Connections between the riser and barrel, the anti-seep collars and barrel and all pipe joints shall be watertight. Selected backfill material shall be placed around the conduit in layers and each layer shall be compacted to at least the same density as the adjacent embankment. All compaction within 2 ft. of the pipe spillway will be accomplished with hand-operated tamping equipment.
- F. Riser Pipe Base -The riser pipe shall be set a minimum of 6 in. in the concrete base.
- G. Trash Racks -The top of the riser shall be fitted with trash racks firmly fastened to the

riser pipe.

- H. Emergency Spillway – The emergency spillway shall be cut in undisturbed ground. Accurate construction of the spillway elevation and width is critical and shall be within a tolerance of 0.2 ft.
- I. Seed and Mulch – The sediment basin shall be stabilized immediately following its construction. In no case shall the embankment or emergency spillway remain bare for more than 7 days.
- J. Sediment Cleanout -Sediment shall be removed and the sediment basin restored to its original dimensions when the sediment has filled one-half the pond's original depth or as indicated on the plans. Sediment removed from the basin shall be placed so that it will not erode.
- K. Final removal - Sediment basins shall be removed after the upstream drainage area is stabilized or as indicated in the plans. Dewatering and removal shall NOT cause sediment to be discharged. The sediment basin site and sediment removed from the basin shall be stabilized.

3.3 INSTALLATION OF SEDIMENT TRAPS

- A. Work shall consist of the installation, maintenance and removal of all sediment traps at the locations designated on the drawings.
- B. Sediment traps shall be constructed to the dimensions specified on the drawings and operational prior to upslope land disturbance.
- C. The area beneath the embankment shall be cleared, grubbed and stripped of vegetation to a minimum depth of six (6) inches. The pool shall be cleared as needed to facilitate sediment cleanout.
- D. Fill used for the embankment shall be evaluated to assure its suitability and it must be free of roots or other woody vegetation, large rocks, organics or other objectionable materials. Fill material shall be placed in six (6) inch lifts and shall be compacted by traversing with a sheepsfoot or other approved compaction equipment. Fill height shall be increased five (5) percent to allow for structure/foundation settlement. Construction shall not be permitted if either the earthfill or compaction surface is frozen.
- E. The maximum height of embankment shall be five (5) feet. All cut and fill slopes shall be 2:1 (H:V) or flatter.
- F. A minimum storage volume below the crest of the outlet of 67 yd³. for every acre of contributing drainage area shall be achieved at each location noted on the drawings with additional sediment storage volume provided below this elevation.
- G. Temporary seeding shall be established and maintained over the useful life of the practice.
- H. The outlet for the sediment trap structure shall be constructed to the dimensions shown on the drawings.

- I. The outlet shall be constructed using the materials specified on the drawings. Where geotextile is used, all overlaps shall be a minimum of two (2) feet or as specified by the manufacturer, whichever is greater. All overlaps shall be made with the upper most layer placed last. Geotextile shall be keyed in at least 6" on the upstream side of the outlet.
- J. Warning signs and safety fence shall be placed around the traps and maintained over the life of the practice.
- K. After all sediment-producing areas have been permanently stabilized, the structure and all associated sediment shall be removed. Stable earth materials shall be placed in the sediment trap area and compacted. The area shall be graded to blend in with adjoining land surfaces and have positive drainage. The area shall be immediately seeded.

3.4 INSTALLATION AND MAINTENANCE OF SILT FENCE

- A. Silt fence shall be constructed before upslope land disturbance begins.
- B. All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
- C. Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
- D. Silt fence shall be placed on the flattest area available.
- E. Where possible, vegetation shall be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.
- F. The height of the silt fence shall be a minimum of 16 inches above the original ground surface.
- G. The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
- H. The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 6-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
- I. Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground.
- J. Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, one of the following shall be performed, as appropriate: 1) the layout of the silt fence shall be changed, 2) accumulated sediment shall be removed, or 3) other practices shall be installed.

- K. Sediment deposits shall be routinely removed when the deposit reaches approximately one-half of the height of the silt fence.
- L. Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

3.5 INSTALLATION OF STORM DRAIN INLET PROTECTION – EXCAVATED DROP INLET SEDIMENT PROTECTION

- A. The excavated trap should be sized to provide a minimum storage capacity calculated at the rate of 135 cubic yards for one (1) acre of drainage area. A trap should be no less than one (1) foot, nor more than two (2) feet deep measured from the top of the inlet structure. Side slopes should not be steeper than 2:1.
- B. The slopes of the trap may vary to fit the drainage area and terrain.
- C. Where the area receives concentrated flows, such as in a highway median, provide the trap with a shape having a 2:1 ratio of length to width, with the length oriented in the direction of the flow.
- D. Sediment should be removed and the trap restored to the original depth when the sediment has accumulated to 40% the design depth of the trap. Removed sediment should be spread in a suitable area and stabilized so it will not erode.
- E. During final grading, the inlet should be protected with geotextile-stone inlet protection. Once final grading is achieved, sod or a suitable temporary erosion control material shall be implemented to protect the area until permanent vegetation is established.

3.6 INSTALLATION OF STORM DRAIN INLET PROTECTION – GEOTEXTILE INLET PROTECTION

- A. Inlet protection shall be constructed either before upslope land disturbance begins or before the storm drain becomes operational.
- B. The earth around the inlet shall be excavated completely to a depth of at least 18 inches.
- C. The wooden frame shall be constructed of 2 inch by 4 inch construction grade lumber. The 2 inch by 4 inch posts shall be driven 1 foot into the ground at four corners of the inlet and 2 inch by 4 inch frame assembled using a lap joint. The top of the frame shall be at least 5 inches below adjacent road if ponded water would pose a safety hazard to traffic.
- D. Wire mesh shall be of sufficient strength to support fabric with water fully impounded against it. It shall be stretched tightly around the frame and fastened securely to the frame.
- E. Geotextiles shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 inches below the inlet notch elevation. The geotextile shall overlap across one side of the inlet so the ends of the cloth are not fastened

to the same post.

- F. Backfill shall be placed around the inlet in compacted 6 inch layers until the earth is even with notch elevation on ends and top elevation on sides.
- G. A compacted earth dike or check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression and if runoff bypassing the inlet will flow to setting pond. The top of earth dikes shall be at least 6 inches higher than the top of the frame.

3.7 INSTALLATION OF STORM DRAIN INLET PROTECTION – GEOTEXTILE-STONE INLET PROTECTION

- A. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
- B. Geotextile and/or wire material shall be placed over the top of the storm sewer and approximately six (6) inches of 2-inch or smaller clean aggregate placed on top. Extra support for geotextile is provided by placing hardware cloth or wire mesh across the inlet cover. The wire should be no larger than ½" mesh and should extend an extra 12 inches across the top and sides of the inlet cover.
- C. Maintenance must be performed regularly, especially after storm events. When clogging of the stone or geotextile occurs, the material must be removed and replaced.

3.8 STORM DRAIN INLET PROTECTION – GEOTEXTILE-STONE INLET PROTECTION FOR CURB INLETS

- A. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
- B. Construct a wooden frame of 2-by-4-in. construction-grade lumber. The end spacers shall be a minimum of 1 ft. beyond both ends of the throat opening. The anchors shall be nailed to 2-by-4-in. stakes driven on the opposite side of the curb.
- C. The wire mesh shall be of sufficient strength to support fabric and stone. It shall be a continuous piece with a minimum width of 30 in. and 4 ft. longer than the throat length of the inlet, 2 ft. on each side.
- D. Geotextile cloth shall have an equivalent opening size (EOS) of 20-40 sieve and be resistant to sunlight. It shall be at least the same size as the wire mesh.
- E. The wire mesh and geotextile cloth shall be formed to the concrete gutter and against the face of the curb on both sides of the inlet and securely fastened to the 2-by-4-in. frame.
- F. Two-inch stone shall be placed over the wire mesh and geotextile in such a manner as to prevent water from entering the inlet under or around the geotextile cloth.
- G. This type of protection must be inspected frequently and the stone and/or geotextile replaced when clogged with sediment.

3.9 INSTALLATION OF STORM DRAIN INLET PROTECTION – BLOCK AND GRAVEL DROP INLET FILTER

- A. Place 4-inch by 8-inch by 12-inch concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, with the ends of adjacent blocks abutting. The height of the barrier can be varied, depending upon the design needs, by stacking combinations of the same size blocks. The barrier of blocks should be at least 12-inches high but no greater than 24-inches high.
- B. Wire mesh should be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the block cores. Hardware cloth or comparable wire mesh with ½-inch openings should be used.
- C. Two-inch stone should be piled against the wire to the top of the block barrier, as shown below.
- D. If the stone filter becomes clogged with sediment so that it no longer adequately performs its function, pull stone away from the blocks, clean and/or replace.

3.10 INSTALLATION AND MAINTENANCE OF FILTER BERM

- A. Filter berms will be placed on a level line across slopes, generally parallel to the base of the slope or other affected area. On slopes approaching 2:1, additional berms shall be provided at the top and as needed mid-slope.
- B. Filter berms are not to be used in concentrated flow situations or in runoff channels.
- C. Maintenance – Inspect filter berms after each significant rain, maintaining the berms in a functional condition at all times. Remove sediments collected at the base of the filter berms when they reach 1/3 of the exposed height of the practice. Where the filter berm deteriorates or fails it will be, it will be repaired or replaced with a more effective alternative.
- D. Removal – Filter berms no longer needed will be dispersed on site in a manner that will facilitate seeding.

3.11 INSTALLATION AND MAINTENANCE OF FILTER SOCK

- A. Filter socks will be placed on a level line across slopes, generally parallel to the base of the slope or other affected area. On slopes approaching 2:1, additional socks shall be provided at the top and as needed mid-slope.
- B. Filter socks intended to be left as a permanent filter or part of the natural landscape, shall be seeded at the time of installation for establishment of permanent vegetation.
- C. Filter Socks are not to be used in concentrated flow situations or in runoff channels.
- D. Routinely inspect filter socks after each significant rain, maintaining filter socks in a functional condition at all times.

- E. Remove sediments collected at the base of the filter socks when they reach 1/3 of the exposed height of the practice.
- F. Where the filter sock deteriorates or fails, it will be repaired or replaced with a more effective alternative.
- G. Filter socks will be dispersed on site when no longer required in such a way as to facilitate and not obstruct seedings.

3.12 INSTALLATION OF ROCK CHECK DAMS

- A. The check dam shall be constructed of 4-8 inch diameter stone, placed so that it completely covers the width of the channel. ODOT Type D stone is acceptable, but should be underlain with a gravel filter consisting of ODOT No. 3 or 4 or suitable filter fabric.
- B. Maximum height of check dam shall not exceed 3.0 feet.
- C. The midpoint of the rock check dam shall be a minimum of 6 inches lower than the sides in order to direct across the center and away from the channel sides.
- D. The base of the check dam shall be entrenched approximately 6 inches.
- E. Spacing of check dams shall be in a manner such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.
- F. A Splash Apron shall be constructed where check dams are expected to be in use for an extended period of time, a stone apron shall be constructed immediately downstream of the check dam to prevent flows from undercutting the structure. The apron should be 6 in. thick and its length two times the height of the dam.
- G. Stone placement shall be performed either by hand or mechanically as long as the center of check dam is lower than the sides and extends across entire channel.
- H. Side slopes shall be a minimum of 2:1.

3.13 INSTALLATION OF SLOPE DRAINS

- A. The slope drain shall be constructed on a minimum slope of 3 percent.
- B. All points along the top of the dike/earthfill for the storage area shall be at least one (1) foot higher than the top of the inlet pipe.
- C. The pipe drain may be constructed of corrugated metal or PVC pipe. All pipe connections shall be watertight. Flexible tubing may be used, provided rigid pipe is use for the inlet, the flexible tubing is of the same diameter as the inlet, and pipe connections are made with metal strapping or watertight connecting collars. The flexible pipe shall be constructed with hold down apparatus spaced on 10 foot centers for anchoring the pipe.
- D. The entrance to the pipe shall be a hooded type.

- E. The soil around and/or under the pipe shall be placed in 4-inch layers and hand compacted to the top of the earth dike.
- F. A riprap apron shall be installed at the pipe outlet where clean water is discharged into a stabilized area or drainageway.

3.14 INSTALLATION OF TEMPORARY DIVERSIONS

- A. Drainage area should not exceed 10 acres. Larger areas require a more extensive design.
- B. The channel cross section may be parabolic or trapezoidal. Disk the base of the dike before placing fill. Build the dike 10% higher than designed for settlement. The dike shall be compacted by traversing with tracked earth-moving equipment.
- C. The minimum cross section of the levee or dike will be as follows: (Minimum design freeboard shall be 0.3 foot.) Where construction traffic will cross, the top width may be made wider and the side slopes flatter than specified below.

Dike Top Width (ft.)	Height (ft.)	Side Slopes	Shape
0	1.5	4.1	Trapezoidal
4	1.5	2.1	Parabolic

- D. The grade may be variable depending upon the topography, but must have a positive drainage to the outlet and be stabilized to be non-erosive.

Temporary Diversion Stabilization Treatment			
Diversion Slope	< 2 acres	2 – 5 acres	5 – 10 acres
0 – 3 %	Seed and straw	Seed and straw	Seed and straw
3 – 5%	Seed and straw	Seed and straw	Matting
5 – 8%	Seed and straw	Matting	Matting
8 – 20%	Seed and straw	Matting	Engineered
Note: Diversions with steeper slopes or greater drainage areas are beyond the scope of this standard and must be designed for stability. Seed, straw and matting used shall meet the Specifications for Temporary Seeding, Mulching and Matting.			

- E. Outlet runoff onto a stabilized area, into a properly designed waterway, grade stabilization structure, or sediment trapping facility.
- F. Diversions shall be seeded and mulched in accordance with the requirements outlined herein as soon as they are constructed or other suitable stabilization shall be applied in order to preserve dike height and reduce maintenance.

3.15 INSTALLATION OF TEMPORARY DIVERSIONS ABOVE STEEP SLOPES

- A. Drainage area should not exceed 5 acres. Larger areas require a more extensive design.
- B. The channel cross section may be parabolic, v-shaped, or trapezoidal. Disk the base of the dike before placing fill. Build the dike 10% higher than designed for settlement. The

dike shall be compacted by traversing with tracked earth-moving equipment.

- C. The minimum cross section of the levee or dike will be as follows: (Minimum design freeboard shall be 0.3 foot.)

Dike Top Width (ft.)	Height (ft.)	Side Slopes	Shape
0	1.5	4.1	Trapezoidal
4	1.5	2.1	Parabolic

- D. The grade may be variable depending upon the topography, but must have a positive drainage to the outlet and be stabilized to be non-erosive.

Temporary Diversion Stabilization Treatment			
Diversion Slope	< 2 acres	2 – 5 acres	5 – 10 acres
0 – 3 %	Seed and straw	Seed and straw	Seed and straw
3 – 5%	Seed and straw	Seed and straw	Matting
5 – 8%	Seed and straw	Matting	Matting
8 – 20%	Seed and straw	Matting	Engineered
Note: Diversions with steeper slopes or greater drainage areas are beyond the scope of this standard and must be designed for stability. Seed, straw and matting used shall meet the Specifications for Temporary Seeding, Mulching and Matting.			

- E. Outlet runoff onto a stabilized area, settling pond, or into a drop structure.
- F. Diversions shall be seeded and mulched in accordance with the requirements specified herein as soon as they are constructed or other suitable stabilization shall be applied in order to preserve dike height and reduce maintenance.

3.16 EROSION CONTROL METHODS FOR INSTALLATION OF STREAM UTILITY CROSSINGS

- A. When site conditions allow, one of the following shall be used to divert stream flow or keep the flow away from construction activity.
1. Drill or bore the utility lines under the stream channel.
 2. Construct a cofferdam or barricade of sheet pilings, sandbags or a turbidity curtain to keep flow from moving through the disturbed area. Turbidity curtains shall be a pre-assembled system and used only parallel to flow.
 3. Stage construction by confining first one-half of the channel until work there is completed and stabilized, then move to the other side to complete the crossing.
 4. Route the stream flow around the work area by bridging the trench with a rigid culvert, pumping, or constructing a temporary channel. Temporary channels shall be stabilized by rock or a geotextile completely lining the channel bottom and side slopes.
- B. Crossing Width -The width of clearing shall be minimized through the riparian area. The limits of disturbance shall be as narrow as possible including not only construction operations within the channel itself but also clearing done through the vegetation growing

on the streambanks.

- C. Clearing shall be done by cutting NOT grubbing. The roots and stumps shall be left in place to help stabilize the banks and accelerate revegetation.
- D. Material excavated from the trench shall be placed at least 20 ft. from the streambanks.
- E. To the extent other constraints allow, stream shall be crossed during periods of low flow.
- F. Duration of Construction -The time between initial disturbance of the stream and final stabilization shall be kept to a minimum. Construction shall not begin on the crossing until the utility line is in place to within 10 ft. of the streambank.
- G. Fill Placed Within the Channel -The only fill permitted in the channel should be clean aggregate, stone or rock. No soil or other fine erodible material shall be placed in the channel. This restriction includes all fill for temporary crossings, diversions, and trench backfill when placed in flowing water. If the stream flow is diverted away from construction activity the material originally excavated from the trench may be used to backfill the trench.
- H. Streambank Restorations -Streambanks shall be restored to their original line and grade and stabilized with riprap or vegetative bank stabilization.
- I. Runoff Control Along the Right-of-Way -To prevent sediment-laden runoff from flowing to the stream, runoff shall be diverted with water bar or swales to a sediment trapping practice a minimum of 50 ft. from the stream.
- J. Sediment laden water from pumping or dewatering or pumping shall not be discharged directly to a stream. Flow shall be routed through a settling pond, dewatering sump or a flat, well-vegetated area adequate for removing sediment before the pumped water reaches the stream.
- K. Dewatering operations shall not cause significant reductions in stream temperatures. If groundwater is to be discharged in high volumes during summer months, it shall first be routed through a settling pond or overland through a flat well-vegetated area.
- L. Permits -In addition to these specifications, stream crossings shall conform to the rules and regulations of the U.S. Army Corps of Engineers for in-stream modifications (404 permits) and Ohio Environmental Protection Agency's State Water Quality Certification (401 permits).

3.17 INSTALLATION OF CULVERT STREAM CROSSING

- A. Stream Disturbance -Disturbance to the stream shall be kept to a minimum. Streambank vegetation shall be preserved to the maximum extent practical and the stream crossing shall be as narrow as practical.
- B. Clearing shall be done by cutting NOT grubbing. The roots and stumps shall be left in place to help stabilize the banks and accelerate revegetation.
- C. To minimize interference with fish spawning and migration, crossing construction should

be avoided where practical from March 15 through June 15.

- D. Water shall not be allowed to flow along the road directly to the stream. Diversions and swales shall direct runoff away from the access road to a sediment-control practice.
- E. Placement -Culverts shall be placed on the existing streambed to avoid a drop or waterfall at the downstream end of the pipe, which would be a barrier to fish migration. Crossings shall be made in shallow areas rather than deep pools where possible.
- F. Culvert Size -Culvert diameter shall be at least three times the depth of normal stream flow at the point of the stream crossing. If the crossing must be placed in deep, slow-moving pools, the culvert diameter may be reduced to twice the depth of normal stream flow. The minimum size culvert that may be used is 18 in.
- G. Number of Culverts -There shall be sufficient number of culverts to completely cross the stream channel from streambank to streambank with no more than a 12-in. space between each one.
- H. Fill and Surface Material -All material placed in the stream channel, around the culverts and on the surface of the crossing shall be stone, rock or aggregate. ODOT No. 1 shall be the minimum acceptable size. To prevent washouts, larger stone and rock may be used and they may be placed in gabion mattresses. No soil shall be used in the construction of a stream crossing or placed in the stream channel.
- I. Removal -Aggregate stone and rock used for this structure does not need to be removed. Care should be taken so that any aggregate left does not create an impoundment or impede fish passage. All pipes, culverts, gabions or structures must be removed.
- J. Stabilization -Streambanks shall be stabilized. Plantings shall include woody vegetation where practical.

3.18 INSTALLATION OF TEMPORARY STREAM FORD

- A. Timing -No construction or removal of a temporary stream ford will be permitted on perennial streams from March 15 through June 15 to minimize interference with fish spawning and migration.
- B. Stream Disturbance -Disturbance to the stream shall be kept to a minimum. Streambank vegetation shall be preserved to the maximum extent practical and the stream crossing shall be as narrow as practical. Clearing shall be done by cutting NOT grubbing where possible.
- C. Surface Runoff -Water shall not be allowed to flow along the road directly to the stream. Diversions and swales shall direct runoff away from the access road to a sediment-control practice.
- D. Fill and Surface Material -All material placed in the stream channel shall be stone, rock or aggregate. ODOT No. 1 shall be the minimum acceptable size. Larger stone and rock may be used. No soil shall be used in the construction of a stream ford or placed in the stream channel.

- E. Removal - Aggregate, stone and rock used for the stream crossing shall NOT be removed but shall be formed so it does not create an impoundment, impede fish passage, or cause erosion of streambanks.
- F. Stabilization -Streambanks shall be stabilized. Plantings shall include woody vegetation where practical.

3.19 INSTALLATION OF A WATER BAR

- A. The minimum water bar dimensions shall be:
 1. Top width of berm/dike – 2 feet minimum.
 2. Height/depth – 18 inches unless otherwise noted on plans.
 3. Side Slopes – Sufficiently flat to accommodate the expected traffic.
- B. The spacing between water bars shall be as follows:

Road Grade (%)	Distance (Ft.)
1	400
2	250
5	135
10	80
15	60
20	45

- C. The field location shall be adjusted as needed to provide a stabilized safe outlet.
- D. The diverted runoff shall be directed onto an undisturbed vegetative area, to a settling trap or basin or trap if contributing area is stable.
- E. Diversions/dikes shall be compacted by traversing with equipment during construction.
- F. The water bars shall be angled slightly downslope across the centerline of the travel lane.

3.20 EROSION CONTROL METHODS RELATED TO DEWATERING OPERATIONS

- A. A de-watering plan shall be developed prior to the commencement of any pumping activities.
- B. The de-watering plan shall include all pumps and related equipment necessary for the dewatering activities and designate areas for placement of practices. Outlets for practices shall be protected from scour either by riprap protection, fabric liner, or other acceptable method of outlet protection.
- C. Water that is not discharged into a settling/treatment basin but directly into waters of the state shall be monitored hourly. Discharged water shall be within +/- 5° F of the receiving waters.
- D. Settling basins shall not be greater than four (4) feet in depth. The basin shall be constructed for sediment storage as outlined herein for a Sediment Basin Or Sediment Trap. The inlet and outlet for the basin shall be located at the furthest points of the storage.

A floating outlet shall be used to ensure that settled solids do not re-suspend during the discharge process. The settling basin shall be cleaned out when the storage has been reduced by 50% of its original capacity.

- E. All necessary National, State and Local permits shall be secured prior to discharging into waters of the state.

3.21 TREE AND NATURAL PRESERVATION AREAS

- A. Tree and natural preservation areas shall be fenced prior to beginning clearing operations.
- B. Fence materials shall be metal fence posts with two strands of high tensile wire, plastic fence or snow fence.
- C. Signage shall clearly identify the tree and natural preservation area and state that no clearing or equipment is allowed within it.
- D. Fence shall be placed as shown on plans and beyond the drip line or canopy of trees to be protected.
- E. If any clearing is done around specimen trees it shall be done by cutting at ground level with hand held tools and shall not be grubbed or pulled out. No clearing shall be done in buffer strips or other preserved forested areas.
- F. If any clearing is done around specimen trees it shall be done by cutting at ground level with hand held tools and shall not be grubbed or pulled out. No clearing shall be done in buffer strips or other preserved forested areas.
- G. No filling or stockpiling of materials shall occur within the tree protection area, including deposition of sediment.

3.22 TREE PROTECTION DURING UTILITY INSTALLATION

- A. Where utilities must run through a tree's dripline area, tunneling should be used to minimize root damage. Tunneling should be performed at a minimum depth of 24 inches for trees less than 12 inches in diameter or at a minimum depth of 36 inches for larger diameter trees.
- B. Where tunneling will be performed within the dripline of a tree, the tunnel should be placed a minimum of 2 feet away from the tree trunk to avoid taproots.
- C. Minimize excavation or trenching within the dripline of the tree. Route trenches around the dripline of trees.
- D. Roots two inches or larger that are severed by trenching should be sawn off neatly in order to encourage new growth and discourage decay.
- E. Soil excavated during trenching shall be piled on the side away from the tree.
- F. Roots shall be kept moist while trenches are open and refilled immediately after utilities

are installed or repaired.

3.23 INSTALLATION OF CONSTRUCTION ENTRANCES

- A. Stone Size—ODOT # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.
- B. Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft. (exception: apply 30 ft. minimum to single residence lots).
- C. Thickness -The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
- D. Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
- E. Geotextile -A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the material specifications outlined above.
- F. Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
- G. Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.
- H. Water Bar -A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.
- I. Maintenance -Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.
- J. Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.
- K. Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

3.24 DUST CONTROL OPERATIONS

- A. Vegetative Cover and/mulch – Apply temporary or permanent seeding and mulch to areas that will remain idle for over 21 days. Saving existing trees and large shrubs will also reduce soil and air movement across disturbed areas. See Temporary Seeding; Permanent Seeding; Mulching Practices; and Tree and Natural Area Protection practices.

- B. Watering – Spray site with water until the surface is wet before and during grading and repeat as needed, especially on haul roads and other heavy traffic routes. Watering shall be done at a rate that prevents dust but does not cause soil erosion. Wetting agents shall be utilized according to manufacturer’s instructions.
- C. Spray-On Adhesives – Apply adhesive according to the following table or manufacturers’ instructions.

Adhesive	Water Dilution (Adhesive: Water)	Nozzle Type	Application Rate Gal./Ac.
Latex Emulsion	12.5:1	Fine	235
Resin in Water Acrylic Emulsion (No-traffic)	4:1	Fine	300
Acrylic Emulsion (No-traffic)	7:1	Coarse	450
Acrylic Emulsion (Traffic)	3.5:1	Coarse	350

- D. Stone – Graded roadways and other suitable areas will be stabilized using crushed stone or coarse gravel as soon as practicable after reaching an interim or final grade. Crushed stone or coarse gravel can be used as a permanent cover to provide control of soil emissions.
- E. Barriers – Existing windbreak vegetation shall be marked and preserved. Snow fencing or other suitable barrier may be placed perpendicular to prevailing air currents at intervals of about 15 times the barrier height to control air currents and blowing soil.
- F. Calcium Chloride - This chemical may be applied by mechanical spreader as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage. Application rates should be strictly in accordance with suppliers’ specified rates.
- G. Operation and Maintenance - When Temporary Dust Control measures are used; repetitive treatment should be applied as needed to accomplish control.
- H. Street Cleaning - Paved areas that have accumulated sediment from construction should be cleaned daily, or as needed, utilizing a street sweeper or bucket -type endloader or scraper.

3.25 GRADE TREATMENT (SLOPE ROUGHENING) FOR EROSION CONTROL

- A. Cut Slopes-Greater than 3:1 Slopes
 - 1. Stair-step grading may be carried out on any material soft enough to be ripped with a bulldozer. The ratio of the horizontal distance to the vertical cut distance shall be flatter than 1:1 and the horizontal portion of the “step” shall slope toward the vertical wall. Individual vertical cuts shall not be more than 24 inches on soft soil

materials and not more than 36 inches in rocky materials.

2. Grooving may be made with any appropriate implement which can be safely operated on the slope and which will not cause undue compaction. Suggested implements include discs, tillers, spring harrows, and the teeth on a front-end loader bucket. Such grooves shall not be less than 3 inches deep nor further than 15 inches apart.

B. Fill Slopes-Greater than 3:1 Slopes - Fill slopes steeper than 3:1 shall be grooved or allowed to remain rough as they are constructed utilizing one of the following methods:

1. Grooving may be made with any appropriate implement which can be safely operated on the slope and which will not cause undue compaction such as discs, tillers, spring harrows, and the teeth on a front-end loader bucket. Grooves left shall not be less than 3 inches deep nor further than 15 inches apart.
2. As lifts of the fill are constructed, soil and rock materials may be allowed to fall naturally onto the slope surface. At no time shall slopes be bladed or scraped to produce a smooth, hard surface.

C. Cuts, Fills, and Graded Areas Which Will Be Mowed

1. Mowed slopes should not be steeper than 3:1 and shall avoid excessive roughness. These areas may be roughened with shallow grooves such as those, which remain after tilling, discing, harrowing, raking, or use of a cultipacker-seeder. The final pass of any such tillage implement shall be on the contour (perpendicular to the slope).
2. Grooves formed by implements shall be not less than 1 inch deep and not further than 12 inches apart. Fill slopes that are left rough during construction may be smoothed with a chain harrow or similar implement to facilitate mowing.

D. Roughening With Tracked Machinery

1. Avoid tracking clayey soils if possible, due to their potential for compaction. Conversely sandy soils will have low potential for compaction.
2. Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. As few passes of the machinery should be made as possible to minimize compaction.

3.26 EROSION CONTROL DURING TOPSOILING OPERATIONS

A. Salvaging and Stockpiling

1. Determine the depth and suitability of topsoil at the site. (For help, contact your local SWCD office to obtain a county soil survey report).
2. Prior to stripping topsoil, install appropriate downslope erosion and sedimentation controls such as sediment traps and basins.
3. Remove the soil material no deeper than what the county soil survey describes as "surface soil" (ie. A or Ap horizon).
4. Construct stockpiles in accessible locations that do not interfere with natural drainage. Install appropriate sediment controls to trap sediment such as silt fence

immediately adjacent to the stockpile or sediment traps or basins downstream of the stockpile. Stockpile side slopes shall not exceed a ratio of 2:1.

5. If topsoil is stored for more than 21 days, it should be temporary seeded, or covered with a tarp.

B. Spreading the Topsoil

1. Prior to applying topsoil, the topsoil should be pulverized.
2. To ensure bonding, grade the subsoil and roughen the top 3-4 in. by disking.
3. Do not apply when site is wet, muddy, or frozen, because it makes spreading difficult, causes compaction problems, and inhibits bonding with subsoil.
4. Apply topsoil evenly to a depth of at least 4 inches and compact slightly to improve contact with subsoil.
5. After spreading, grade and stabilize with seeding or appropriate vegetation.

3.27 TEMPORARY SEEDING OPERATIONS FOR EROSION CONTROL

- A. Structural erosion and sediment control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the construction site.
- B. Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 21 days or greater. These idle areas shall be seeded within 7 days after grading.
- C. The seedbed should be pulverized and loose to ensure the success of establishing vegetation. Temporary seeding should not be postponed if ideal seedbed preparation is not possible.
- D. Soil Amendments—Temporary vegetation seeding rates shall establish adequate stands of vegetation, which may require the use of soil amendments. Base rates for lime and fertilizer shall be used.
- E. Seeding Method—Seed shall be applied uniformly with a cyclone spreader, drill, cultipacker seeder, or hydroseeder. When feasible, seed that has been broadcast shall be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used, the seed and fertilizer will be mixed on-site and the seeding shall be done immediately and without interruption.

3.28 MULCHING OF TEMPORARY SEEDING AREAS

- A. Applications of temporary seeding shall include mulch, which shall be applied during or immediately after seeding. Seedings made during optimum seeding dates on favorable, very flat soil conditions may not need mulch to achieve adequate stabilization.
- B. Materials:
 1. Straw—If straw is used, it shall be unrotted small-grain straw applied at a rate of 2 tons per acre or 90 lbs./ 1,000 sq. ft. (2-3 bales)

2. Hydroseeders—If wood cellulose fiber is used, it shall be used at 2000 lbs./ ac. or 46 lb./ 1,000-sq.-ft.
 3. Other—Other acceptable mulches include mulch mattings applied according to manufacturer’s recommendations or wood chips applied at 6 ton/ ac.
- C. Straw Mulch shall be anchored immediately to minimize loss by wind or water. Anchoring methods:
1. Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but left to a length of approximately 6 inches.
 2. Mulch Netting—Netting shall be used according to the manufacturers recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
 3. Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Track or equivalent may be used at rates recommended by the manufacturer.
 4. Wood-Cellulose Fiber—Wood-cellulose fiber binder shall be applied at a net dry wt. of 750 lb./ac. The wood-cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb. / 100 gal.

3.29 MULCHING FOR EROSION CONTROL

- A. Mulch and other appropriate vegetative practices shall be applied to disturbed areas within 7 days of grading if the area is to remain dormant (undisturbed) for more than 21 days or on areas and portions of the site which can be brought to final grade.
- B. Mulch shall consist of one of the following:
1. Straw - Straw shall be unrotted small grain straw applied at the rate of 2 tons/ac. or 90 lb./1,000 sq. ft. (two to three bales). The straw mulch shall be spread uniformly by hand or mechanically so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000 sq.ft. sections and place two 45-lb. bales of straw in each section.
 2. Hydroseeders - Wood cellulose fiber should be used at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
 3. Other - Acceptable mulches include mulch mattings and rolled erosion control products applied according to manufacturer’s recommendations or wood mulch/chips applied at 10-20 tons/ac.
- C. Mulch Anchoring - Mulch shall be anchored immediately to minimize loss by wind or runoff. The following are acceptable methods for anchoring mulch.
1. Mechanical - Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but be left generally longer than 6 inches.
 2. Mulch Nettings - Use according to the manufacturer’s recommendations, following all placement and anchoring requirements. Use in areas of water concentration and

- steep slopes to hold mulch in place.
3. Synthetic Binders - For straw mulch, synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petroset, Terra Tack or equal may be used at rates recommended by the manufacturer. All applications of Synthetic Binders must be conducted in such a manner where there is no contact with waters of the state.
 4. Wood Cellulose Fiber - Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 lb./acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal. of wood cellulose fiber.

3.30 INSTALLATION OF TEMPORARY ROLLED EROSION CONTROL PRODUCT (EROSION CONTROL MATTING)

- A. Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2"-3" of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed RECP will have direct contact with the soil surface.
- B. Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.
- C. Slope Installation
 1. Excavate top and bottom trenches (12"x6"). Intermittent erosion check slots (6"x6") may be required based on slope length. Excavate top anchor trench 2' x 3' over crest of the slope.
 2. If intermittent erosion check slots are required, install RECP in 6"x6" slot at a maximum of 30' centers or the mid-point of the slope. RECP should be stapled into trench on 12" centers.
 3. Install RECP in top anchor trench, anchor on 12" spacings, backfill and compact soil.
 4. Unroll RECP down slope with adjacent rolls overlapped a minimum of 3". Anchor the seam every 18". Lay the RECP loose to maintain direct soil contact, do not pull taught.
 5. Overlap roll ends a minimum of 12" with upslope RECP on top for a shingle effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".
 6. Install RECP in bottom anchor trench (12"x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependent on slope. Refer to manufacturer's anchor guide.
- D. Channel Installation
 1. Excavate initial anchor trench (12"x6") across the lower end of the project area.
 2. Excavate intermittent check slots (6"x6") across the channel at 30' intervals along the channel.
 3. Excavate longitudinal channel anchor slots (4"x4") along both sides of the channel to bury the edges. Whenever possible extend the RECP 2'-3' above the crest of

channel side slopes.

4. Install RECP in initial anchor trench (downstream) anchor every 12", backfill and compact soil.
5. Roll out RECP beginning in the center of the channel toward the intermittent check slot. Do not pull taught. Unroll adjacent rolls upstream with a 3" minimum overlap (anchor every 18") and up each channel side slope.
6. At top of channel side slopes install RECP in the longitudinal anchor slots, anchor every 18".
7. Install RECP in intermittent check slots. Lay into trench and secure with anchors every 12", backfill with soil and compact.
8. Overlap roll ends a minimum of 12" with upstream RECP on top for a shingling effect. Begin all new rolls in an intermittent check slot, double anchored every 12".
9. Install upstream end in a terminal anchor trench (12"x6"); anchor every 12", backfill and compact.
10. Complete anchoring throughout channel at 2.5 per square yard using suitable ground anchoring devices (U shaped wire staples, metal geotextile pins, plastic stakes, and triangular wooden stakes). Anchors should be of sufficient length to resist pullout. Longer anchors may be required in loose sandy or gravelly soils.

3.31 INSTALLATION OF TURF REINFORCEMENT MATTING (PERMANENT ROLLED EROSION CONTROL PRODUCTS)

- A. Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2"-3" of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed TRM will have direct contact with the soil surface.
- B. Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.
- C. Slope Installation
 1. Excavate top and bottom trenches (12"x6"). Intermittent erosion check slots (6"x6") may be required based on slope length. Excavate top anchor trench 2' x 3' over crest of the slope.
 2. If intermittent erosion check slots are required install Turf Reinforcement Matting (TRM) in 6"x6" slot at a maximum of 30' centers or the mid point of the slope. TRM should be stapled into trench on 12" centers.
 3. Install TRM in top anchor trench, anchor on 12" spacings, backfill and compact soil.
 4. Unroll TRM down slope with adjacent rolls overlapped a minimum of 3". Anchor the seam every 18". Lay the TRM loose to maintain direct soil contact, do not pull taught.
 5. Overlap roll ends a minimum of 12" with upslope TRM on top for a shingle effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".

6. Install TRM in bottom anchor trench (12"x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependant on slope. Refer to manufacturer's anchor guide.

D. Channel Installation

1. Excavate initial anchor trench (12"x6") across the lower end of the project area.
2. Excavate intermittent check slots (6"x6") across the channel at 30' intervals along the channel.
3. Excavate longitudinal channel anchor slots (4"x4") along both sides of the channel to bury the edges. Whenever possible extend the TRM 2'-3' above the crest of channel side slopes.
4. Install TRM in initial anchor trench (downstream) anchor every 12", backfill and compact soil.
5. Roll out TRM beginning in the center of the channel toward the intermittent check slot. Do not pull taught. Unroll adjacent rolls upstream with a 3" minimum overlap (anchor every 18") and up each channel side slope.
6. At top of channel side slopes install TRM in the longitudinal anchor slots, anchor every 18".
7. Install TRM in intermittent check slots. Lay into trench and secure with anchors every 12", backfill with soil and compact.
8. Overlap roll ends a minimum of 12" with upstream TRM on top for a shingling effect. Begin all new rolls in an intermittent check slot, double anchored every 12".
9. Install upstream end in a terminal anchor trench (12"x6"); anchor every 12", backfill and compact.
10. Complete anchoring throughout channel at 2.5 per square yard using suitable ground anchoring devices (U shaped wire staples, metal geotextile pins, plastic stakes, and triangular wooden stakes). Anchors should be of sufficient length to resist pullout. Longer anchors may be required in loose sandy or gravelly soils.

3.32 GENERAL SMALL CONSTRUCTION SITE CONTROLS

- A. Preexisting vegetation shall be retained on idle portions of the building area for as long as construction operations allow. Clearing shall be done so only active working areas are bare.
- B. Temporary seed and/or mulch shall be applied to areas, such as stockpiles and rough graded areas, that are bare and not actively being worked. This shall apply to areas that will not be reworked for 21 days or more.
- C. Stockpiles created from excavation and grading shall be situated away from streets, swales, or other waterways and shall be seeded and/or mulched immediately.
- D. Silt fence or other sediment barriers shall control sheet flow runoff from the construction area. These shall not be constructed in channels or areas of concentrated flow. Other sediment controls such as sediment traps and inlet protection shall also be used as needed to control sediment runoff. Sediment control practices shall be inspected weekly after storm events, and maintained in good working condition.
- E. Construction vehicle access shall be limited to one route, to the greatest extent practical.

The access shall be gravel or crushed rock underlain with geotextile.

- F. Mud tracked onto streets or sediment settled around curb inlet protection shall be removed daily or as needed to prevent it from accumulating. It shall be removed by shoveling and scraping and shall NOT be washed off paved surfaces or into storm drains. Sediment removed shall be placed where it will not be subject to erosion or concentrated runoff.

END OF SECTION 312514

SECTION 329200.19 – SEEDING AND MULCHING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Placing topsoil.
- B. Permanent seeding, hydro seeding, mulching and fertilizing.

1.2 RELATED SECTIONS

- A. Section 312316.13 – Trenching: Rough grading over cut.
- B. Section 312500 – Slope Protection and Erosion Control: Erosion control. Temporary seeding and mulching.

1.3 REFERENCES

- A. FS O-F-241 – Fertilizers, Mixed, Commercial.

- B. Lawn Mixture

- | | |
|--|-----------------------------|
| 1. Kentucky Bluegrass (<i>Poa pratensis</i>) | 3 lb./ 1000 ft ² |
| 2. Creeping Red Fescue (<i>Festuca rubra</i>) | 3 lb./ 1000 ft ² |
| 3. Annual Ryegrass (<i>Lolium multiflorum</i>) | 2 lb / 1000 ft ² |
| 4. Perennial Ryegrass, turf type (<i>Lolium perenne</i>) | 2 lb / 1000 ft ² |

- C. General Notes and any other related specifications.

1.4 DEFINITIONS

- A. Weeds: Include Dandelion, Jimsonweed, Quack grass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambs quarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nut grass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

- A. Section 017839 – Closeout Submittals: Procedures for submittals.
- B. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.6 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

1.7 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Provide certificate of compliance from authority having jurisdiction indicating approval of seed mixture.

1.8 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

1.9 MAINTENANCE SERVICE

- A. Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition for two cuttings.

PART 2 - PRODUCTS

2.1 SEED MIXTURE

- A. Seed Mixture: ODOT; Item 659.09; Lawn Mixture

2.2 SOIL MATERIALS

- A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds and roots; pH value of minimum 5.4 and maximum 7.0.

2.3 ACCESSORIES

- A. Mulching Material:
 - 1. Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
 - 2. Hemlock species wood cellulose fiber, dust or chip form, free of growth or germination inhibiting ingredients.

- B. Fertilizer: FS O-F-241, Type I, Grade A; recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated in analysis.
- C. Water: Clean, fresh and free of substances or matter, which could inhibit vigorous growth of grass.
- D. Erosion Fabric: Jute matting, open weave.
- E. Stakes: Softwood lumber, chisel pointed.
- F. String: Inorganic fiber.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that prepared soil base is ready to receive the work of this section.
- B. Soils must include enough fine-grained material to hold at least a moderate amount of available moisture.
- C. The soil must be free from material that is toxic or otherwise harmful to plant growth.
- D. Soils which do not meet the above minimum conditions shall receive topsoil to a depth of 4 inches.

3.2 SITE PREPARATION

- A. Subsoiler, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
- B. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
- C. Topsoil shall be applied where needed to establish vegetation.

3.3 PLACING TOPSOIL

- A. Prior to applying topsoil, the topsoil should be pulverized.
- B. To ensure bonding, grade the subsoil and roughen the top 3-4 in. by disking.
- C. Do not apply when site is wet, muddy, or frozen, because it makes spreading difficult, causes compaction problems, and inhibits bonding with subsoil.

- D. Apply topsoil evenly to a depth of at least 4 inches and compact slightly to improve contact with subsoil.
- E. After spreading, grade and stabilize with seeding or appropriate vegetation.

3.4 SEEDBED PREPARATION

- A. Lime—Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 pounds per 1,000-sq. ft. or 2 tons per acre.
- B. Fertilizer—Fertilizer shall be applied as recommended by a soil test. In place of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analyses.
- C. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

3.5 SEEDING DATES AND SOIL CONDITIONS

- A. Seeding should be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the above-specified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Tillage for seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, refer to dormant seeding.

3.6 SEEDING

- A. Apply seed at a rate of 3 lbs per 1000 sq ft evenly in two intersecting directions. Rake in lightly.
- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Planting Season: April to September.
- D. Do not sow immediately following rain, when ground is too dry, or during windy periods.
- E. Immediately following seeding, apply mulch as required herein. Maintain clear of shrubs and trees
- F. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches.

3.7 SEED PROTECTION

- A. Identify seeded areas with stakes and string around area periphery.

- B. Cover seeded slopes where grade is 1:3 or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
- C. Lay fabric smoothly on surface, bury top end of each section in 6-inch (150 mm) deep excavated topsoil trench. Provide 12-inch (300 mm) overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
- D. Secure outside edges and overlaps at 36-inch (900 mm) intervals with stakes.
- E. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
- F. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches (150 mm).

3.8 DORMANT SEEDINGS

- A. Seedings should not be made from October 1 through November 20. During this period, the seeds are likely to germinate but probably will not be able to survive the winter.
 - B. The following methods may be used for “Dormant Seeding”:
1. From October 1 through November 20, prepare the seedbed, add the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15, broadcast the selected seed mixture. Increase the seeding rates by 50% for this type of seeding.
 2. From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilize, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this type of seeding.
 3. Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist seedbed.
 4. Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations with a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where feasible.

3.9 MULCHING

- A. Mulch material shall be applied immediately after seeding. Dormant seeding shall also be mulched. 100% of the ground surface shall be covered with an approved material.
- B. Application rates:
 1. Straw—If straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons per acre or 90 pounds (two to three bales) per 1,000-sq. ft. The mulch shall be spread uniformly by hand or mechanically applied so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. bales of straw in each section.

2. Hydroseeders—If wood cellulose fiber is used, it shall be applied at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
3. Other—Other acceptable mulches include rolled erosion control mattings or blankets applied according to manufacturer's recommendations or wood chips applied at 6 tons per acre.

3.10 MAINTENANCE

- A. Expect emergence within 4 to 28 days after seeding, with legumes typically following grasses. Check permanent seedlings within 4 to 6 weeks after planting. Growth should indicate:
 1. Vigorous seedlings;
 2. Uniform ground surface coverage with at least 30% growth density;
 3. Uniformity with legumes and grasses well intermixed;
 4. Green, not yellow, leaves. Perennials should remain green throughout the summer, at least at the plant bases.
- B. Permanent seeding shall not be considered established for at least one full year from the time of planting. Inspect the seeding for soil erosion or plant loss during this first year. Repair bare and sparse areas. Fill gullies. Re-fertilize, re-seed, and re-mulch if required. Consider no-till planting. A minimum of 70% growth density, based on a visual inspection, must exist for an adequate permanent vegetative planting.
- C. If stand is inadequate or plant cover is patchy, identify the cause of failure and take corrective action: choice of plant materials, lime and fertilizer quantities, poor seedbed preparation, or weather. If vegetation fails to grow, have the soil tested to determine whether pH is in the correct range or nutrient deficiency is a problem.
- D. Depending on stand conditions, repair with complete seedbed preparation, then over-seed or re-seed.
- E. If it is the wrong time of year to plant desired species, over-seed with small grain cover crop to thicken the stand until timing is right to plant perennials or use temporary seeding.
- F. Satisfactory establishment may require re-fertilizing the stand in the second growing season.
- G. Consider mowing after plants reach a height of 6 to 8 inches. Mow grasses tall, at least 3 inches in height and minimizes compaction during the mowing process. Vegetation on structural practices such as embankments and grass-lined channels need to be mowed only to prevent woody plants from invading the stand.

END OF SECTION 329200.19

SECTION 331113 – WATERLINE CONSTRUCTION

PART 1 - GENERAL

1.1 REFERENCE

- A. All applicable requirements of other portions of the Contract Documents apply to the Work of this Section, including but not limited to Division 1, General Requirements.

1.2 DESCRIPTION OF WORK

- A. Water line piping, valves, hydrants and appurtenances.
- B. Water line testing and disinfection.

1.3 QUALITY ASSURANCE

- A. General: All materials shall be free from defects impairing strength and durability and be of the best quality for the purposes specified or shown on the Drawings. It shall have structural properties sufficient to solely sustain or withstand strain and stresses to which it is normally subjected and be true to detail.
- B. Manufacturer's Qualifications
 - 1. Provide piping and appurtenances that are standard products in regular production by manufacturers whose products have proven reliable in similar service for at least two years.
 - 2. Provide piping and appurtenances of the same type from a single manufacturer.
- C. The Contractor shall be responsible for making all field measurements prior to installation of his work. Any deviations in measurements between the field conditions and the Drawings shall be immediately reported to the Engineer.
- D. Testing
 - 1. Manufacturer's certified test results as defined for the type of pipe shall be stamped approved by the Contractor and forwarded to the Engineer as a Reference Submittal. No pipe shall be installed which does not meet the requirements of these Specifications.
 - 2. All pipe, joints, and fittings shall be pressure tested as required by this Specification for the type of pipe. The Contractor shall notify the Engineer and Owner, in writing, at least 48 hours prior to performing the tests.

1.4 SUBMITTALS

- A. Provide technical submittals in accordance with Section 017800, Submittals, demonstrating piping and accessories conform completely to the requirements of this Section.

B. Product Data

1. Catalog cut sheets and description of all items.
2. Construction materials.
3. Standard diameters, wall thickness and other pertinent dimensions of all sizes of piping and accessories.

C. Testing: Copies of all field test reports.

1.5 HANDLING, DELIVERY, AND STORAGE

A. General

1. Handling, delivery, and storage shall be in accordance with Section 410100 of the Project Manual and the manufacturer's recommendations.
2. In no case shall the pipe or appurtenance be dumped, dropped, or thrown.
3. Interior of piping shall be completely free of dirt and foreign matter.

PART 2 - PRODUCTS

2.1 POLYVINYL CHLORIDE (PVC) PIPE (AWWA C900)

- A. General: Polyvinyl chloride (PVC) pipe shall be pressure rated pipe with push-on gasket joints (unless otherwise noted). Products delivered under this specification shall meet the requirements of AWWA C900.
- B. Manufacturers: Pipe shall be as manufactured by Certain-Teed Products Corp., Valley Forge, Pennsylvania; Johns-Manville, New York, New York; Anesite Division, Clow Corporation, Chicago, Illinois, or approved equal.
- C. Materials: Pipe shall be made from unplasticized PVC compounds having a minimum cell classification of 12454 as defined in ASTM D 1784. The compound shall qualify for Hydrostatic Design Basis (HDB) of 4000 psi for water at 73.4°F, in accordance with the requirements of ASTM D 2837.
- D. Dimensions: Nominal outside diameters and wall thicknesses of restrained join pipe shall conform to the requirements of AWWA C900. Integral bell joint pipe shall be furnished in 4", 6", 8", 10" and 12" sizes, in Class 165(DR25), Class 235(DR18) and Class 305(DR14). Pipe shall be furnished in standard lengths of 20 feet.
- E. Joints: Where push-on joints are utilized, pipe shall incorporate a formed bell complete with a single rubber gasket conforming to ASTM F477. Where restrained joints are specified, pipe shall be joined using non-metallic couplings to form an integral system for maximum reliability and interchangeability. high-strength, flexible thermoplastic splines shall be inserted into mating, precision machined grooves in the pipe and coupling to provide full 360° restraint with evenly distributed loading. Couplings shall be designed for use at or above the pressure class of the pipe with which they are utilized, and shall incorporate twin elastomeric sealing gaskets meeting the requirements of ASTM F 477. Joints shall be designed to meet the zero leakage test requirements of ASTM D 3139.

- F. Workmanship: Pipe shall be homogeneous throughout and free from voids, cracks, inclusions and other defects, and shall be as uniform as commercially practicable in color, density and other physical characteristics.
- G. Quality Control: Every pipe shall pass the AWWA C900 hydrostatic proof test requirements of 4 times the pressure class for 5 seconds.
- H. Marking: Pipe shall be legibly and permanently marked in ink with the following minimum information:
 - 1. Nominal Size (for example, 4")
 - 2. PVC
 - 3. Dimension Ratio (for example, DR25)
 - 4. AWWA pressure class (for example, PC165)
 - 5. ANSI/AWWA C900-07 (or latest edition)
 - 6. Manufacturer's name or trademark and production record code
 - 7. Seal (mark) of the testing agency verifying the suitability of the pipe material for potable water service
- I. Markings of pipe-printing shall be color coded for pressure class identification. Pipe shall be furnished with a minimum of one (1) contrasting color circumferential stripe painted on the plain end or uncoupled end of each length to allow field checking of pipe construction joints.
- J. Each lot shipment of pipe and related materials shall include a shipment itemized check list for recording damages and/or deficiencies.
- K. All PVC material for pipe shall be light gray, light blue or white in color to minimize material heat gain.

2.2 DUCTILE IRON PIPE

- A. Ductile iron pipe shall conform to AWWA C151 with wall thickness provided in accordance with AWWA C150 for the depth of cover shown on the Drawings using a minimum rated working pressure of 350 psi and Laying Condition 4; minimum Pressure Class 350, unless otherwise shown or specified.
- B. Pipe shall have standard asphaltic coating on the exterior
- C. Pipe shall have a standard thickness cement mortar lining in accordance with ANSI/AWWA C104/A21.4.
- D. The class or nominal thickness, net weight without lining, and casting period shall be clearly marked on each length of pipe. Additionally, the manufacturer's mark, country where cast, year in which the pipe was produced, and the letters "DI" or "Ductile" shall be cast or stamped on the pipe.
- E. Push-on and mechanical joint ends shall conform to AWWA C110 with gaskets conforming to AWWA C111.

- F. Flange joints shall conform to AWWA C110 with gaskets and bolts conforming to AWWA C110, Appendix A.
- G. Restrained joints for push-on joint piping shall be the equal of TR Flex by U.S. Pipe and Foundry Co., Flex-Ring by American Cast Iron Pipe Co., or Tyton Joint with Field Lok Gasket instant joint restraint by U.S. Pipe and Foundry Co.
- H. Restrained joints for mechanical joint piping shall be the equal of Megalug by EBBA Iron, Inc.; MJ Gripper Gland by U.S. Pipe and Foundry Co.; or Lok-Fast Joint by American Cast Iron Pipe Co.

2.3 D.I. FITTINGS AND ACCESSORIES

- A. All fittings shall be ductile iron unless otherwise specified. Fittings shall have mechanical joints unless otherwise noted. Ductile iron standard fittings shall conform to AWWA C110 and compact fittings shall conform to AWWA C153. Pressure rating shall be 250 unless otherwise noted.
- B. All lining and coating for fittings shall be as specified for ductile iron pipe.
- C. Fittings shall be as manufactured by U.S. Pipe and Foundry Co., American Cast Iron Pipe Co., Clow Corp. or approved equal.
- D. Mechanical and push-on joint fittings shall conform to AWWA C111/ANSI 21.11.
- E. Flange joint fittings shall conform to AWWA C110 with gaskets and bolts conforming to AWWA C110, Appendix A.
- F. Long radius elbows, reducing elbows, reducing-on-the-run tees, side outlets, eccentric reducers and laterals supplied as flanged fittings shall conform to ANSI B16.1.
- G. All flanged joint fittings shall be furnished with 1/8 inch thick rubber gaskets. The bolts shall have American Standard heavy unfinished hexagonal head and nut dimensions all as specified in American Standard for Wrench Head Bolts and Nuts and Wrench Openings (ANSI B18.2). Material for bolts and nuts shall conform to ASTM A307 Grade B.
- H. Anchor pipe and fittings shall consist of plain end MJ pipe fittings furnished with integral fixed or split rotatable ring follower glands. A mechanical joint anchoring tee may be substituted for a mechanical joint tee with anchoring piece.

2.4 GATE VALVES

- A. All gate valves installed under this contract shall be resilient wedge gate valves and shall be of the same class as the pipe on which they are installed. Valves shall have joint ends compatible with type of pipe used, non-rising stems, 2" square operating nut and shall open "left".
- B. Approved Manufacturers: US Pipe & Foundry, Mueller Co., or Kennedy Valve Mfg. Co. or approved equal.

- C. Valves shall conform to AWWA C509 and shall incorporate an iron body, bronze-mounted, and parallel seat. Valve seals shall be O-ring type in lieu of a stuffing box. Valve stems shall be manganese bronze, non-rising type.
- D. Gate valves 4-inch and larger shall be cast iron with bronze gate rings.
- E. All gate valves 2 1/2" and smaller shall be of an Engineer approved manufacture and suitable for the service required. All valves shall have openings through the body of the same circular area as that of the pipe to which they are attached. All valves shall be designed to take the full unbalanced pressure upon either face.
- F. Except as otherwise stated or indicated upon the plans, underground valves shall be fitted with standard, two-inch square operating nut. All valves in interior or above ground piping shall be fitted with hand wheels and shall have flanged or screwed ends depending upon the size of pipe with which they are being used, or as shown on the plans. Underground valves will be provided with boxes, covers and operating nuts extended to grade. All underground valves shall have cast iron bodies.
- G. All hand-operated gate valves shall open by turning counter clockwise (left). The direction of opening shall be indicated by an arrow on hand wheels and on operating nuts.
- H. All submerged valves shall be furnished with "o" ring packing.
- I. All gate valves shall be designed for a minimum working pressure equivalent to that of the connecting pipe.
- J. The valve body and bonnet shall be coated with fusion bonded epoxy, interior and exterior, in accordance with AWWA C550. The coating material shall comply with NSF Standard 61.
- K. All valves shall have the manufacturer's name, pressure rating and year of manufacture cast into the body.

2.5 HYDRANTS

- A. Hydrants located at water storage tanks shall be Clow Eddy F-2640 hydrant or approved equal with 5-1/4 inch main valve, compression shutoff, two 2-1/2 inch and one 4-1/2 inch nozzles with three chains and No. 2 nut. Shoe connection shall be 6-inch MJ.
- B. Hydrant shall open left (counter clockwise). Hydrants shall be built for 4 1/2 feet bury and be painted red in reflective paint.
- C. Approximately 1/2 cubic yards of coarse gravel shall be placed from the bottom of the trench up the hydrant barrel. Brace with solid concrete block not concrete.
- D. Provide restrained joint system from hydrant to hydrant valve to hydrant tee.
- E. Hydrant valve shall be gate valve. Hydrant shall be installed using MJ by swivel tee and 6-inch by 13-inch swivel by swivel adapter.
- F. Hydrant steamer nozzle shall be equipped with a Storz Adapter.

2.6 CONCRETE BLOCKING

- A. Concrete blocking will be placed at all tees, bends, and valve locations unless otherwise noted. Blocking shall be placed in accordance with the details shown in the Drawings.
- B. Concrete shall be ready mix concrete with a minimum compressive strength of 2,500 psi at 28 days.

2.7 VALVE BOXES

- A. Valve boxes shall be supplied for all buried valves.
- B. The assembly shall consist of three (3) pieces and a cover. The cover shall be marked "Water". The valve box shall be screw-type, cast iron with 5-1/4-inch shaft. A round base that will enclose the valve bonnet shall be furnished with 6-inch and 8-inch valves. An oval base shall be supplied with valves larger than 8-inches.
- C. The valve box shall be supported at the base on concrete blocking to stabilize the assembly.

2.8 UTILITY MARKING TAPE

- A. Three (3) inch wide detectable utility marking tape bearing the word "CAUTION...WATERLINE" permanently printed on the tape. Tape shall be blue as specified by the APWA color code.

2.9 SERVICE SADDLES AND CORPORATION STOPS

A. Service Saddles

- 1. Service saddles shall be permanently hinged type, of brass with brass screws, confined "o" ring seal and AWWA thread outlet. Service saddles shall be of a design which accurately fit plastic pipe (O.D.) to provide a positive seal between plastic main and saddle at a minimum working pressure of 200 psi. Approved manufacturers/models include: Ford S90.
- 2. The service saddles shall be marked to indicate size of plastic main (O.D.) and outlet size on body and strap.

B. Corporation Stops

- 1. Corporation stops shall be brass, designed and manufactured in accordance with AWWA C800, latest edition and shall be individually inspected and tested for leaks at the factory prior to shipment. Corporation stops shall be of a design with will permit use with drilling machines of current design.
- 2. Corporation stops shall be plug type furnished with AWWA inlet thread and grip joint outlet for PE tubing, Ford Type F1000.

2.10 SERVICE LINE

- A. Service line shall be high performance, high molecular weight, high density polyethylene pipe. PE tubing shall conform to AWWA C901, latest revision. Diameter ratio shall be as required to meet nominal CTS (copper tube size). Tubing shall be rated for a maximum working pressure of 200 psi.
- B. Where service line pressures exceed 200 psi, copper tubing, Type K, shall be utilized in lieu of polyethylene tubing.
- C. In addition to service line, appropriately sized insert stiffeners shall be provided to permit use of polyethylene pipe with the various service materials specified herein.

PART 3 - EXECUTION

3.1 EXECUTION

- A. Size, Type and Joining: All materials shall conform to the size and type shown on the drawings or called for in the specification. In joining two dissimilar types of pipe, standard fittings shall be used when available. In the event fittings are not available, the method of joining shall be selected by the Contractor and submitted for review by the Engineer.
- B. Installation Standards: Except where noted or specified, all underground waterline shall be laid in accordance with AWWA C600 or AWWA C605 for ductile iron or PVC pipe, respectively. All clearances and separations between water lines and sewer lines shall be in accordance with OEPA guidelines.
- C. General Excavation:
 - 1. Contractor shall do all excavation, undercutting, dewatering and backfilling necessary for work under this contract unless otherwise noted.
 - 2. Work shall conform to other sections of Division 2 except where modified by this section.
 - 3. The width of trench below the top of the pipe shall not exceed the nominal diameter of the pipe plus 2 feet for all pipelines.
 - 4. Where the maximum trench width is exceeded, the pipe shall be placed in a concrete cradle or a stronger pipe shall be used as necessary. If the maximum trench width is exceeded for any reason other than by request of the Engineer, the concrete cradle or the stronger pipe shall be placed at the Contractor's expense.
 - 5. Excavation shall include all necessary clearing of excavated areas, tree removal, all grubbing, all wet, dry, fill and rock excavation, the removal of pavement and all incidental work thereto.
 - 6. Contractor shall excavate whatever materials are encountered as required to place the pipe and appurtenances at the elevations noted.
 - 7. The trench shall be constructed in accordance with Section 312316.13 – Trench Excavation, Bedding and Backfill.
 - 8. Excavations at the crossing of all underground utility services in place shall be as narrow as practicable.

9. Unless otherwise noted, all existing underground services shall be protected from damage and maintained in service at their original location and grade during the process of the work. Any damage to underground services shall be replaced or repaired at no cost to the Owner or to the owner of the service. The present underground services shown on the drawings are located in accordance with available data. Encountering these services at a different location or encountering services not shown shall not release the Contractor from the previous stated conditions.
10. Any service connections encountered which are to be removed shall be cut off at the limits of the excavation and capped in accordance with the requirements of owners of such connections.
11. Excavated material that is unsuitable or not required for filling shall be wasted.
12. Materials to be used for fill and suitable for this purpose shall be deposited where required, except that no fill shall be placed where trenches for sewers, water lines or other services will be located until after the trench work is completed.
13. Contractor shall provide adequate shoring, sheet piling and bracing to prevent earth from caving or washing into the excavation, and shall do all shoring and underpinning necessary to properly support adjacent or adjoining structures. All shoring, sheet piling and underpinning must be maintained until permanent support is provided.

D. Laying Pipe:

1. Piping shall be installed in accordance with the manufacturer's published instructions, modified only as may be directed herein or by the Engineer. All pipe installations shall comply with applicable paragraphs contained as part of these construction specifications.
2. Pipe Bury Depth - normal laying depth shall be 48" of cover depth minimum regardless of pipe diameter. Where rock is encountered, the minimum cover over top of the pipe shall be 48". Where rock is encountered on the trench bottom at the normal laying depth, a minimum of 6 inches of granular bedding shall be required.
3. All piping shall be assembled in accordance with the layout shown on the plans with only such modifications as may be necessary to conform to the final detail dimensions or location of existing water mains, hydrants, existing utilities, tanks, valve vaults, booster stations, valves, county roads, highway and stream crossings, etc. In crossing under ditches and streams the minimum depth of the trench required for the project shall be maintained. Standard fittings shall be used if required to depress the pipe but in no case shall the approach to the crossing be laid at a steeper angle than forty-five (45) degrees with the horizontal.
4. All pipe installed under this contract shall be installed in accordance with the applicable sections of AWWA C600 or AWWA C605 for ductile iron and PVC pipe, respectively. Type B laying conditions shall be maintained for both ductile iron and PVC installations. Trench width at the top of the pipe shall not exceed the pipe diameter plus 2 feet unless approved by the Engineer. Minimum trench width shall be 1 foot greater than the maximum outside pipe diameter. Pipe shall be laid directly on a bedded trench bottom containing coupling or bell joint holes with trench shaped to provide continuous contact with the pipe between coupling or bell joint holes as recommended by the pipe manufacturer or as directed by the Engineer.

5. If, in the course of construction, ground water is encountered, the Contractor shall reduce the water level to the invert of the main or bottom of the structure. The Contractor shall maintain this dewatered condition until the area around the structure has been backfilled to existing grade. No pipe shall be laid in water, or when the trench conditions or the weather is unsuitable for such work, except by permission of the Engineer. At times when pipe installation is not in progress, the open ends of the pipe shall be closed by approved means and no trench water shall be permitted to enter the pipe. It shall be borne in mind that precautions must be taken to prevent empty pipe from floating, should the trench become flooded before backfilling has been completed.
6. Prior installation the interior of each piece of pipe and each fitting shall be inspected and any dirt and debris shall be removed. Swabbing may be required. After installation, inspect again and remove any accumulated dirt and debris.
7. Each piece of pipe shall be lowered into trench and installed separately. All pieces of pipe shall be laid in the trench so that it is firmly supported on the bedding material throughout its length.
8. As shown on the plans, or as directed by the Engineer, the Contractor shall provide concrete anchors or thrust blocks (against undisturbed earth), joint harness, and concrete encasement where required. This work shall be included in the unit prices bid for installing pipe, fittings, and appurtenances.
9. Pieces of pipe or fitting which are known to be defective shall not be laid or placed. Any defective piece of pipe or fitting discovered after the piping is laid shall be removed and replaced with satisfactory pipe or fitting. In case a length of pipe is cut to fit in a line, it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe. Cuts shall be made with proper tools for cutting the pipe. In the event the pipe is damaged as a result of the pipe being cut, the affected joint shall be rejected.
10. Bed the pipe as indicated and specified in Section 312316.13.
11. Material used for backfilling trenches over the pipe shall be free from any rock or debris that may be a potential source of damage to the pipe. Where material originally excavated from the trench is deemed unsuitable, the contractor shall obtain other suitable material for use as backfill.
12. Contractor shall provide, operate and maintain all pumps or other equipment necessary to drain and keep all excavation pits and trenches and the entire subgrade area free from water under any circumstances that may arise.
13. All trees, shrubs and improved areas outside of the excavation shall be protected from damage.
14. Where indicated water line shall be installed with tracer wire.
15. Pipe must be kept clean of mortar, cement, clay, sand or other material. Prior to installation the interior of each piece of pipe and each fitting shall be inspected and any dirt and debris shall be removed. Swabbing may be required. After installation, the pipe and fittings shall be inspected again and any accumulated dirt and debris removed.

E. Restrained Joints:

1. Except where noted or indicated, all bends, caps, plugs, tees and other fittings shall be restrained with flexible restrained joints. In addition, restrained joints shall be utilized for a minimum of one joint or 20 feet, whichever is greater, to each side of

the fitting. Restrained joints shall be provided regardless of the use of concrete thrust blocking.

2. Mechanical joints for ductile iron pipe shall be restrained by Megalug 1100 or 1100SD Series by EBAA Iron Sales, Inc., a comparable product manufactured by Star Pipe Products, or an equal restraining system.
3. Ductile iron push-on joint pipe shall be restrained by Lok-Ring Joint by American Ductile Iron Pipe, TRFLEX by U.S. Pipe, or equal.
4. Joints in AWWA C900/C905 PVC pipe shall be restrained by Megalug 2800 Series by EBAA Iron Sales, Inc., a comparable product manufactured by Star Pipe Products, or an equal restraining system.
5. Joints between AWWA C900/C905 PVC pipe and mechanical joint ductile iron fittings shall be restrained by Megalug 2000PV Series by EBAA Iron Sales, Inc., a comparable product manufactured by Star Pipe Products, or an equal restraining system.

3.2 TESTING

- A. All testing must be witnessed by the Engineer. Non-witnessed testing will not be accepted. Contractor shall provide engineer with 48-hour notice prior to commencing with testing.
- B. The Contractor shall make all valves tight under their working pressure after they have been installed and before they are placed in operation. Any defective parts shall be replaced at the Contractor's expense.
- C. All valves shall be pressure tested in conjunction with their adjoining piping.
- D. All water lines shall be disinfection tested in accordance with AWWA C 651.
- E. Pressure Testing:
 1. A hydrostatic test as required in applicable sections of AWWA C600 or AWWA C605 for ductile iron or PVC pipe, respectively, shall be applied to the whole or individually isolated sections of the water lines and hydrant leads.
 2. The test pressure shall be maintained at 150 psi or one and a half times the working pressure (whichever is greater), in any section being tested. The duration of each pressure test shall be at least 2 hours.
 3. The Contractor shall furnish and Owner verifies gauges for the test. Furthermore, the Contractor shall furnish all materials, make all taps required and furnish a pump, piping, all other equipment and all assistance necessary for conducting the tests. Gauges provided by the Contractor shall only be used for potable water or be new.
 4. Before applying the specified pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made by the Contractor at points of highest elevation or as required. Taps shall be of the sizes as shown on the drawings, or as directed by the Engineer.
- F. Leakage Testing:
 1. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within 5 psi of

the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.

2. No pipe installation will be accepted until this leakage (evaluated on a pressure basis of 150 psi) is less than 1.99 U.S. gallons per hour per 100 joints of 12-inch nominal diameter pipe and corrected for the other sizes of pipe as provided in the AWWA Specification.

- G. Any testing performed against existing valves shall be at the Contractor's risk and in strict compliance with the requirements of the Owner. If unable to achieve the required test, the Contractor shall disconnect from the existing valve, plug the line and retest until satisfactory results are obtained. Any damage caused to existing facilities shall be repaired at the Contractor's expense.

3.3 DISINFECTION

- A. After satisfactory hydrostatic testing, the completed pipe shall be chlorinated in accordance with AWWA C651, latest edition. All labor, material, and equipment including chlorination taps and blow-off taps necessary to complete the work shall be furnished and paid for by the Contractor. Taps shall include tapping valves, sufficient tubing or pipe to extend outside the trench, and operable valve above ground. Blow-offs shall be installed as required. The time and section of line to be chlorinated shall be approved by the Engineer.
- B. Upon completing the chlorination and the subsequent flushing of the line, the Contractor shall take the necessary water samples from the pipe for testing by an approved laboratory. Engineer must be present to witness the samples being taken. Testing shall be performed in accordance with Ohio Environmental Protection Agency rules and regulations, copies of which are available from the Ohio Environmental Protection Agency. A certified copy of the test results shall be sent to the Owner. The cost of testing shall be borne by the Contractor.

3.4 CONNECTIONS

- A. Contractor is responsible for connecting to existing pipe where indicated in the Drawings.
- B. Expose and determine the type and diameter of existing pipe and ensure that the proper fittings gaskets necessary for interface are available in advance of initiating work on the connection.
- C. The Contractor shall be responsible for the valving off the existing main, flushing, and bleeding air from the existing line once the connection is made. The existing line shall not be valved off until the Contractor has all necessary equipment and materials at the site to make the proper connection. All work shall be performed in coordination with the Owner.

3.5 VALVE TESTING

- A. The Contractor shall make all valves tight under their working pressure after they have been installed and before they are placed in operation. Any defective parts shall be replaced at the Contractor's expense.
- B. All valves shall be pressure tested in conjunction with their adjoining piping.

3.6 VALVE INSTALLATION AND STORAGE

- A. The valves and appurtenances shall be installed in accordance with the installation manual furnished by the valve manufacturer. Extreme care shall be used in the handling, storage and installation of these valves to prevent damage or distortion of the equipment and to insure proper performance.

3.7 UTILITY MARKING TAPE INSTALLATION

- A. Install detectable utility marking tape above all plastic pipelines, eighteen (18) to twenty-four (24) inches below final grade.

3.8 SERVICE LINE INSTALLATION

- A. Service line shall be installed where required to interface the pressure transducer installation at the tank to the inlet water line.

3.9 SPARE PARTS AND TOOLS

- A. Repair or service parts for one of each type and size of valve and hydrant supplied shall be furnished and stored as directed by the Owner.
- B. The equipment shall include, in general, the following items:
 - 1. Special tools required for maintenance or operation of valves.
 - 2. Gaskets, rings, seals, packing, lubricants, bolts, washers, operation manuals, drawings, etc., required to maintain valves in proper operating service.

END OF SECTION 331113

SECTION 331613.14 – BOLTED STEEL WATER STORAGE TANKS

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish and erect a standpipe style water storage tank, including foundation, glass-coated, bolted-steel tank structure and tank appurtenances as shown on the Drawings and described herein.
- B. All work, labor, materials, equipment and testing in this section is considered incidental and included in the unit price/lump sum prices bid.
- C. Reinforced concrete design shall conform to the applicable requirements of the ACI Standard Building Code Requirements for Reinforced Concrete - ACI 318 as published by the American Concrete Institute.
- D. Excavated material shall be disposed of by the Contractor in accordance with governing laws and permits.
- E. Contractor shall contact the Ohio Utility Protection Service, the Ohio Oil & Gas Producer's Protection Service and other utilities as needed prior to commencing any work at the site.
- F. Traffic control is considered incidental to the project and is the responsibility of the Contractor. The cost of this work shall be included within the prices bid for related items.

1.2 QUALIFICATIONS OF TANK SUPPLIER

- A. The Engineer's selection of factory applied glass- fused-to-steel bolt together tank construction for this facility has been predicated upon the design criteria, construction methods specified, and optimum coating for resistance to internal and external tank surface corrosion. Deviations from the specified design, construction or coating details, will not be permitted.
- B. The bidder shall offer a new tank structure as supplied from a U.S.A. manufacturer specializing in the design, fabrication and erection of factory applied glass-fused-to-steel, bolt together tank systems. The manufacturer shall own and operate its production plant, fabricate and glass coat the tank at one U.S.A. location.
- C. The tank shown on the Drawings and specified herein is a Model 6421 Aquastore Tank System as manufactured by CST Industries, Inc. of DeKalb, Illinois.
- D. Alternate glass-fused-to-steel tank products, as provided by other manufacturers, will be considered for prior approval by the Engineer. Manufacturers lacking the experience requirement will not be considered. The Owner's decision or judgment on these matters will be final, conclusive and binding.

- E. Strict adherence to the standards of design; fabrication; erection; product quality; and long-term performance, established in this Specification will be required by the Owner and Engineer.
 - 1. Tank substitutions which cause engineering and contract changes - the tank installation as shown on the Drawings and specified herein, is based on the equipment furnished by one manufacturer. A tank which is offered as a substitute to the specific requirements of these Specifications and which differs in detail and arrangement from that shown may require changes in design and construction. All costs which result from such changes in design and construction are to be borne entirely and unconditionally by the Contractor; said costs to included but not be limited to structural, piping, mechanical and electrical changes and all engineering costs incurred as a result of the substitution, in the revision of Plans and Specifications, review of design changes by others, preparation of change orders, and any other costs directly resulting from said substitution.
- F. Tank suppliers wishing to pre-qualify shall submit the following to the Engineer/Owner for consideration 10 days prior to bid date:
 - 1. Typical structure and foundation drawing(s).
 - 2. List of tank materials, appurtenances and tank coating specs.
 - 3. Certification from tank manufacturer that the tank meets all of tank design standards listed in Section 2.01.
- G. Only bids from U.S.A. manufactured tank suppliers who have successfully pre-qualified will be considered.
- H. The Engineer reserves the right to evaluate all bids based on long term, 20-year minimum operation, coating and maintenance costs. Values to be used in this evaluation will be at the discretion of the Engineer.

1.3 SUBMITTAL DRAWINGS AND SPECIFICATIONS

- A. Construction shall be governed by the Owner's drawings and specifications showing general dimensions and construction details, after written approval by the Engineer of detailed erection drawings prepared by the tank bidder. There shall be no deviation from the drawings and specifications, except upon written order from the Engineer.
- B. The bidder is required to furnish, for the approval of the Engineer and at no increase in contract price, 6 sets of complete specifications and construction drawings for all work not shown in complete detail on the bidding drawings. Three complete sets of structural calculations shall be provided for the tank structure and foundation. All such submissions shall be stamped by a Registered Professional Engineer licensed in the state of project location, as well as, by a Registered Professional Engineer employed on the tank manufacturer's engineering staff.
- C. When approved, two sets of such prints and submittal information will be returned to the bidder marked "APPROVED FOR CONSTRUCTION" and these drawings will then govern for the work detailed thereon. The approval by the Engineer of the tank supplier's drawings shall be an approval relating only to their general conformity with the bidding

drawings and specifications and shall not guarantee detail dimensions and quantities, which remains the bidder's responsibility.

- D. The tank manufacturer's and installing contractor's standard published warranty shall be included with submittal information.

PART 2 - PRODUCTS

2.1 PROJECT INFORMATION

A. Tank Size

- 1. The factory coated glass-fused-to-steel, bolt together tank shall have a nominal diameter of 64 feet, with a nominal sidewall height (to roof eave) of 21 feet.

B. The following information is in accordance with AWWA D103, is made part of this specification:

- 1. Ground Storage Tank parameters:
 - a. Total Capacity – 506,627 gallons.
- 2. Time of Completion: See Bid.
- 3. Location of Site: Latitude: 38°51'36" N. Longitude: 82°51'59" W. See drawings for specific location.
- 4. Access to Site: Access to site is from High Street / Twp. Rd. 476.
- 5. Nearest Community: Minford, OH.
- 6. Nearest Railroad: To be determined by the Contractor, if desired.
- 7. Electric Power: Electric service is not available at the site.
- 8. Compressed Air: Not available at site.
- 9. Alternate Bottom Capacity Level: Not applicable.
- 10. Pipe Materials: Inlet pipe and outlet pipe, AWWA C151 ductile iron, PC350. Water main to tank shall be ductile iron and/or AWWA C900 as specified in Section 331113 and shown on the Drawings. Overflow pipe, Schedule 80 PVC.
- 11. Snow Loading: In accordance with ASCE 7.
- 12. Wind Loading:
 - a. Wind Velocity shall be in accordance with ASCE 7, Figure 26.5, and the noted risk category.
 - b. Exposure Category: Exposure C.
- 13. Seismic Design: Per Ohio Building Code and requirements of AWWA D103, Section 14. Occupancy Category IV (Ohio Building Code). Seismic Site Classification per Ohio Building Code – C.
- 14. Location of Access Manholes, Openings and Ladders to be provided:
 - a. Provide two access hatches through tank shell. Hatch diameter shall be 24-inch.
 - b. A 2'-6" square hinged roof hatch with padlock bracket located adjacent to the roof access walkway. The opening shall have a curb four inches high, and the cover shall have a downward overlap of 2 inches.
 - c. Roof Vent: A properly sized aluminum vent assembly in accordance with AWWA D103 shall be furnished and installed above the maximum water level of sufficient capacity so that at maximum possible rate of water fill or withdrawal, the resulting interior pressure or vacuum will not exceed 0.5"

water column. The vent shall be so designed in construction as to prevent the entrance of birds and/or animals by including an expanded aluminum screen (1/2 inch) opening. An insect screen of 23 to 25 mesh polyester monofilament shall be provided and designed to open should the screen become plugged by ice formation.

15. Pipe Connections: 12-inch diameter inlet, 12-inch diameter outlet. Pipe material to be ductile iron in conformance with AWWA C151. Installation and connections shall be by CONTRACTOR.
16. Removable Silt Stop: To be provided.
17. Overflow: Minimum 8-inch-diameter pipe designed for minimum 500 gpm flow. An inverted siphon will not be acceptable as an overflow device. Overflow to terminate in a 45 degree elbow a minimum of 16 inches above grade. Provide stainless steel No. 24 mesh screen on outlet.
18. Roof Access: Provide roof access via ladder.
19. Safety Devices:
 - a. Safety Cages and Handrails: Provide exterior ladder with safety cage and step-off platforms. Offset ladders with landings not exceeding 20 feet, in conformance with OSHA requirements. Side rails shall be seal welded where rungs are placed. Ladder shall begin 8 feet above the tank base elevation.
 - b. Safety Cages: Provide safety cage on exterior ladder.
 - c. Handrails: Required on the tank roof access walkway and at the roof cap.
 - d. A hinged, lockable gate shall be installed at the base of the ladder safety cage to deter unauthorized access to the top of the tank. The OWNER shall provide and install the lock.
20. Special Vent: None.
21. Shop Inspection/Mill-Test Reports: Not Required.
22. Soil Investigation: Allowable Soil Bearing Pressure - See geotechnical report.
23. Tank Bottom: Tank shall incorporate a foundation ring embedded into the concrete foundation and a concrete floor. The concrete floor interior to the tank shall be sealed with a concrete sealant that complies with the requirements of NSF 60/61 for contact with potable water.
24. Pile Foundation: Not applicable.
25. Concrete Foundation: The floor design is of reinforced concrete with an embedded glass coated steel starter sheet.
26. Earth Cover Over Water Main: 4 feet minimum.
27. Seismic Data: To be provided by Contractor as a part of Tank Design Calculations.
28. Seismic Design Vertical Acceleration: Per AWWA D103, Section 14.
29. Freeboard for Sloshing Wave: Per AWWA D103, Section 14.
30. Seismic Design of Roof Framing and Columns: Per AWWA D103, Section 14.
31. Local Seismic Data: Not available.
32. Aluminum Dome Roof: Required.
33. Aluminum Dome Finish: Mill finish.

C. Tank Design Standards

1. The materials, design, fabrication and erection of the bolt together tank shall conform to the AWWA Standard for "Factory Coated Bolted Steel Tanks for Water Storage" - ANSI/AWWA D103, latest revision.

2. The tank coating system shall conform solely to Section 12 of ANSI/AWWA D103. NOTE: Electrostatic applied glass, baked-on epoxy painted or galvanized bolt-together tanks are not considered equal.
3. The vitreous coating on the tank, bolt head encapsulation material, and joint sealant shall have been approved for listing under ANSI/NSF Standard 61 for Indirect Additives.
4. The tank manufacturer shall be ISO-9001 certified to assure product quality.
5. The tank manufacturer shall undergo an annual FM (Factory Mutual) inspection of their glass-coated, bolted-steel tank factory and provide written proof thereof to assure product quality.

D. Additional Design Loads

1. Specific Gravity: 1.0
2. Shape Factor: 0.6
3. Factor of Safety: Per AWWA D103.

2.2 MATERIAL SPECIFICATIONS – TANK

A. Plates and Sheets:

1. All steel shall be smelted and produced in the U.S.A.
2. Plates and sheets used in the construction of the tank shell and tank floor (where applicable) shall comply with the minimum standards of AWWA D103, Section 4.4.
3. Design requirements for mild strength steel shall be ASTM A570 Grade 30 with a maximum allowable tensile stress of 15,000 psi.
4. Design requirements for high strength steel shall be ASTM A607 Grade 50 with a maximum allowable tensile stress of 26,000 psi.
5. The annealing effect created from the glass coated firing process shall be considered in determining ultimate steel strength. In no event shall yield strength greater than 50,000 psi be utilized for calculations detailed in AWWA D103, Section 5.3.2.
6. Multiple vertical bolt line sheets and plates of ASTM A607 Grade 50 only shall be manufactured such that holes are staggered in the vertical bolt lines and that no two adjoining holes are in-line horizontally, except at the center of the sheet or plate.
 - a. Bolt seam design shall generally be in accordance with the requirements of AWWA D103, Section 5.5.2; bolt spacing may be adjusted in the vertical bolt lines to increase the net section and improve joint efficiency to a maximum of 85%.
 - b. Double steel sheeting shall not be permitted to achieve structural requirements.
7. Sheet edges of sidewall and floor plates shall be mechanically rounded and flame coated with stainless steel prior to glass coating. Glass coating of the sheet edges shall be similar to the flat panel surfaces. The process shall be equal to *EDGECOAT*[™] by CST Industries, Inc.

B. Rolled Structural Shapes

1. Material shall conform to minimum standards of ASTM A36 or AISI 1010.

C. Horizontal Wind Stiffeners

1. Design requirements for intermediate horizontal wind stiffeners shall be of the "web truss" design with extended tail to create multiple layers of stiffener, permitting wind load to transfer around tank.
2. Web truss stiffeners shall be of steel with hot dipped galvanized coating.
3. Rolled steel angle stiffeners are not permitted for intermediate stiffeners.

D. Bolt Fasteners

1. Bolts used in tank lap joints shall be 1/2" - 13 UNC- 2A rolled thread, and shall meet the minimum requirements of AWWA D103, Section 4.2.
2. Bolt Material
 - a. SAE Grade 2
 - 1) Tensile Strength - 74,000 psi Min.
 - 2) Proof Load - 55,000 psi Min.
 - 3) Allowable shear stress - 18,164 psi (AWWA D103).
 - b. SAE grade 8/ASTM A325 heat treated to:
 - 1) Tensile Strength - 150,000 psi Min.
 - 2) Proof Load - 120,000 psi Min.
 - 3) Allowable shear stress - 36,818 psi (AWWA D103).
3. Bolt Finish - Zinc, mechanically deposited.
 - a. 2.0 mils minimum - under bolt head, on shank and threads
4. Bolt Head Encapsulation
 - a. High impact polypropylene co-polymer encapsulation of entire bolt head up to the splines on the shank.
 - b. Natural resin with UV (ultraviolet) light inhibitor. Color to be black.
5. Nuts and Washers
 - a. Nuts and washers utilized in the construction of the tank lap joints shall be manufactured from AISI 304 stainless steel.
6. All tank shell bolts shall be installed such that the head portion is located inside the tank, and the washer and nut are on the exterior.
7. All lap joint bolts shall be properly selected such that threaded portions will not be exposed in the "shear plane" between tank sheets. Also, bolt lengths shall be sized as to achieve a neat and uniform appearance. Excessive threads extending beyond the nut after torquing will not be permitted.
8. All lap joint bolts shall include a minimum of four (4) splines on the underside of the bolt head at the shank in order to resist rotation during torquing.

E. Sealants

1. The lap joint sealant shall be a one component, moisture cured, polyurethane compound. The sealant shall be suitable for contact with potable water and meet applicable FDA Title 21 regulations, as well as, ANSI/NSF Additives Standard 61.
2. The sealant shall be used to seal lap joints, bolt connections and sheet edges. The sealant shall cure to a rubber like consistency, have excellent adhesion to the glass coating, have low shrinkage, and be suitable for interior and exterior exposure.
3. Sealant curing rate at 73° F and 50% RH
 - a. Tack-free time: 6 to 8 hours.
 - b. Final cure time: 10 to 12 days.

4. The sealant shall be equal to Harvestore Products, Inc. System Sealer No. 79.
5. Neoprene gaskets and tape type sealer shall not be used.

2.3 TANK ROOF

- A. Roofs for tanks greater than 31 ft. diameter shall be constructed of non-corrugated triangular aluminum panels forming a spherical dome structure.
 1. Primary horizontal forces into the tank shell shall be contained by an integral aluminum tension ring (unless otherwise specified). The frame shall consist of aluminum structural members with the joints arrayed on the surface of a sphere. The arrangement of members shall result in a pattern of triangular spaces. These spaces shall be closed with light gauge aluminum panels. The members shall be joined by means of bolting their flanges to aluminum gusset plates.
 2. All metal components of the aluminum dome structure shall be aluminum or 300 series stainless steel. No galvanized, aluminized, painted, or plated steel shall be used anywhere in the dome above the mounting bracket base plates. Dissimilar materials in the supporting structure shall be isolated from the aluminum dome by means of a compatible elastomeric gasket.
 3. The entire structure shall be designed as a watertight system under all design load and temperature conditions. The design shall include sealant to be completely encapsulated by applying it to the gusset covers' inner circumferences, beneath the gusset covers' top closure plates.
 4. The aluminum closure panels shall be attached continuously along their edges to the structural members by means of batten bars, which engage the panels in an interlocking joint. Designs that incorporate raised battens, overlapping panels and/or designs that incorporate fasteners which penetrate panels and attach to structural members are expressly prohibited. The roof panels shall be fabricated from continuous 3003-H16 aluminum sheeting.
 5. Connection forces shall be transferred through gusset plates connected to the top and bottom flanges of the beam struts. The connections shall be designed as moment connections; a minimum of four bolts shall be used to connect the gusset plate to each strut flange. The structural analysis shall be performed using non-linear, second order, stiffness analysis models in accordance with ADM 2010 Chapter C. Stability shall be provided for the structure as a whole and for each of its components. The available strengths of members and connections determined in accordance with Section C.3 shall equal or exceed the required strengths determined in accordance with Section C.2
 6. Fasteners shall be designed with a factor of safety of 2.34 on ultimate strength and 1.65 on yield strength.
- B. Roof Manufacturer Experience/Qualifications:
 1. No equipment shall be supplied by any manufacturer not regularly engaged in the manufacturing and production of domes in the size and character herein specified. The manufacturer must have designed, manufactured and installed at least one (1) dome of the same size as the unit(s) specified herein. This dome must be in satisfactory use for a period not less than ten (10) years.

2. The cover manufacturer must own and operate its own US-based manufacturing facility, and the use of a fabrication facility that is not US-based and/or owned and operated by the cover manufacturer is expressly prohibited. Manufactures that do not meet these qualifications will not be considered.
3. The cover manufacturer must be ISO 9001 certified.

C. Roof Materials:

1. Bolts and Fasteners – Threaded fasteners shall be 300 series stainless steel per ASTM F593, Alloy Group 1. Lockbolts shall be 7075-T73 aluminum, 304 or 305 stainless steel. Screws shall be aluminum or 300 series stainless steel. Triangulated space truss: 6061-T6 aluminum struts and gussets.
2. Plates and Sheets - Plate and sheet material shall be aluminum alloy 3003-H16, 3105- H154, 6061-T6, 5052-H32 or 5052-H36; mill finish AA - M10 as fabricated. Minimum thickness for gussets shall be 5/16". Sheet materials shall be 0.05" minimum thickness. Triangular closure panels: .050"t 3003-H16 aluminum sheet.
3. Structural Shapes - Aluminum structural shapes shall be alloy 6061-T6. The aluminum structural members shall be a minimum of 6 inches deep. To improve torsional stability, the dome's structural members must incorporate a double web. The use of I-beams with only a single web is expressly prohibited.
4. Tension Ring - Tension ring structural shapes shall be 6061-T6 aluminum. Design of the tension ring shall be based on the net cross section of the members and shall not include top flange protrusions used for panel attachment, bolt holes, or outstanding legs that are not connected through the joints.
5. Miscellaneous Shapes - Miscellaneous aluminum shapes shall be alloy 6061-T6 or 6063-T5.
6. Gaskets - All gaskets shall be ozone resistant Silicone only. The gaskets must have a 1/8" minimum thickness.
7. Sealant - All sealants shall be silicone and resistant to ozone and ultraviolet light and conform to Federal Specification TT-S-00230C.
8. Miscellaneous Penetration Seals- All other penetration seals shall be weatherproof rubber seals.
9. Support Bearings - Acceptable bearing surfaces for sliding bearing are Teflon to stainless steel only. In order to avoid damage to the Teflon and to reduce the coefficient of bearing friction, Teflon shall not bear on aluminum surfaces. Dome supports shall utilize only bolted connections. The use of aluminum structural welding at the dome supports is expressly prohibited.
10. Dormers, doors, vents and hatches: 6061-T6, 5086-H34 or 3003-H16 aluminum.

D. Roof Vent

1. A properly sized vent assembly in accordance with AWWA D103 shall be furnished and installed above the maximum water level of sufficient capacity so that at maximum possible rate of water fill or withdrawal, the resulting interior pressure or vacuum will not exceed 0.5" water column.
2. The overflow pipe shall not be considered to be a tank vent.
3. The vent shall be constructed of aluminum.
4. The vent shall be so designed in construction as to prevent the entrance of birds and/or animals by including an expanded aluminum screen (1/2 inch) opening. An

insect screen of 23 to 25 mesh polyester monofilament shall be provided and designed to open should the screen become plugged by ice formation.

2.4 GLASS COATING SPECIFICATION

A. Surface Preparation

1. Following the decoiling and shearing process, sheets shall be steel grit-blasted on both sides to the equivalent of SSPC-10. Sand blasting and chemical pickling of steel sheets is not acceptable.
2. The surface anchor pattern shall be not less than 1.0 mil.
3. These sheets shall be evenly oiled on both sides to protect them from corrosion during fabrication.

B. Cleaning

1. After fabrication and prior to application of the coating system, all sheets shall be thoroughly cleaned by a caustic wash and hot rinse process followed immediately by hot air drying.
2. Inspection of the sheets shall be made for traces of foreign matter or rust. Any such sheets shall be re-cleaned or grit-blasted to an acceptable level of quality.

C. Coating

1. All sheets shall be primed with catalytic nickel oxide glass ground-coat on both sides, and then air-dried per section 12.4.2.1 of AWWA D103.
2. An intermediate coat to both sides of the sheets, of cobalt blue glass frit, shall be made.
3. The sheets shall then be fired at a minimum temperature of 1500 degrees F in strict accordance with the manufacturer's quality process control procedures, including firing time, furnace humidity, temperature control, etc.
4. Fired sheets shall receive a final white color coat of titanium dioxide enhanced silica glass coating on the interior surface, then re-fired in the furnace.
5. Dry film interior coating thickness shall be 10.0 -16.0 mils.
6. Dry film exterior coating thickness shall be 6.0 -11.0 mils.
7. The finished exterior color shall be cobalt blue.

D. Inspection

1. All coated sheets shall be inspected for mil thickness (Mikrotest or equal).
2. All coated sheets shall be checked for color uniformity by an electronic colorimeter.
3. An electrical leak detection test shall be performed on the inside surface after fabrication of the sheet. Sheets with excessive electrical leakers shall be rejected so as to minimize field touch up.

E. Packaging

1. All approved sheets shall be protected from damage prior to packing for shipment.
2. Heavy paper or plastic foam sheets shall be placed between each panel to eliminate sheet-to-sheet abrasion during shipment.

3. Individual stacks of panels will be wrapped in heavy mil black plastic and steel banded to special wood pallets built to the roll-radius of the tank panels. This procedure eliminates contact or movement of finished panels during shipment.
4. Shipment from the factory to the job site will be by truck, hauling the tank components exclusively. No common carrier, drop, or transfer shipments.

2.5 APPURTENANCES (per AWWA D103, Section 7)

A. Pipe Connections

1. Where pipe connections are shown to pass through tank panels, they shall be field located, saw cut, (acetylene torch cutting or welding is not permitted), and utilize an interior and exterior flange assembly. Sealer shall be applied on any cut panel edges or bolt connections.
2. Overflow piping shall be 8-inch diameter Schedule 80 PVC.

B. Outside Tank Ladder

1. An outside tank ladder shall be furnished and installed as shown on the Drawings.
2. Ladders shall be fabricated of aluminum and utilize grooved, skid-resistant rungs.
3. Safety cage and step-off platforms shall be fabricated of galvanized steel. All shall be supplied with cable safety system in compliance OSHA regulations.

C. Sidewall Access Manway

1. Two sidewall access manways shall be provided as shown on the Drawings in accordance with AWWA D-103.
2. Manways shall be a minimum of 24 inches in diameter and shall include a properly designed reinforcing frame and cover plate. A davit to hold the cover plate, when opened, is required for tanks in excess of 38' tall.

D. Identification Plate: A manufacturer's nameplate shall list the tank serial number, tank diameter and height, and maximum design capacity. The nameplate shall be affixed to the tank exterior sidewall at a location approximately five (5') feet from the tank base in a position of unobstructed view.

2.6 FOUNDATION

A. General:

1. The tank foundation is a part of this contract.
2. The tank foundation shall be designed by the manufacturer to safely sustain the structure and its live loads.
3. Tank footing design shall be based on the soil bearing capacity or greater as determined by geotechnical analysis performed by a licensed soils engineer.

B. Concrete Floor

1. The floor design is of reinforced concrete with an embedded glass coated steel starter sheet per AWWA D103-09 section 11.4.1.6 and the manufacturer's design,

and is an integral element of the tank assembly; therefore, the tank foundation and floor slab (performed in two separate pours) with embedded starter sheet shall be constructed by the tank supplier using manufacturer trained personnel regularly engaged in this type of tank construction.

2. Leveling of the starter ring shall be required and the maximum differential elevation within the ring shall not exceed one-eighth (1/8) inch, nor exceed one-sixteenth (1/16) inch within any ten (10) feet of length.
3. A leveling plate assembly, consisting of two 18" anchor rods (3/4" dia.) and a slotted plate (3 1/2" X 11" X 3/8" thk) shall be used to secure the starter ring, prior to encasement in concrete. Installation of the starter ring on concrete blocks or bricks, using shims for adjustment, is not permitted. The foundation with anchor bolts/leveling plates shall be a separate pour from the concrete floor.
4. Two water stop seals made of a butyl rubber elastomer special for this application shall be placed on the inside surface of the starter ring below the concrete floor line. These materials shall be installed as specified by the tank manufacturer.

C. Concrete Sealant:

1. Concrete sealant shall be utilized to seal the concrete floor of the storage tank that will come in contact with the potable water stored within.
2. The sealant shall be a two component urethane elastomeric coating. The coating shall be fluid applied and shall be formulated specifically for use in water and wastewater applications. The cured coating shall comply with the requirements of ANSI/NSF 61 for materials that are in contact with potable water.
3. The coating utilized shall be CIM 1061 as manufactured by C.I.M. Industries, Inc., or equal.
4. The coating shall be applied in accordance with the manufacturer's recommendations.

D. Additional Requirements:

1. Contractor shall provide three copies of the foundation design calculations to Engineer along with the shop drawings for the concrete foundation and the storage tank. These shall not be designated shop drawings but will be retained for the project files. The design calculations shall be certified by the Ohio Registered Professional Engineer responsible for their preparation.
2. Concrete design shall conform to ACI-318, ACI-117, ACI-347, and ACI 371R and shall meet the requirements of Division 3-Concrete.
3. The overturning moment used to design the pedestal and foundation shall include the moment due to eccentricity of the gravity loads caused by deflection of the structure under wind or seismic conditions.

2.7 SITE ACCESSORIES

- A. Contractor shall construct the tank overflow drain line, splash block, rip rap pit and other related appurtenances as shown on Drawings.

PART 3 - EXECUTION

3.1 ERECTION

A. Foundation

1. Construct the tank foundation in accordance with the requirements and procedures of the tank manufacturer and the requirements outlined herein.

B. Sidewall Structure

1. Field erection of the glass-coated, bolted-steel tank shall be in strict accordance with the procedures outlined in the manufacturer's erection manual, and performed by an authorized dealer of the tank manufacturer, regularly engaged in erection of these tanks.
2. Specialized erection jacks and building equipment developed and manufactured by the tank manufacturer shall be used to erect the tanks.
3. Particular care shall be taken in handling and bolting of the tank panels and members to avoid abrasion of the coating system. Prior to liquid test, all surface areas shall be visually inspected by the Engineer.
4. An electrical leak test shall be performed during erection using a nine (9) volt leak detection device. All electrical leak points found on the inside surface shall be repaired in accordance with manufacturer's published touch up procedure.
5. The placement of sealant on each panel may be observed prior to placement of adjacent panels. However, the Engineer's observation shall not relieve the bidder from his responsibility for liquid tightness.
6. No backfill shall be placed against the tank sidewall without prior written approval and design review of the tank manufacturer. Any backfill shall be placed according to the strict instructions of the tank manufacturer.

3.2 HYDROSTATIC TESTING

- A. Following completion of erection and cleaning of the tank, the structure shall be tested for liquid tightness by filling tank to its overflow elevation.
- B. Any leaks disclosed by this test shall be corrected by the erector in accordance with the manufacturer's recommendations.
- C. Water required for testing shall be furnished by the owner at the time of tank erection completion, and at no charge to the tank erector. Disposal of test water shall be the responsibility of the Contractor.
- D. Labor and equipment necessary for tank testing is to be included in the price bid.

3.3 DISINFECTION

A. Standards:

1. The tank structure shall be disinfected at the time of testing by chlorination in accordance with AWWA Specification C652 "Disinfection of Water Storage Facilities".

2. Disinfection shall not take place until tank sealant is fully cured (10 to 12 days at 73° F/50% relative humidity).
 3. Acceptable forms of chlorine for disinfection shall be:
 - a. Liquid chlorine as specified in AWWA C652.
 - b. Sodium hypochlorite as specified in AWWA C652.
 - c. Calcium hypochlorite (HTH) is not acceptable.
 4. Acceptable methods of chlorination per AWWA C652:
 - a. Section 4.3.3.
 5. Alternate methods outlined within AWWA C652 may be considered if in accordance with OEPA guidelines and upon approval of the Engineer.
 6. Contractor shall be responsible for disposing testing of the excess water from disinfection testing. Contractor shall coordinate disposal with the Owner. Procedures used for disposal shall be in accordance with OEPA guidelines.
- B. Contractor shall coordinate testing of water samples taken following disinfection of the tank. Two sequential bacteriological samples, taken a minimum of 24 hours apart, shall be obtained before placing the tank in service. Testing shall be completed by an OEPA certified laboratory.

3.4 WARRANTY INSPECTION

- A. On or near the one-year anniversary date of initial tank use the manufacturer's authorized dealer shall make a visual inspection of the tank interior coating and appurtenances; tank exterior coating and appurtenances; and the immediate area surround the tank. A written summary of this inspection will be filed with the tank owner and the tank manufacturer.

END OF SECTION 331613.14