Project Manual for

Hardin Pike Force Main Replacement

City of Wapakoneta

2020

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TABLE OF CONTENTS

	Page
C-111 Advertisement for Bids	1-2
C-200 Instruction to Bidders	1-10
C-410 Bid Form for Construction Projects	1-8
C-430 Bid Guaranty and Contract Bond	1-2
C-510 Notice of Award	1
C-520 Agreement Between Owner and Contractor for Construction Contract	1-8
C-550 Notice to Proceed	1
C-610 Performance Bond	1-2
C-614 Maintenance and Guarantee Bond	1-3
C-620 Contractor's Application for Payment	1-4
C-620A Contractor's Affidavit – Curent Estimate	1
C-625 Certificate of Substantial Completion	1
C-625A Contractor's Affidavit – Waiver of Liens/Final Estimate	1
C-700 General Conditions	1-69
C-800 Supplementary Conditions	1-16
Exhibit 1 - Wage Rates	
Exhibit 2 – Electronic Document Release Form	
Exhibit 3 – City of Wapakoneta Contract Requirements	
Exhibit 4 – ODOT Bond Requirements	

Foreword to Technical Specifications

DIVISION 1 - GENERAL REQUIREMENTS

01010	Definition of Contract Items - (Single)
01043	Coordination and Control of the Work
01090	Reference Standards
01300	Submittals
01310	Construction Schedules and Documentation
01320	Electronic Project Management System (EPMS)
01350	Common Product Requirements
01410	Laboratory Services
01500	Maintaining Traffic
01565	Temporary Restoration and Maintenance of Pavements, Curbs, and Walkways
01568	Pollution Control
01800	Construction Survey Work
01810	Video Recording

DIVISION 2 - UNDERGROUND, PAVEMENT, AND SITE WORK
02110 Removal of Structures and Obstructions
02200 Excavation and Backfill
02552 Precast Concrete Manholes
02555 Pressure Pipe
02557 Valves
02600 Pavements, Curbing, and Walks
02710 Fencing
02800 Sodding, Seeding, and Mulching
02955 Carrier Pipe in Bored Casing

DIVISION 3 – CONCRETE N/A

DIVISION 4 – MASONRY N/A

DIVISION 5 - METALS
05540 Iron Castings

DIVISION 6 - WOOD AND PLASTICS N/A

DIVISION 7 - THERMAL AND MOISTURE PROTECTION N/A

DIVISION 8 - DOORS AND WINDOWS N/A

DIVISION 9 - FINISHES
09900 Painting

DIVISION 10 – SPECIALTIES N/A

DIVISION 11 - EQUIPMENT AND SYSTEMS N/A

DIVISION 12 – FURNISHINGS N/A

DIVISION 13 - SPECIAL CONSTRUCTION N/A

DIVISION 14 - CONVEYING SYSTEMS N/A

DIVISION 15 - MECHANICAL
15010 General Mechanical Provisions
15210 Piping
15211 Small Piping and Valves
15250 Valves

DIVISION 16 – ELECTRICAL N/A

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

END OF SECTION

CITY OF WAPAKONETA

WAPAKONETA, OH
HARDIN PIKE FORCE MAIN REPLACEMENT 963-7502.004

ADVERTISEMENT FOR BIDS

Sealed Bids for Hardin Pike Force Main Replacement, will be received by the City of Wapakoneta, at the 701 Parlette Court, Wapakoneta, Ohio 45895, until 10:00 A.M., local time, on May 6, 2021, at which time they will be publicly opened and read.

In general, the work consists of replacing the existing 10" force main with 2,500 feet of new 16-inch force main.

The issuing office is Jones & Henry Engineers, Ltd., 3103 Executive Parkway, Suite 300, Toledo, Ohio 43606. Copies of the Bidding Documents may be examined at the Owner's office listed above or the issuing office, without charge.

Technical questions regarding the project should be e-mailed to the Project Manager Theodore A. Bennett, P.E. at tbennett@jheng.com at Jones & Henry Engineers, Ltd.

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

Neither Owner nor Engineer has any responsibility for the accuracy, completeness or sufficiency of any bid documents obtained from any source other than the source indicated in these documents. Obtaining these documents from any other source(s) may result in obtaining incomplete and inaccurate information. Obtaining these documents from any source other than directly from the source listed herein may also result in failure to receive any addenda, corrections, or other revisions to these documents that may be issued.

Bids must be submitted on the forms bound herein, must contain the names of every person or company interested therein, and shall be accompanied by either a Bid Guaranty and Contract Bond in the amount of 100% of the amount bid with satisfactory corporate surety, or by a certified check on a solvent bank in the amount of not less than 10% of the amount of the Bid, subject to conditions provided in the Instructions to Bidders. The successful bidder will be required to furnish satisfactory Performance Bond and Maintenance and Guarantee Bond in the amount of 100% of the Bid.

The Contractor shall be required to pay not less than the prevailing wage rates established by the Ohio Bureau of Employment Services, Wage and Hour Division.

Any Bid may be withdrawn prior to the scheduled closing time for receipt of Bids, but no bidder shall withdraw his Bid within 90 days after the actual opening thereof.

The Owner reserves the right to reject any or all Bids, waive irregularities in any Bid, and to accept any Bid which is deemed most favorable to the Owner.

Floyd Gregg

Safety Service Director

To Newspaper

Advertise: April 13, 2021

April 20, 2021

Furnish Affidavit

INSTRUCTIONS TO BIDDERS

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. Bidder - One who submits a Bid directly to Owner as distinct from a sub-bidder, who submits a bid to a Bidder.

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

C. Successful Bidder - The Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

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 authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within 5 days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

A. Evidence of Bidder's authority to do business in the state where the Project is located.

B. Subcontractor and Supplier qualification information; coordinate with provisions of Article 12 of these Instructions, "Subcontractors, Suppliers, and Others."

C. List of equipment suppliers to be used.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

4.01 *Site and Other Areas*

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

B. Easements and their conditions are listed in these documents.

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify:

a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.

b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in 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.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

C. Adequacy of Data: 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 subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 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 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.

B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. 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.

4.04 *Owner's Safety Program*

A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.05 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy itself as to all 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 adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;

F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid 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 bid and within the times required, 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. 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;

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

J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – RESERVED

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 delivered to all parties recorded as having received the Bidding Documents. Questions after the date established in the Instructions to Bidders 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, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 100 percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be substantially completed, and completed and ready for final payment, are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the Work:

If requested by Owner, 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, or other individual or entity. 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 an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

12.04 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, or other individuals or entities. Declining to make requested substitutions will 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 subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink or printed format. 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, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown. The corporate seal shall be affixed and attested by the corporate secretary or an assistant corporate secretary.

13.03 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 partnership's address for receiving notices shall be shown.

13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.

13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.

13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.

13.07 All names shall be printed in ink below the signatures.

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

13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

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

ARTICLE 14 – BASIS OF BID

14.01 RESERVED

14.02 *Unit Price*

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

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 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.

14.03 *Allowances*

A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 15 – SUBMITTAL OF BID

15.01 The Bidding Documents have been provided electronically, a Bidder is responsible for furnishing separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

15.02 A Bid shall be received 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 a plainly marked package 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 package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to Owner at location indicated in the Advertisement.

15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.

16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

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 the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.

19.03 Evaluation of Bids

A. 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.

B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 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 Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

ARTICLE 23 – RESERVED

ARTICLE 24 – RETAINAGE

24.01 Provisions concerning retainage are set forth in the Agreement.

ARTICLE 25 – WAGE RATES

25.01 The Bidder to whom the Contract is awarded will be required to pay as a minimum, the prevailing wage rates, current throughout the work, promulgated by the State Wage rates received for this project are included in the Exhibits of the Supplementary Conditions.

ARTICLE 26 – ODOT BONDING REQUIREMENTS

26.01 See Supplemental Conditions Section C-800, 6.01, H for bonding requirements for work in the ODOT Right-of-Way.

ARTICLE 27 – QUESTIONS REGARDING BID DOCUMENTS

27.01 All questions shall be submitted by e-mail to Theodore Bennett, P.E. at Jones & Henry Engineers, Ltd. at 3103 Executive Parkway, Suite 300, Toledo, OH 43606, tbennett@jheng.com, no later than Friday April 30, at 10:00 A.M.

ARTICLE 28 – ENGINEER'S ESTIMATE

28.01 The Engineer's Opinion of Probable Construction costs is $ 590,920.00.

BID FORM

CITY OF WAPAKONETA

WAPAKONETA, OH

HARDIN PIKE FORCE MAIN REPLACEMENT

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

City of Wapakoneta

701 Parlette Court

Wapakoneta, Ohio 45895

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.	Addendum, Date
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder 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 Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.

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

J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the e execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for unit prices indicated on the following price(s):

UNIT PRICE BID

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Item No.	Description	Estimated Amount	Unit	Unit Cost in Numbers		Unit Price in Words	Total Estimated Cost of Item	
1	Mobilization and Demobilization	1	LS					
2a	16-inch Force Main, Type B	77	LF					
2b	16-inch Force Main, Type C	1,845	LF					
2c	16-inch Force Main, Type ODOT7	140	LF					
2d	16-inch Force Main in 30-inch Bored Casing	587	LF					
2e	Force Main Removed	25	LF					
2f	Force Main Plug	2	EA					
2g	Connection to Existing Force Main	1	EA					
3a	Bypass Structure	1	EA					
3b	Air Release Valve Manhole Structure	2	EA					
4a	Flexible Pavement Trench Repair	151	SY					

Item No.	Description	Estimated Amount	Unit	Unit Cost in Numbers		Unit Price in Words	Total Estimated Cost of Item	
4b	Gravel Driveway Repair	93	SY					
5	Video Recording of Zone of Influence	1	LS					
6	Maintenance of Traffic	1	LS					
7	Fence Modifications	75	LF					
8	Pump Station Piping Modifications	1	LS					
Total Bid Price								

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. Evidence of authority to do business in the state of the Project;

C. Required Bidder Qualification Statement with supporting data.

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

_____

_____

_____

_____

Telephone Number: _____

Email Address: _____

Contact Name: _____

_____

Bidder's License No.: _____
(where applicable)

PERSONAL PROPERTY TAX AFFIDAVIT

STATE OF OHIO)
)ss.
COUNTY OF _____)

_____, being first duly sworn, deposes and says as follows: answering whichever is applicable by placing an "X" before items 1 or 2.

1. ( ) We are not charged with any delinquent personal property taxes on the general tax list of personal property in _____ County, Ohio.

2. ( ) We are charged with delinquent personal property taxes on the general tax list of _____County, Ohio including unpaid penalties and interest in the amount of $_____.

_____
Bidder

By: _____

Title: _____

Sworn and subscribed before me this _____ day of _____ 20 _____.

_____
Notary Public in and for

_____ State

My Commission Expires:

_____ 20_____

BID GUARANTY AND CONTRACT BOND
(SECTION 153.571 OHIO REVISED CODE)

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____ _____as principal and _____ _____ as sureties, are hereby held and firmly bound unto _____as OWNER in the penal sum of the dollar amount of the bid submitted by the principal to the OWNER on _____ _____ to undertake the project known as _____ _____.

The penal sum referred to herein shall be the dollar amount of the principal's bid to the OWNER incorporating any additive or deductive alternate proposals made by the principal on the date referred to above to the OWNER, which are accepted by the OWNER. In no case shall the penal sum exceed the amount of _____ _____dollars.

(If the foregoing blank is not filled in, the penal sum will be the full amount of the principal's bid, including alternates. Alternatively, if the blank is filled in, the amount stated must not be less than the full amount of the bid including alternates, in dollars and cents. A percentage is not acceptable.) For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named principal has submitted a bid on the above referred to project;

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

Now also, if the said principal shall well and faithfully do and perform the things agreed to be done and performed according to the terms of said contract; and shall pay all lawful claims of

subcontractors, materialmen, and laborers, for labor performed and material furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the OWNER herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

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

SIGNED AND SEALED this _____ day of _____, 20_____.

Principal:

_____

By: _____

Title: _____

Surety:

_____

By _____
Attorney-in-Fact

Surety Company Address:

_____
Street

_____
City State Zip

Surety Agent's Address:

_____
Agency Name

_____
Street

_____
City State Zip

NOTICE OF AWARD

Date of Issuance:

Owner:	City of Wapakoneta, OH	Owner's Contract No.:	
Engineer:	Jones & Henry Engineers, Ltd.	Engineer's Project No.:	963-7502.004
Project:	Hardin Pike Force Main Replacement	Contract Name:	Hardin Pike Force Main Replacement

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated _____ for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

_____ .

[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: $_____*[note if subject to unit prices, or cost-plus]*

5 unexecuted counterparts of the Agreement will be sent by the Engineer under separate cover.

☐ a set of the Drawings will be delivered separately from the Contract Booklets.

You must comply with the following conditions precedent within 15 days of the date of this Notice of Award:

1. Deliver to Owner 5 counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.

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

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: City of Wapakoneta, Ohio

Authorized Signature

By:

Title:

Copy: Jones & Henry Engineers, Ltd.

AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between City of Wapakoneta, Ohio ("Owner") and _____ ("Contractor").

Owner and Contractor hereby 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 in Section 2.01.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: In general, the work consists of replacing the existing 10" force main with 2,500 feet of new 16 inch force main.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by Jones & Henry Engineers, Ltd..

3.02 The Owner has retained Jones & Henry Engineers, Ltd. ("Engineer") 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 *Contract Times: Days*

A. The Work will be substantially completed within 150 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 180 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 as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the

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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):

1. Substantial Completion: Contractor shall pay Owner $500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.

2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner $500.00 for each day that expires after such time until the Work is completed and ready for final payment.

3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages*

A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

A. Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents.

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

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 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 once each month during performance of the Work as

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provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in 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 elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

   a. 92 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

   b. 92 percent of cost of materials and equipment not incorporated in the Work.

B. 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 set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less amounts of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall not bear interest.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

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

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, 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 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 adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary

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Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.

E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no 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.

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 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.

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

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to ___, inclusive).
2. Bid Guarantee & Contract bond (pages ___ to ___, inclusive).
3. Performance bond (pages ___ to ___, inclusive).
4. Labor and Maintenance bond (pages ___ to ___, inclusive).
5. Maintenance and Guarantee bond (pages ___ to ___, inclusive).
6. General Conditions (pages ___ to ___, inclusive).
7. Supplementary Conditions (pages ___ to ___, inclusive).
8. Specifications as listed in the table of contents of the Project Manual.
9. Drawings (not attached but incorporated by reference) consisting of ___ sheets with each sheet bearing the following general title: ___ **[or]** the Drawings listed on the attached sheet index.

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10. Addenda (numbers ___ to ___, inclusive).
11. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid (pages ___ to ___, inclusive).
12. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.
    d. Field Orders.

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 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. Unless expressly agreed to elsewhere in the Contract, 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, money that may become due and money that is 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 successors, assigns, and legal representatives to the other party hereto, its 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.

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10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

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IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

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

OWNER:

_____

By: _____

Title: _____

Attest: _____

Title: _____

Address for giving notices:

_____

_____

_____

CONTRACTOR:

_____

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

_____

_____

_____

License No.: _____
(where applicable)

CERTIFICATION OF FISCAL OFFICER

The undersigned, as _____ of _____ hereby certifies that funds sufficient to meet the requirement of this Contract have been lawfully appropriated for such purpose and are in the treasury, or in the process of collection.

By: _____

Title: _____

APPROVAL BY OWNER'S LEGAL OFFICER

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By: _____

Title:

Date: _____

EJCDC® C-520 (Rev. 1), Agreement Between Owner and Contractor for Construction Contract (Stipulated Price).
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NOTICE TO PROCEED

Owner:	City of Wapakoneta	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	Jones & Henry Engineers, Ltd.	Engineer's Project No.:	963-7502.004
Project:	Hardin Pike Force Main Replacement	Contract Name:	
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is_____] ***or*** [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:

Submit required documentation for funding sources and insurance in compliance with the Contract.

Owner**:**

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that _____ _____ Contractor, as Principal and_____ _____, as Surety, are held and firmly bound unto _____, hereinafter called the Owner, in the penal sum of _____ dollars ($),good and lawful money of the United States of America to be paid to said Owner, its legal representatives and assigns, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, and each and every one of them jointly and severally, firmly by these presents.

WHEREAS, the above-named Principal has entered into a certain written Agreement with the Owner, dated the _____ day of _____ A.D. 20 , for construction of work entitled (hereinafter called the Contract) which Contract and Specifications for said work shall be deemed a part hereof as fully as if set out herein.

NOW THEREFORE, THE CONDITIONS OF THIS OBLIGATION IS SUCH, that if the said Principal shall well and faithfully do and perform the things agreed by him to be done and performed according to the terms of said Contract and shall pay all lawful claims of subcontractors, material suppliers, and laborers, for labor performed and materials furnished in carrying forward, performing or completing of the said Contract, we agreeing and assenting that this undertaking shall be for the benefit of any material supplier or laborer having a just claim as well as for the obligee herein, then this obligation shall be void, otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said surety, for value received, hereby stipulates and agrees that no charge, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Contract or to the work of the Specifications.

WITNESS our hands and seals this _____ day of _____ A.D. 20 .

Witnesses:

Principal:

_____ _____
Printed Printed

_____ _____ (Seal)
Signature Principal Signature

_____ _____
Printed

_____ _____ (Seal)
Signature Surety Signature

I hereby approve the form and correctness of the foregoing Bond.

_____
Owner's Legal Officer

Date: _____

MAINTENANCE AND GUARANTEE BOND

KNOW ALL MEN BY THESE PRESENTS, that _____ _____ Contractor, as Principal and_____ _____, as Surety, are held and firmly bound unto _____, hereinafter called the Owner, in the penal sum of _____ dollars ($),good and lawful money of the United States of America to be paid to said Owner, its legal representatives and assigns, for which payment well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, and each and every one of them jointly and severally, firmly by these presents.

WHEREAS, the above-named Principal has entered into a certain written Agreement with the Owner, dated the _____ day of _____ A.D. 20 , for construction of work entitled (hereinafter called the Contract) which Contract and Specifications for said work shall be deemed a part hereof as fully as if set out herein.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that by and under said Contract, the above-named Principal has agreed with the Owner that for a period specified in paragraph 15.08. of the General Conditions, to keep in good order and repair any defect in all the work done under said Contract either by the Principal or his Subcontractors, or his material suppliers, that may develop during said period due to improper materials, defective equipment, workmanship or arrangements, and any other work affected in making good such imperfections, shall also be made good all without expense to the Owner, excepting only such part or parts of said work as may have been disturbed without the consent or approval of the Principal after the final acceptance of the work, and that whenever directed

so to do by the Owner by notice served in writing, either personally or by mail on the Principal at

_____

_____

OR _____

legal representatives, or successors, or on the Surety at _____

_____

WILL PROCEED at once to make such repairs as directed by said Owner; and in case of failure so to do within one week from the date of service of such notice, or within reasonable time not less than one week, as shall be fixed in said notice, then the Owner shall have the right to purchase such materials and employ such labor and equipment as may be necessary for the purpose, and to undertake, do and make such repairs, and charge the expense thereof, to and receive same from said Principal or Surety. If any repair is necessary to be made at once to protect life and property, then and in that case, the Owner may take immediate steps to repair or barricade such defects without notice to the Contractor. In such accounting, The Owner shall not be held to obtain the lowest figures for the doing of the work, or any part thereof, but all sums actually paid therefore shall be charged to the Principal or Surety. In this connection, the judgment of the Owner is final and conclusive. If the said Principal for a period specified in paragraph 13.12. of the General Conditions and, shall keep said work so constructed under said Contract in good order and repair, excepting only such part or parts of said work which may have been disturbed without the consent or approval of said Principal after the final acceptance of the same, and shall whenever notice is given as hereinbefore specified, at once proceed to make repair as in said notice directed, or shall reimburse said Owner for any expense incurred by making such repairs, should the Principal or Surety fail to do as hereinbefore specified, and shall fully indemnify, defend, and save harmless the Owner from all suits and actions for damages of every name and description brought or claimed against it for or on account of any injury or damage to person or property received or sustained by any party or parties, by or from any of the acts or omissions or through the negligence of said Principal, servants, agents, or employees, in the prosecution of the work included in said Contract, then the above obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective authorized officers this _____ day of _____ A.D. 20 .

Signed, Sealed, and Delivered

In the Presence of:

Witnesses:

_____	_____
Printed	
_____	_____ (Seal)
Signature	Principal
_____	_____
Printed	
_____	_____ (Seal)
Signature	Surety

I hereby approve the form and correctness of the foregoing Bond.

_____
Owner's Legal Officer

Date: _____

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Contractor's Application for Payment No. _____

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

Application For Payment

Change Order Summary

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

1. ORIGINAL CONTRACT PRICE..... $ _____

2. Net change by Change Orders..... $ _____

3. Current Contract Price (Line 1 ± 2)..... $ _____

4. TOTAL COMPLETED AND STORED TO DATE (Column F on Progress Estimate)..... $ _____

5. RETAINAGE:

a. X _____ **Work Completed**..... $ _____

b. X _____ **Stored Material**..... $ _____

c. Total Retainage (Line 5a + Line 5b)..... $ _____

6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)..... $ _____

7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... $ _____

8. AMOUNT DUE THIS APPLICATION..... $ _____

9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)..... $ _____

Contractor's Certification

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

By:	Date:

Payment of: $ _____
(Line 8 or other - attach explanation of the other amount)

is recommended by: _____ _____
(Engineer) (Date)

Payment of: $ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ _____
(Owner) (Date)

Approved by: _____ _____
Funding Agency (if applicable) (Date)

Sample

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Progress Estimate - Unit Price Work

Contractor's Application

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

Stored Material Summary

Contractor's Application

For (Contract):	Application Number:
Application Period:	Application Date:

A		B	C		D		E		F		G
Bid Item No.	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Storage Location	Description of Materials or Equipment Stored	Stored Previously: Date Placed into Storage (Month/Year)	Stored Previously: Amount ($)	Amount Stored this Month ($)	Subtotal Amount Completed and Stored to Date (D + E)	Incorporated in Work: Date (Month/Year)	Incorporated in Work: Amount ($)	Materials Remaining in Storage ($) (D + E - F)
				Totals							

Sample

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CONTRACTOR'S AFFIDAVIT
CURRENT ESTIMATE

STATE OF _____)
) ss
County of _____)

The undersigned, _____, hereby represents that on _____ it was awarded a contract by the City of Wapakoneta, Ohio, hereinafter called Owner, to construct Hardin Pike Force Main Replacement, 2020, in accordance with terms and conditions of Contract No. _____; and the undersigned further represents that all progress payments heretofore received by the Contractor from the Owner on account of the Work have been applied by the Contractor to discharge in full all of the Contractor's obligations incurred in connection with the Work covered by all prior progress payments in accordance with the applicable subcontracts, except as follows:_____
_____.

This affidavit is freely and voluntarily given with full knowledge of the facts, on this _____ day of ,
A.D. 20__.

_____Contractor

_____By
Title

Subscribed and sworn to before me this ____ day of _____, A.D. 20_____

_____
Notary Public

(Seal) My Commission Expires _____

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	City of Wapakoneta, Ohio	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	Jones & Henry Engineers, Ltd.	Engineer's Project No.:	963-7502.004
Project:	Hardin Pike Force Main Replacement	Contract Name:	

This [preliminary] [final] Certificate of Substantial Completion applies to:

☐ All Work ☐ The following specified portions of the Work:

_____

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and 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 Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: ☐ None
☐ As follows

Amendments to Contractor's responsibilities: ☐ None
☐ As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

EXECUTED BY ENGINEER:	RECEIVED:	RECEIVED:
By: _____	By: _____	By: _____
(Authorized signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

CONTRACTOR'S AFFIDAVIT
WAIVER OF LIENS/FINAL ESTIMATE

STATE OF _____)
) ss
County of _____)

The undersigned, _____

hereby represents that on _____ it was awarded a contract by the City of Wapakoneta hereinafter called the OWNER, to construct the Hardin Pike Force Main in accordance with terms and conditions of Contract No. _____; and the undersigned further represents that the subject work has now been accomplished and the said Contract has now been completed.

The undersigned hereby warrants and certifies that all of its indebtedness arising by reason of the said Contract has been fully paid or satisfactorily secured; and that all claims from Subcontractors and others for labor and material used in accomplishing the said project, as well as all other claims arising from the performance of the said Contract, have been fully paid or satisfactorily settled. The undersigned further agrees that, if any such claim should hereafter arise, he (it) shall assume responsibility for the same immediately upon request to do so by the OWNER.

The undersigned, for a valuable consideration, the receipt of which is hereby acknowledged, does further hereby waive, release and relinquish any and all claims or right of lien which the undersigned now has or may hereafter acquire upon the subject premises for labor and material used in accomplishing said project owned by the OWNER.

This affidavit is freely and voluntarily given with full knowledge of the facts, on this day of_____, A.D. 20___.

By _____
CONTRACTOR

Title _____

Subscribed and sworn to before me this _____ day of _____, A.D. 20__.

_____
Notary Public

(Seal) My Commission Expires _____

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

Page

ARTICLE 1 – Definitions and Terminology 1
1.01 Defined Terms 1
1.02 Terminology 5
ARTICLE 2 – Preliminary Matters 6
2.01 Delivery of Bonds and Evidence of Insurance 6
2.02 Copies of Documents 6
2.03 Before Starting Construction 7
2.04 Preconstruction Conference; Designation of Authorized Representatives 7
2.05 Initial Acceptance of Schedules 7
2.06 Electronic Transmittals 8
ARTICLE 3 – Documents: Intent, Requirements, Reuse 8
3.01 Intent 8
3.02 Reference Standards 8
3.03 Reporting and Resolving Discrepancies 9
3.04 Requirements of the Contract Documents 10
3.05 Reuse of Documents 10
ARTICLE 4 – Commencement and Progress of the Work 11
4.01 Commencement of Contract Times; Notice to Proceed 11
4.02 Starting the Work 11
4.03 Reference Points 11
4.04 Progress Schedule 11
4.05 Delays in Contractor's Progress 11
ARTICLE 5 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions 12
5.01 Availability of Lands 12
5.02 Use of Site and Other Areas 13
5.03 Subsurface and Physical Conditions 14
5.04 Differing Subsurface or Physical Conditions 14

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5.05 Underground Facilities 16
~~5.06 Hazardous Environmental Conditions at Site~~ 18
ARTICLE 6 – Bonds and Insurance 20
6.01 Performance, Payment, and Other Bonds 20
6.02 Insurance—General Provisions 20
6.03 Contractor's Insurance 22
6.04 Owner's Liability Insurance 24
6.05 Property Insurance 24
6.06 Waiver of Rights 26
6.07 Receipt and Application of Property Insurance Proceeds 27
ARTICLE 7 – Contractor's Responsibilities 27
7.01 Supervision and Superintendence 27
7.02 Labor; Working Hours 28
7.03 Services, Materials, and Equipment 28
7.04 "Or Equals" 28
7.05 Substitutes 29
7.06 Concerning Subcontractors, Suppliers, and Others 31
7.07 Patent Fees and Royalties 33
7.08 Permits 33
7.09 Taxes 33
7.10 Laws and Regulations 33
7.11 Record Documents 34
7.12 Safety and Protection 34
7.13 Safety Representative 35
7.14 Hazard Communication Programs 35
7.15 Emergencies 36
7.16 Shop Drawings, Samples, and Other Submittals 36
7.17 Contractor's General Warranty and Guarantee 38
7.18 Indemnification 39
7.19 Delegation of Professional Design Services 39
ARTICLE 8 – Other Work at the Site 40
8.01 Other Work 40
8.02 Coordination 41

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8.03 Legal Relationships 41
ARTICLE 9 – Owner's Responsibilities 42
9.01 Communications to Contractor 42
9.02 Replacement of Engineer 42
9.03 Furnish Data 42
9.04 Pay When Due 42
9.05 Lands and Easements; Reports, Tests, and Drawings 43
9.06 Insurance 43
9.07 Change Orders 43
9.08 Inspections, Tests, and Approvals 43
9.09 Limitations on Owner's Responsibilities 43
9.10 Undisclosed Hazardous Environmental Condition 43
9.11 Evidence of Financial Arrangements 43
9.12 Safety Programs 43
ARTICLE 10 – Engineer's Status During Construction 44
10.01 Owner's Representative 44
10.02 Visits to Site 44
10.03 Project Representative 44
10.04 Rejecting Defective Work 44
10.05 Shop Drawings, Change Orders and Payments 44
10.06 Determinations for Unit Price Work 45
10.07 Decisions on Requirements of Contract Documents and Acceptability of Work 45
10.08 Limitations on Engineer's Authority and Responsibilities 45
10.09 Compliance with Safety Program 46
ARTICLE 11 – Amending the Contract Documents; Changes in the Work 46
11.01 Amending and Supplementing Contract Documents 46
11.02 Owner-Authorized Changes in the Work 47
11.03 Unauthorized Changes in the Work 47
11.04 Change of Contract Price 47
11.05 Change of Contract Times 48
11.06 Change Proposals 48
11.07 Execution of Change Orders 49
11.08 Notification to Surety 50

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ARTICLE 12 – Claims 50
12.01 Claims 50
ARTICLE 13 – Cost of the Work; Allowances; Unit Price Work 51
13.01 Cost of the Work 51
13.02 Allowances 54
13.03 Unit Price Work 54
ARTICLE 14 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work 55
14.01 Access to Work 55
14.02 Tests, Inspections, and Approvals 55
14.03 Defective Work 56
14.04 Acceptance of Defective Work 56
14.05 Uncovering Work 57
14.06 Owner May Stop the Work 57
14.07 Owner May Correct Defective Work 57
ARTICLE 15 – Payments to Contractor; Set-Offs; Completion; Correction Period 58
15.01 Progress Payments 58
15.02 Contractor's Warranty of Title 61
15.03 Substantial Completion 61
15.04 Partial Use or Occupancy 62
15.05 Final Inspection 63
15.06 Final Payment 63
15.07 Waiver of Claims 64
15.08 Correction Period 65
ARTICLE 16 – Suspension of Work and Termination 65
16.01 Owner May Suspend Work 65
16.02 Owner May Terminate for Cause 66
16.03 Owner May Terminate For Convenience 67
16.04 Contractor May Stop Work or Terminate 67
ARTICLE 17 – Final Resolution of Disputes 68
17.01 Methods and Procedures 68
ARTICLE 18 – Miscellaneous 68
18.01 Giving Notice 68

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18.02 Computation of Times 68
18.03 Cumulative Remedies 68
18.04 Limitation of Damages 69
18.05 No Waiver 69
18.06 Survival of Obligations 69
18.07 Controlling Law 69
18.08 Headings 69

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. 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, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

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. *Bid*—The offer of a Bidder submitted on the prescribed form setti7ng forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a

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demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Engineer*—The individual or entity named as such in the Agreement.

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

22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and

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the requirements of the Contract, does not establish a Hazardous Environmental Condition.

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

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

27. *Notice to Proceed*—A written notice 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.

28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

29. *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.

30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.

32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.

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

34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.

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35. *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.

36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *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, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

39. *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.

40. *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.

41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.

42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

43. *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 a Subcontractor.

44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.

45. *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 but not limited to those that convey

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electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

46. *Unit Price Work*—Work to be paid for on the basis of unit prices.

47. *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; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated 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 information in the Contract Documents and with the design concept of the 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 Article 10 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

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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 15.03 or 15.04).

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. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. Unless stated otherwise in the Contract Documents, words or phrases that 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. *Bonds*: 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 Contractor's Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

C. *Evidence of Owner's Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

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B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), 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;

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.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *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 2.03.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.

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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 the component parts of the Work.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, 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.

~~C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.~~

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

A. Standards Specifications, Codes, Laws and Regulations

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, 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, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there

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were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, 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 part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*:

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then 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 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

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 had actual knowledge thereof.

B. *Resolving Discrepancies*:

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

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

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers 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 its consultants, including electronic media editions, or reuse any 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 adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions 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.

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ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *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 Contract 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 Contract. 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 Contract, whichever date is earlier~~.

4.02 *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 such date.

4.03 *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.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.

B. 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, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, 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 Times and Contract Price. 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.

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B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. 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. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
2. abnormal weather conditions;
3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
4. acts of war or terrorism.

D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.

G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *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.

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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 permanent improvements are to be made 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.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*:

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent 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

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Contractor shall remove from the Site and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;

2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site 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 5.03 is materially inaccurate; or

2. is of such a nature as to require a change in the Drawings or Specifications; or

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

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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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;

   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 Paragraph 13.03; and,

   c. 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.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

   a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the

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submission of a Bid or becoming bound under a negotiated contract, or otherwise; or

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

c. Contractor failed to give the written notice as required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent 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 do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; 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 information and data regarding existing Underground Facilities at the Site;

b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

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

d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then 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 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

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C. *Engineer's Review*: Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments*:

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

    a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;

    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 Paragraph 13.03;

    c. 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; and

    d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

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~~5.06 *Hazardous Environmental Conditions at Site*~~

~~A. *Reports and Drawings*: The Supplementary Conditions identify:~~

~~1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and~~

~~2. Technical Data contained in such reports and drawings.~~

~~B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors 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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) 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. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for

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whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. 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, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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 (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

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K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, 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. 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 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.

B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.

D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then 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 bond and surety requirements above.

E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or

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authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

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

F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, 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.

G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.

H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.

J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

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6.03 *Contractor's Insurance*

A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
4. Foreign voluntary worker compensation (if applicable).

B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:

1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
2. claims for damages insured by reasonably available personal injury liability coverage.
3. 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.

C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage:
   a. Such insurance shall be maintained for three years after final payment.
   b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Broad form property damage coverage.
4. Severability of interest.
5. Underground, explosion, and collapse coverage.
6. Personal injury coverage.
7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

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8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against 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. The automobile liability policy shall be written on an occurrence basis.

E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.

F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, 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 (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.

H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

~~I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:~~

1. include at least the specific coverages provided in this Article.

2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

~~3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice,~~

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~~Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.~~

4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.

5. be appropriate for the Work being performed and provide protection from claims that 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.

J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

~~A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, 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.~~

B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable 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 Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or 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; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be

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specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
8. allow for the waiver of the insurer's subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

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C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.

~~D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.~~

E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.

F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, 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 insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, 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 Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, 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 or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, 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

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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 occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.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, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, 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 builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *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

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responsible for the means, methods, techniques, sequences, and procedures of construction.

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.

7.02 *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, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *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, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work 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.

7.04 *"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 Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.

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1. If Engineer in its sole discretion determines that 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, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, 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

      4) it is not objectionable to Owner.

   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.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent

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possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. 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:

   a. shall certify that the proposed substitute item will:

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

      2) be similar in substance to that specified, and

      3) be suited to the same use as that specified.

   b. will state:

      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,

      2) whether 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

      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

   c. will identify:

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

      2) available engineering, sales, maintenance, repair, and replacement services.

   d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be

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evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

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

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable 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.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.

B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an

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acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.

F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. 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 the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. 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.

J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.

K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.

L. 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.

M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.

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

O. 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 create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

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7.07 *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, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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.

7.08 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *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.

7.10 *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

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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 or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. 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, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

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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 Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and protection 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 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *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.

7.14 *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.

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7.15 *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.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements*:

1. Before submitting a Shop Drawing or Sample, Contractor shall have:

a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

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

c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

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

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 of that submittal, and that Contractor approves the 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 set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings*:

a. Contractor shall submit the number of copies required in the Specifications.

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

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provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples*:

   a. Contractor shall submit the number of Samples required in the Specifications.

   b. Contractor shall 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 7.16.D.

3. 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. *Other Submittals*: Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.

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 or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample 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 7.16.A.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 will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

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7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.

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.

2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *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 officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on 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;

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6. the issuance of a notice of acceptability by Engineer;
7. any inspection, test, or approval by others; or
8. any correction of defective Work by Owner.

D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, 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 officers, directors, members, partners, employees, agents, consultants, or subcontractors 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 7.18.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 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, 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.

7.19 *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,

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methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.

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, 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, 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 7.16.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. 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

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cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
2. an itemization of the specific matters to be covered by such authority and responsibility; and
3. the extent of such authority and responsibilities.

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

8.03 *Legal Relationships*

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. 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.

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B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all 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 damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

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9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *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.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

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ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *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.

10.02 *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 10.08. 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.

10.03 *Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. 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.

10.04 *Rejecting Defective Work*

A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.

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B. 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, are set forth in Paragraph 7.19.

C. Engineer's authority as to Change Orders is set forth in Article 11.

D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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 15.06.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 10.08 shall also apply to the Resident Project Representative, if any.

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10.09 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

1. *Change Orders*:

a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.

b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. *Work Change Directives*: A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

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11.02 *Owner-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. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.

B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. *Contractor's Fee*: When applicable, 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:

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a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 13.01.B.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 Paragraphs 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

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 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.

B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures*: Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the

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proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.

2. *Engineer's Action*: Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision*: Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

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

1. 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;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and

4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

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11.08 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety 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), 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.

ARTICLE 12 – CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*:

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

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3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

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 on the Work. 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, and vacation and holiday pay applicable

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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 13.01.

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, as 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

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with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

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

C. *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, expediters, 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 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here 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 Paragraph 13.01.B.

D. *Contractor's Fee*: When the Work as a whole 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, Change Proposal, Claim, set-off, or other 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 11.04.C.

E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, 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.

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13.02 *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*: Contractor agrees that:

1. 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

2. 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*: 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.

13.03 *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. Payments to Contractor for Unit Price Work will be based on actual quantities.

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. 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 the following paragraph.

~~E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price 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;~~

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

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~~3. Contractor believes that it 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 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

~~B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.~~

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, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

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E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the

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Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. 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, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *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, then 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.

14.07 *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, 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, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

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B. In exercising the rights and remedies under this Paragraph 14.07, 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, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. 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 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 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 during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *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, a warehouse bond, 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.

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

C. *Review of Applications*:

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and 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; or

   b. 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

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d. to make any examination to ascertain how or for what purposes Contractor has used the money 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 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

a. the Work is defective, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*:

1. Thirty days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*:

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

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e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. the Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. the Contract Price has been reduced by Change Orders;

i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;

j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. 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;

l. there are other items entitling Owner to a set off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

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

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

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

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. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.

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2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work 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 15.03 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 6.05 regarding builder's risk or other property insurance.

15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *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, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

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

a. all documentation called for in the Contract Documents;

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

c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all disputes that Contractor believes are unsettled; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material,

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and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

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 have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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 15.07. 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. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

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15.08 *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 Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such other adjacent areas;
2. correct such defective Work;
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 to 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. 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 repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

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, 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 are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such

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suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

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

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.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 the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

F. 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, or any rights or remedies of Owner against Contractor or any surety

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under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *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; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

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

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) 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 16.03.

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 are not intended to preclude Contractor from submitting a Change Proposal 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.

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ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this Article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this Article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
2. agree with the other party to submit the dispute to another dispute resolution process; or
3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *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, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

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18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

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SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that 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 Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.02 Copies of Documents

SC-2.02 Add the following new paragraphs following Paragraph 2.02.C

D. The Engineer can provide electronic drawing files to assist the Contractor with layout and construction staking of the improvements. The Engineer will require the Contractor sign an electronic release prior to providing the files to the Contractor. The wording of the release shall be as follows:

"These electronic files are provided to you for your convenience. Because electronic files can deteriorate or be damaged or be modified inadvertently or information from the electronic documents may be presented to you on your system differently than the original because of your software or system setup, these files may not be accurate. Any conclusion or information obtained or derived from such electronic files will be at your sole risk.

Information contained in the electronic documents is for information and reference in connection with this project only. The information is not intended or represented to be suitable for reuse on extensions of the original project or on any other project.

You should perform an acceptance test of the electronic documents immediately and inform us of any problems with the electronic documents. Jones & Henry will not be responsible for providing additional copies of these electronic files to you after 60 days from the date the documents are provided to you."

E. Files will be provided in the Engineer's CAD software format. The Contractor's surveyor will be responsible for making any required conversions necessary to permit the surveyor to use the files for layout or staking.

F. The Contractor's surveyor should check horizontal and vertical control points to confirm there has been no shift in the electronic drawing file during the staking operation.

SC2.06 Electronic Submittals

SC-2.06 Add the following new paragraphs immediately after Paragraph 2.06 C.

D. Electronic files are provided to you for your convenience. Because electronic files can deteriorate or be damaged or be modified inadvertently or information from the electronic documents may be presented to you on your system differently than the original because of your software or system setup, these files may not be accurate. Any conclusion or information obtained or derived from such electronic files will be at your sole risk.

E. Information contained in the electronic documents is for information and reference in connection with this project only. The information is not intended or represented to be suitable for reuse on extensions of the original project or on any other project.

F. You should perform an acceptance test of the electronic documents immediately and inform us of any problems with the electronic documents. Jones & Henry will not be responsible for providing additional copies of these electronic files to you after 60 days from the date the documents are provided to you.

ARTICLE 3 – DOCUMENTS; INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

SC-3.01.C Delete Paragraph 3.01.C in its entirety and insert the following new paragraph in its place:

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version, as printed by Engineer, shall govern.

ARTICLE 4 COMMENCEMENT AND PROGRESS OF THE WORK

SC4.01 *Commencement of Contract Times; Notice to Proceed*

SC 4.01 Delete Paragraph 4.01.A and substitute the following in its place:

A. The Contract Times will commence to run on the date listed on the Notice to Proceed

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Subsurface and Physical Conditions

SC 5.03 Add Paragraph 5.03.A.4 immediately after Paragraph 5.03.A.3.

4. Unless specifically identified in these Supplemental Conditions, no reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.

SC-5.03 Subsurface and Physical Conditions

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.B:

C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:

1. "Soil Exploration; Proposed Hardin Pike Pump Station, Hardin Pike at South Blackhoof Street, Wapakoneta, Auglaize County, Ohio," Bowser Morner, BMI Report No. 189369-0519-7598, May 2, 2019. These are provided for download at https://bit.ly/WAPAKHP . Bidders are reminded that the link is case sensitive and must be entered as written.

D. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:

1. Record Plan Drawings dated November 23, 2019, Hardin Pike Pump Station Renovation, prepared by Jones & Henry Engineers, Ltd., consisting of 11 sheets.

2. Drawings dated October 23, 1995, Alternate Hardin Pike Pump Station, prepared by Kohli & Kaliher Associates, Inc., consisting of 5 sheets numbered 1 to 5.

E. Contractor may request copies of reports and drawings identified in SC 5.03.C and SC 5.03.D that were not included with the Bidding Documents from Engineer.

SC-5.06 Hazardous Environmental Conditions

SC 5.06 Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following new paragraphs in their place:

A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

B. Not Used.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.01 Performance, Payment, and Other Bonds

SC 6.01 Add the following new paragraph immediately after Paragraph 6.01.F:

G. The Contractor shall furnish a Performance Bond and a Maintenance and Guarantee Bond, each in the amount of at least 100% of the Contract Price as security for the faithful performance and payment of all Contractor's obligations.

H. The Contractor shall be required to obtain bonding for work in the ODOT Right-of-Way. The bonding requirements are included in Exhibit 4 – ODOT Bonding Requirements.

1. The instructions for the bonding are included in Exhibit 4.

2. The amount of the bond was set by an Engineer's Opinion of Construction Costs for the work to be constructed in the ODOT Right-of-Way.

3. At the completion of the work a 3-year maintenance bond in the amount of one-half of the performance bond will be required to be submitted to ODOT District 7- Charles Craun, Permit Technician III, Chuck.Craun@dot.ohio.gov.

4. Any questions regarding the bond may be directed to Mr. Craun at the email address listed or at 937-497-6947.

SC-6.03 Contractor's Insurance

SC 6.03 Delete Paragraph 6.03.I of the General Conditions and substitute the following in its place:

I. General provisions: The policies of insurance required by these Paragraphs 6.03, 6.04 and 6.05 shall:

SC 6.03 Delete Paragraph 6.03.I.3 of the General Conditions and substitute the following in its place:

3. 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 Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J

K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	**Statutory**
Federal, if applicable (e.g., Longshoreman's):	Statutory
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	$ 1,000,000
Bodily injury by disease, aggregate	$ 1,000,000
Employer's Liability:	
Bodily injury, each accident	$ 1,000,000
Bodily injury by disease, each employee	$ 1,000,000
Bodily injury/disease aggregate	$ 1,000,000
For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	Statutory

Foreign voluntary worker compensation Statutory

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	$ 1,000,000
Products - Completed Operations Aggregate	$ 1,000,000
Personal and Advertising Injury	$ 1,000,000
Each Occurrence (Bodily Injury and Property Damage)	$ 1,000,000

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:	
Each person	$ 1,000,000
Each accident	$ 1,000,000
Property Damage:	
Each accident	$ 1,000,000
[or]	
Combined Single Limit of	$ 1,000,000

4. Excess or Umbrella Liability:

Per Occurrence	$ 2,000,000
General Aggregate	$ 2,000,000

5. Contractor's Pollution Liability:

Each Occurrence	$ 1,000,000
General Aggregate	$ 1,000,000

☐ If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: NONE

SC-6.04 Owner's Liability Insurance

SC-6.04 Delete Paragraph 6.04.A and B of the General Conditions and substitute the following in its place:

A. The Contractor shall purchase and maintain during the entire term of this Contract one separate policy providing Owner's and Contractor's Protective Liability coverages. The named insured on this policy shall be:

1. The Owner; and
2. The Engineer - Jones & Henry Engineers, Ltd.; and
3. Others if specifically required by special provision in the Contract Documents.

B. The policy shall be provided on a form commonly referred to in the insurance industry as an "occurrence" type of policy form. (Claims made policy forms are not acceptable.)

C. This insurance policy shall be a separate policy in addition to the coverage required in 6.03. No other insurance policy may substitute for or contribute to the coverage or limits afforded by this insurance policy, except a separate excess Owner's and Contractor's Protective Policy.

D. This policy shall cover the total project and include explosion, collapse, and underground coverages for the entire Work provided by the Contractor and Subcontractors.

E. The policy shall stipulate that the "designated Contractor" includes the Contractor and all Sub-contractors engaged in the Work.

F. The original policy shall be submitted to and filed with the Owner or its designated representative.

SC-6.05 Property Insurance

SC-6.05. Add the following new paragraphs immediately before 6.05.A. and continue on the numbering sequentially.

A. Contractor shall provide either property insurance in the form of Builder's Risk or installation floater as appropriate for the work as required herein.

B. Contractor shall provide and maintain installation floater insurance for property under the care, custody, or control of Contractor. The installation floater insurance shall be a broad form or "all risk" policy providing coverage for all materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work. Coverage under the Contractor's installation floater will include:

1. any loss to property while in transit,
2. any loss at the Site, and
3. any loss while in storage, both on-site and off-site.

Coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable. The Contractor will be solely responsible for any deductible carried under this coverage and claims on materials, supplies, machinery, fixture, and equipment that will be incorporated into the Work while in transit or in storage. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

SC-6.05.A.1 Add the following new subparagraph after subparagraph 6.05.A.1:

a. In addition to Owner, Contractor, and all Subcontractors, include as insureds the following:
1) Engineer

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SC-7.09 Taxes

SC 7.09 Add a new paragraph immediately after Paragraph 7.09.A:

B. Owner is exempt from payment of sales and compensating use taxes of the State of Ohio and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

SC-7.12 Safety and Protection

SC-7.12 Insert the following after the second sentence of Paragraph 7.12.C:

The following Owner safety programs are applicable to the Work: N/A.

ARTICLE 9 – OWNER'S RESPONSIBLITIES

SC-9.11 Evidence of Financial Arrangements

SC-9.11 Add the following new paragraph immediately after Paragraph 9.11.A:

B. The Owner has funded this project with the assistance of Funding Agencies listed in the Exhibits to the Supplementary Conditions and are made a part of the Contract Documents. Contractor shall comply with the requirements of the funding agencies, when there is a conflict between the funding agency requirements and any part of the Contract Documents the funding agency requirements shall take precedence, without voiding any requirement of the Contract Documents.

SC-9.13 Owner's Site Representative

SC-9.13 Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:

SC-9.13 The Owner may furnish an Owner's Site Representative to represent the Owner at the site to observe progress and quality of the work. The Owner's Site Representative is not the Engineer's Consultant, agent or employee, but will possess the same authority over the work as defined for the RPR in Section SC10.03.B.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

SC-10.03 Project Representative

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

B. The Resident Project Representative (RPR), if provided, will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.

1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.

3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.

4. Liaison:

   a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

   b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.

   c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.

5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

6. Shop Drawings and Samples:

a. Record date of receipt of Samples and Contractor-approved Shop Drawings.

b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.

c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.

7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.

8. Review of Work and Rejection of Defective Work:

a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Inspections, Tests, and System Start-ups:

a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.

b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.

b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

c. Maintain records for use in preparing Project documentation.

11. Reports:

a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.

c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.

b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.

c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.

5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC-13.01 Cost of the Work

SC 13.01.B.5.c Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

c. Construction Equipment and Machinery:

1) Rentals of all construction equipment and machinery, and the parts thereof, 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.

2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the Rate Book appropriate for the Project. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than $1,000 will be considered small tools.

SC-13.03 Unit Price Work

SC 13.03.E Delete Paragraph 13.03.E in its entirety and insert the following in its place:

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

1. if the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent 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 Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

SC-14.02 Tests, Inspections and Approvals

SC 14.02.B Delete Paragraph 14.02.B in its entirety and insert the following in its place:

B. Contactor shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Contractor, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.01 Progress Payments

SC 15.01.A Add the following new subparagraph to Paragraph 15.01.A:

1. Mobilization for Contractor and any tier of subcontractor(s) shall be considered collectively and shall not exceed 5 percent of the Contract Price. Mobilization shall be those costs associated with the initiation of the project and site work, including but not limited to, transporting of personnel, equipment, materials, supplies, incidental items; establishment of the field offices, temporary facilities necessary for the project, bonds and insurances, submittal requirements, permits, field supervision, final cleanup and demobilization. Mobilization does not include such items as, contract negotiations and bid preparation.

a. Where the work is covered by unit price and no item has been included for mobilization as defined in Section 01010., then this work is considered incidental to the work and will not be paid separately.

b. Where the work is covered by unit prices, and item(s) for mobilization, as described in Section 01010 have been included, the maximum allowable amount shall be ten percent of the aggregate of all items excluding mobilization. Where mobilization is included as multiple items, then the aggregate amount of all mobilization items shall not exceed the allowable 10 percent.

2. Costs for submittal requirements, field office and supervision, where identified separately in the schedule of values shall be considered for payment monthly. When the cost is a lump sum as submitted in accordance with 2.6, the monthly cost shall be established by dividing the lump sum by the number of monthly estimates based on the original contract time. No adjustments shall be made for any contract time extensions.

3. Mobilization shall be included in the progress payments, in accordance with the schedule of values and unit prices. When the work, excluding mobilization and inventory, has progressed to an amount equal to five percent or more of the contract price, then an amount of not more than 50 percent of the mobilization cost will be considered for inclusion in the progress payment. Prior to the established five percent, Owner may consider payment on invoices for bonds and insurances and permits; this amount shall be subtracted for the total amount from mobilization.

   Up to an additional 40 percent of the mobilization cost will be considered for inclusion in the progress payments once the work, excluding mobilization and inventory, has progressed to an amount equal to 50 percent of the Contract Price. The remaining mobilization payment will be paid as part of the final payment.

15.03 Substantial Completion

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

END OF SECTION

EXHIBIT 1

WAGE RATES

Prevailing Wage Rate
Skilled Crafts

Name of Union: Asbestos Local 50 Zone 1

Change # : LCN01-2021fbLoc50

Craft : Asbestos Worker Effective Date : 03/10/2021 Last Posted : 03/10/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Asbestos Insulation Mechanic	$33.32		$7.70	$7.60	$0.44	$0.00	$2.50	$0.15	$0.00	$0.00	$51.71	$68.37
Firestop Technician	$33.32		$7.70	$7.60	$0.44	$0.00	$2.50	$0.15	$0.00	$0.00	$51.71	$68.37
Apprentice	**Percent**											
1st year	53.12	$17.70	$7.46	$0.00	$0.40	$0.00	$0.00	$0.15	$0.00	$0.00	$25.71	$34.56
2nd year	63.58	$21.18	$7.46	$0.95	$0.40	$0.00	$0.00	$0.15	$0.00	$0.00	$30.14	$40.74
3rd year	73.12	$24.36	$7.46	$1.90	$0.40	$0.00	$0.30	$0.15	$0.00	$0.00	$34.57	$46.76
4th year	83.55	$27.84	$7.46	$1.90	$0.40	$0.00	$0.30	$0.15	$0.00	$0.00	$38.05	$51.97

Special Calculation Note : Other is Industry Fund.

Ratio :

1 Journeymen to 1 Apprentice
4 Journeymen to 1 Apprentice there after

Jurisdiction (* denotes special jurisdictional note) :
ATHENS, AUGLAIZE, BUTLER*, CLINTON, CRAWFORD, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GUERNSEY, HARDIN, HOCKING, KNOX, LICKING, LOGAN, MADISON, MARION, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, ROSS, SHELBY, UNION, VINTON, WARREN*

Special Jurisdictional Note : Township of Butler County-Townships of Lemon and Madison. Warren County-Township of Cleer Creek, Franklin, Massie, Turtle Creek and Wayne

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Asbestos Local 207 OH

Change # : LCN01-2018fbLoc207OH

Craft : Asbestos Worker Effective Date : 08/23/2018 Last Posted : 08/23/2018

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Asbestos Abatement	$25.50	$7.25	$6.45	$0.65	$0.00	$0.00	$0.07	$0.00	$0.00	$39.92	$52.67
Trainee	$16.50	$7.25	$1.50	$0.65	$0.00	$0.00	$0.07	$0.00	$0.00	$25.97	$34.22

Special Calculation Note :

Ratio :

3 Journeymen to 1 Trainee

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA*, ATHENS, AUGLAIZE, BROWN, BUTLER*, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARDIN, HARRISON, HIGHLAND, HOCKING, HOLMES, HURON, KNOX, LAKE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MIAMI, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PORTAGE, PREBLE, RICHLAND, ROSS, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN*, WAYNE

Special Jurisdictional Note : Butler County:(townships of Fairfield,Hanover,Liberty,Milford,Morgan,Oxford,Ripley,Ross,StClair,Union & Wayne.) (Lemon & Madison) Warren County: (townships of: Deerfield, Hamilton, Harlan, Salem, Union & Washington). (Clear Creek, Franklin, Mossie, Turtle Creek & Wayney). Ashtabula County: (post offices & townships of Ashtabula, Austinburg, Geneva, Harperfield, Jefferson, Plymouth & Saybrook) (townships of Andover, Cherry Valley, Colbrook, Canneaut, Denmark, Dorset, East Orwell, Hartsgrove, Kingville, Lenox, Monroe,Morgan,New Lyme,North Kingsville, Orwell, Pierpoint, Richmond Rock Creek, Rome, Shefield, Trumbull, Wayne, Williamsfield & Windsor) Erie County:(post offices & townships of Berlin, Berlin Heights,Birmingham,Florence ,Huron, Milan, Shinrock & Vermilion)

Details :

Asbestos & lead paint abatement including,but not limited to the removal or encapsulation of asbestos & lead paint,all work in conjunction with the preparation of the removal of same & all work in conjunction with the

clean up after said removal.The removal of all insulation materials, whether they contain asbestos or not, from mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) is recognized as being the exclusive work of the Asbestos Abatement Workers.

On all mechanical systems (pipes, boilers, ducts, flues, breaching, etc.) that are going to be demolished, the removal of all insulating materials whether they contain asbestos or not shall be the exclusive work of the Laborers.
An Abatement Journeyman is anyone who has more than 300 hours in the Asbestos Abatement field.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Boilermaker Local 85

Change # : LCN01-2012kpLoc85

Craft : Boilermaker Effective Date : 03/28/2012 Last Posted : 03/28/2012

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Boilermaker	$31.01		$6.97	$10.77	$0.35	$0.00	$3.00	$2.09	$0.00	$0.00	$54.19	$69.69
Apprentice	**Percent**											
1st 6 months	70.00	$21.71	$6.97	$0.25	$0.35	$0.00	$0.25	$2.09	$0.00	$0.00	$31.62	$42.47
2nd 6 months	72.50	$22.48	$6.97	$0.25	$0.35	$0.00	$0.25	$2.09	$0.00	$0.00	$32.39	$43.63
3rd 6 months	75.00	$23.26	$6.97	$0.25	$0.35	$0.00	$0.25	$2.09	$0.00	$0.00	$33.17	$44.80
4th 6 months	77.50	$24.03	$6.97	$10.77	$0.35	$0.00	$3.00	$2.09	$0.00	$0.00	$47.21	$59.23
5th 6 months	80.00	$24.81	$6.97	$10.77	$0.35	$0.00	$3.00	$2.09	$0.00	$0.00	$47.99	$60.39
6th 6 months	85.00	$26.36	$6.97	$10.77	$0.35	$0.00	$3.00	$2.09	$0.00	$0.00	$49.54	$62.72
7th 6 months	90.00	$27.91	$6.97	$10.77	$0.35	$0.00	$3.00	$2.09	$0.00	$0.00	$51.09	$65.04
8th 6 months	95.00	$29.46	$6.97	$10.77	$0.35	$0.00	$3.00	$2.09	$0.00	$0.00	$52.64	$67.37

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

Ratio :

5 Journeymen to 1 Apprentice
10 Journeymen to 2 Apprentice
15 Journeymen to 3 Apprentice

Helpers will be referred in the event that apprentices are NOT available.

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, ASHLAND, AUGLAIZE, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FULTON, HANCOCK, HARDIN, HENRY, HURON, KNOX, LOGAN, LUCAS, MARION, MERCER, MORROW, OTTAWA, PAULDING, PUTNAM, RICHLAND, SANDUSKY, SENECA, SHELBY, UNION, VAN WERT, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Bricklayer Local 3 Zone 3 Tile Setters

Change # : LCN01-2020bLoc35

Craft : Bricklayer Effective Date : 07/02/2020 Last Posted : 07/02/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Bricklayer Tile Setter/Terrazzo Worker	$28.82		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$44.72	$59.13
Tile Finisher Assistant												
1st Year	$14.45		$7.95	$1.70	$0.54	$0.00	$0.00	$0.00	$0.00	$0.00	$24.64	$31.86
2nd Year	$19.17		$7.95	$1.70	$0.54	$0.00	$0.00	$0.00	$0.00	$0.00	$29.36	$38.95
3rd Year	$23.89		$7.95	$1.70	$0.54	$0.00	$0.00	$0.00	$0.00	$0.00	$34.08	$46.03
Apprentice	**Percent**											
1st 6 months	60.00	$17.29	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$33.19	$41.84
2nd 6 months	65.00	$18.73	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$34.63	$44.00
3rd 6 months	70.00	$20.17	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$36.07	$46.16
4th 6 months	75.00	$21.62	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$37.52	$48.32
5th 6 months	80.00	$23.06	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$38.96	$50.48
6th 6 months	85.00	$24.50	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$40.40	$52.65
7th 6 months	90.00	$25.94	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$41.84	$54.81
8th 6 months	95.00	$27.38	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$43.28	$56.97

Special Calculation Note : Light Commercial Apprentices are 50% of Journeyman's rate plus full fringes

Ratio :

3 Journeymen to 1 Apprentice
8 Journeymen to 2 Apprentice
13 Journeymen to 3 Apprentice
18 Journeymen to 4 Apprentice

Jurisdiction (* denotes special jurisdictional note) :
ALLEN, AUGLAIZE, MERCER, VAN WERT

Special Jurisdictional Note :

Details :
BAT registered Apprentices must be employed prior to hiring Mason Finisher (s).

Prevailing Wage Rate
Skilled Crafts

Name of Union: Bricklayer Local 3 Zone 3

Change # : LCN01-2020fbLoc3

Craft : Bricklayer Effective Date : 07/01/2020 Last Posted : 06/25/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Bricklayer	$28.82		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$44.72	$59.13
Stone Masons Marble Masons	$28.82		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$44.72	$59.13
Pointer Caulker Cleaner	$28.82		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$44.72	$59.13
Refractory Worker	$28.82		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$44.72	$59.13
Apprentice Indentured AFTER 02/01/2019												
1st 6 Months	$17.29		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$33.19	$41.84
2nd 6 Months	$18.73		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$34.63	$44.00
3rd 6 Months	$20.17		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$36.07	$46.16
4th 6 Months	$21.62		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$37.52	$48.33
5th 6 Months	$23.06		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$38.96	$50.49
6th 6 Months	$24.50		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$40.40	$52.65
7th 6 Months	$25.94		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$41.84	$54.81
8th 6 Months	$27.38		$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$43.28	$56.97
Apprentice Indentured BEFORE 02/01/2019	**Percent**											
1st 6	50.00	$14.41	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$30.31	$37.52

months												
2nd 6 months	55.00	$15.85	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$31.75	$39.68
3rd 6 months	60.00	$17.29	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$33.19	$41.84
4th 6 months	70.00	$20.17	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$36.07	$46.16
5th 6 months	75.00	$21.62	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$37.52	$48.32
6th 6 months	80.00	$23.06	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$38.96	$50.48
7th 6 months	90.00	$25.94	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$41.84	$54.81
8th 6 months	95.00	$27.38	$7.95	$6.66	$0.79	$0.00	$0.50	$0.00	$0.00	$0.00	$43.28	$56.97
Mason Trainees: 1-90 days	45.00	$12.97	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$12.97	$19.45
91-365 days	45.00	$12.97	$7.95	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$20.92	$27.40
2nd year	50.00	$14.41	$7.95	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$22.36	$29.57

Special Calculation Note : Light Commercial Apprentices are 50% of Journeyman's rate plus full fringes

Ratio :

1 Journeymen 1 Apprentice 1 Mason Trainee
2-6 Journeymen 2 Apprentice 1 Mason Trainee
7-12 Journeymen 3 Apprentice 2 Mason Trainee
13-18 Journeymen 4 Apprentice 2 Mason Trainee

Mason Trainee Ratio:

1 Apprentice permits 1 Mason Trainee

2 Apprentices permits 1 Mason Trainee

3 Apprentices permits 2 Mason Trainees

4 Apprentices permits 2 Mason Trainees

Jurisdiction (* denotes special jurisdictional note) :
ALLEN, AUGLAIZE, MERCER, VAN WERT

Special Jurisdictional Note :

Details :
BAT registered Apprentices must be employed prior to hiring Mason Trainee(s).

Prevailing Wage Rate
Skilled Crafts

Name of Union: Bricklayer Local 22 Tile Finisher

Change # : LCN01-2020fbLoc22

Craft : Bricklayer Effective Date : 07/01/2020 Last Posted : 06/25/2020

	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	$24.47		$3.00	$5.72	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$33.63	$45.86
Base Machine	$24.97		$3.00	$5.72	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$34.13	$46.61
Apprentice	**Percent**											
1st 6 months 0-600 hrs	60.00	$14.68	$3.00	$0.00	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$18.12	$25.46
2nd 6 months 601-1200 hrs	65.00	$15.91	$3.00	$0.00	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$19.35	$27.30
3rd 6 months 1201-1800 hrs	70.00	$17.13	$3.00	$5.72	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$26.29	$34.85
4th 6 months 1801-2400	75.00	$18.35	$3.00	$5.72	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$27.51	$36.69
5th 6 months 2401-3000 hrs	80.00	$19.58	$3.00	$5.72	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$28.74	$38.52
6th 6 months 3001-3600 hrs	90.00	$22.02	$3.00	$5.72	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$31.18	$42.19
TMT Helper- May enter Apprentice Program after 90 day completionr												
First 90	45.00	$11.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$11.01	$16.52

Days												

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.
Medical Savings Account: The Medical Savings Account can only be deducted providing employee shows proof voluntary enrollment in the program. Minimum contribution of $1.00 per hourworked with no maximum.

Ratio :

1 Journeyman 1 Apprentice
5 Journeyman 1 Apprentice
10 Journeyman 2 Apprentice
15Journeyman 3 Apprentice
20 Journeyman 4 Apprentice
25 Journeyman 5 Apprentice
8 Employees 1 Helper

Jurisdiction (* denotes special jurisdictional note) :

AUGLAIZE, CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, HARDIN, HIGHLAND, LOGAN, MERCER, MIAMI, MONTGOMERY, PREBLE*, SHELBY

Special Jurisdictional Note : In Preble County the following townships are included: (Jackson, Monroe, Harrison, Twin and Washington)

Details :

Tile Layer Finishers shall do mixing of mortars & adhesives,cleaning & grouting of tile,unloading of all trucks,unpacking & handling of all tile & materials such as sand,lime,cement,tile,& all types of tile panels, prefabricated on job site. Marble Setter Finishers shall do all cleaning,waxing & polishing,grouting and pointing.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Floorlayer Zone II

Change # : LCN01-2020fbZoneII

Craft : Carpenter Effective Date : 06/11/2020 Last Posted : 06/11/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Floorlayer	$25.22		$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$47.46	$60.07
Apprentice	**Percent**											
1st 3 Month Period	60.00	$15.13	$7.65	$0.00	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$23.22	$30.79
2nd 3 Month Period	60.00	$15.13	$7.65	$0.00	$0.44	$0.00	$0.00	$0.00	$0.00	$0.00	$23.22	$30.79
2rd 6 MonthPeriod	60.00	$15.13	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$37.37	$44.94
3rd 6 Month Period	65.00	$16.39	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$38.63	$46.83
4th 6 Month Period	75.00	$18.91	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$41.15	$50.61
5th 6 Month Period	80.00	$20.18	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$42.42	$52.50
6th 6 Month Period	85.00	$21.44	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$43.68	$54.40
7th 6 Month Period	90.00	$22.70	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$44.94	$56.29
8th 6 Month Period	95.00	$23.96	$7.65	$10.28	$0.44	$0.00	$3.87	$0.00	$0.00	$0.00	$46.20	$58.18

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

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CRAWFORD, HARDIN, HENRY, OTTAWA, PAULDING, PUTNAM, SANDUSKY, SENECA, VAN WERT, WILLIAMS, WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Millwright & Pile Driver Zone II

Change # : LCN01-2020fbLocZone II

Craft : Carpenter Effective Date : 06/11/2020 Last Posted : 06/11/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter Millwright Pile Driver	$29.89		$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$54.83	$69.77
Apprentice	**Percent**											
1st 6 months	60.00	$17.93	$7.65	$0.00	$0.55	$0.00	$0.00	$0.00	$0.00	$0.00	$26.13	$35.10
2nd 6 months	60.00	$17.93	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$42.87	$51.84
3rd 6 months	70.00	$20.92	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$45.86	$56.32
4th 6 months	75.00	$22.42	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$47.36	$58.57
5th 6 months	80.00	$23.91	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$48.85	$60.81
6th 6 months	85.00	$25.41	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$50.35	$63.05
7th 6 months	90.00	$26.90	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$51.84	$65.29
8th 6 months	95.00	$28.40	$7.65	$11.39	$0.55	$0.00	$5.35	$0.00	$0.00	$0.00	$53.34	$67.53

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) :

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM, VAN WERT, WYANDOT

Special Jurisdictional Note :

Details :

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 NW District Overhead Door

Change # : CN02-2007LocNW248

Craft : Carpenter Effective Date : 09/06/2007 Last Posted : 09/06/2007

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Carpenter Mechanic	$20.00	$0.00	$1.00	$0.20	$0.00	$0.00	$0.00			$21.20	$31.20
Intermediate Mechanic Level 2	$15.85	$0.00	$0.00	$0.20	$0.00	$0.00	$0.00			$16.05	$23.97
Mechanic Level 1	$12.00	$0.00	$0.00	$0.20	$0.00	$0.00	$0.00			$12.20	$18.20

Special Calculation Note : Fully paid reasonable & customary comprehensive medical/surgical insurance shall be provided for employee,spouse and dependent children by employer.

Ratio :

1 Journeymen Mechanic to 1 Mechanic Level 1 or Intermediate Mechanic Level 2

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CRAWFORD, DEFIANCE, FULTON, HANCOCK, HARDIN, HENRY, LUCAS, MERCER, OTTAWA, PAULDING, PUTNAM, SANDUSKY, SENECA, VAN WERT, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

All work related to the repair, transportation, installation and servicing of doors and gates of any type: and repair, transportation and servicing of any and all items related to doors and gates: and the preparation of any openings, passageways and/or access where a door and/or gate will be installed.
Including but not limited to: Upward acting doors, horizontally sliding doors, rapid roll fabric doors, overhead chain gates, sliding grills, air doors, fire doors and any other doors/or gates which are used to gain access to or prevent access to any area, enclosed or otherwise and Dock Levers. Also any devices and/or items used to operate, open or close doors.

Journeyman Mechanic - an individual that has adequately demonstrated his knowledge and proficiency at all parts of the trade, who has 3 years documented experience at that trade, or who has been certified by a bona fide apprenticeship program, registered with the US Dept of Labor/Bureau of Apprenticeship.

Intermediate Mechanic Level 2- an employee who has performed work as a junior mechanic at least 3 years.

Mechanic Level 1- the employer may hire persons who are not journeypersons. These employees will start at

60% of the journeypersons wage rate and the employer is not required to pay fringe benefits, until the Mechanic becomes a Journeyman Mechanic.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Carpenter Zone III

Change # : LCN01-2020fbZoneIII

Craft : Carpenter Effective Date : 06/11/2020 Last Posted : 06/11/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Carpenter	$25.78		$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$48.06	$60.95
Apprentice	**Percent**											
1st 6 Months	60.00	$15.47	$7.65	$0.00	$0.50	$0.00	$0.00	$0.00	$0.00	$0.00	$23.62	$31.35
2nd 6 Months	60.00	$15.47	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$37.75	$45.48
3rd 6 Months	65.00	$16.76	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$39.04	$47.42
4th 6 Months	75.00	$19.33	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$41.62	$51.28
5th 6 Months	80.00	$20.62	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$42.90	$53.22
6th 6 Months	85.00	$21.91	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$44.19	$55.15
7th 6 Months	90.00	$23.20	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$45.48	$57.08
8th 6 Months	95.00	$24.49	$7.65	$10.28	$0.50	$0.00	$3.85	$0.00	$0.00	$0.00	$46.77	$59.02

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

Ratio :

2 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, HARDIN, MERCER, PUTNAM, VAN WERT

Special Jurisdictional Note :

Details :

Special Work Rates:
40-100 foot free fall - $ .50 per hour above scale
Over 100 foot free fall - $1.00 per hour above scale

Prevailing Wage Rate
Skilled Crafts

Name of Union: Cement Mason Bricklayer Local 97 HevHwy A

Change # : LCN01-2020fbHvyHwy

Craft : Bricklayer Effective Date : 06/01/2020 Last Posted : 05/21/2020

	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	$29.96		$9.50	$6.77	$0.47	$0.00	$0.00	$0.00	$0.00	$0.00	$46.70	$61.68
Apprentice	**Percent**											
1st year	50.00	$14.98	$9.50	$6.77	$0.47	$0.00	$0.00	$0.00	$0.00	$0.00	$31.72	$39.21
2nd year	70.00	$20.97	$9.50	$6.77	$0.47	$0.00	$0.00	$0.00	$0.00	$0.00	$37.71	$48.20
3rd year	90.00	$26.96	$9.50	$6.77	$0.47	$0.00	$0.00	$0.00	$0.00	$0.00	$43.70	$57.19

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

3 Journeymen to 1 Apprentice
6 Journeymen to 2 Apprentice
9 Journeymen to 3 Apprentice
12 Journeymen to 4 Apprentice
15 Journeymen to 5 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

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

Special Jurisdictional Note :

Details :

(A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site Heavy Construction, Airport Construction Or Railroad Construction Work.

(B) Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control,Sewer Plant, Waste Plant, & Water Treatment Facilities, Construction.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Cement Mason Bricklayer Local 97 HevHwy B

Change # : LCN01-2020fbHvyHwy

Craft : Bricklayer Effective Date : 06/01/2020 Last Posted : 05/21/2020

	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	$30.95		$9.50	$6.77	$0.48	$0.00	$0.00	$0.00	$0.00	$0.00	$47.70	$63.17
Apprentice	**Percent**											
1st year	50.00	$15.48	$9.50	$6.77	$0.48	$0.00	$0.00	$0.00	$0.00	$0.00	$32.23	$39.96
2nd year	70.00	$21.66	$9.50	$6.77	$0.48	$0.00	$0.00	$0.00	$0.00	$0.00	$38.42	$49.25
3rd year	90.00	$27.85	$9.50	$6.77	$0.48	$0.00	$0.00	$0.00	$0.00	$0.00	$44.60	$58.53

Special Calculation Note : NOT FOR BUILDING CONSTRUCTION.

Ratio :

3 Journeymen to 1 Apprentice
6 Journeymen to 2 Apprentice
9 Journeymen to 2 Apprentice
12 Journeymen to 4 Apprentice
15 Journeymen to 5 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT,

TRUMBULL, TUSCARAWAS, UNION, VAN WERT,
VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

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

Prevailing Wage Rate
Skilled Crafts

Name of Union: Cement Mason Local 886 (Lima)

Change # : LCN01-2019fbLoc886Lima

Craft : Cement Effective Date : 07/03/2019 Last Posted : 07/03/2019

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	$27.85		$8.10	$7.40	$0.30	$0.00	$4.05	$0.00	$0.00	$0.00	$47.70	$61.63
Apprentice	**Percent**											
1st 6 months	70.00	$19.50	$8.10	$7.40	$0.30	$0.00	$4.05	$0.00	$0.00	$0.00	$39.34	$49.09
2nd 6 months	80.00	$22.28	$8.10	$7.40	$0.30	$0.00	$4.05	$0.00	$0.00	$0.00	$42.13	$53.27
3rd 6 months	90.00	$25.07	$8.10	$7.40	$0.30	$0.00	$4.05	$0.00	$0.00	$0.00	$44.91	$57.45

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

Ratio :

5 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, VAN WERT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Cement Mason Statewide HevHwy Exhibit A District III

Change # : LCN01-2019fbCementHevHwy

Craft : Cement Mason Effective Date : 05/01/2020 Last Posted : 04/30/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	$29.46		$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$47.76	$62.49
Apprentice	**Percent**											
1st Year	70.00	$20.62	$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$38.92	$49.23
2nd Year	80.00	$23.57	$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$41.87	$53.65
3rd Year	90.00	$26.51	$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$44.81	$58.07

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

Ratio :

1 Journeymen to 1 Apprentice
2 to 1 thereafter

Jurisdiction (* denotes special jurisdictional note) :
ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, CARROLL, CHAMPAIGN, CLARK, CLINTON, COSHOCTON, CRAWFORD, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GREENE, GUERNSEY, HARDIN, HARRISON, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, TUSCARAWAS, UNION, VAN WERT, VINTON, WASHINGTON, WAYNE, WYANDOT

Special Jurisdictional Note : (A) Highway Construction, Sewer, Waterworks And Utility Construction, Industrial & Building Site, Heavy
Construction, Airport Construction Or Railroad Construction Work.

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Cement Mason Statewide HevHwy Exhibit B District III

Change # : LCN01-2020fbCementHevHwy

Craft : Cement Mason Effective Date : 05/01/2020 Last Posted : 04/30/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Cement Mason	$29.62		$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$47.92	$62.73
Apprentice	**Percent**											
1st Year	70.00	$20.73	$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$39.03	$49.40
2nd Year	80.00	$23.70	$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$42.00	$53.84
3rd Year	90.00	$26.66	$8.25	$7.15	$0.65	$0.00	$2.25	$0.00	$0.00	$0.00	$44.96	$58.29

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

Ratio :

1 Journeymen to 1 Apprentice
2 to 1 thereafter

Jurisdiction (* denotes special jurisdictional note) :
ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, CARROLL, CHAMPAIGN, CLARK, CLINTON, COSHOCTON, CRAWFORD, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GREENE, GUERNSEY, HARDIN, HARRISON, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, MADISON, MARION, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, TUSCARAWAS, UNION, VAN WERT, VINTON, WASHINGTON, WAYNE, WYANDOT

Special Jurisdictional Note : (B) Power Plant, Tunnels, Amusement Park, Athletic Stadium Site Work ,Pollution Control,Sewer Plant,
Waste Plant, & Water Treatment Facilities, Construction.

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 32 Lt Commercial South West

Change # : LCN01-2020fbLoc32

Craft : Electrical Effective Date : 01/22/2020 Last Posted : 01/22/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrician	$26.75		$6.30	$3.70	$0.80	$0.00	$2.50	$1.00	$0.00	$0.00	$41.05	$54.42
CE-3 12,001-14,000 Hrs	$22.45		$6.15	$0.67	$0.67	$0.00	$0.67	$0.37	$0.00	$0.00	$30.98	$42.21
CE-2 10,001-12,000	$17.64		$6.15	$0.53	$0.67	$0.00	$0.53	$0.37	$0.00	$0.00	$25.89	$34.71
CE-1 8,001-10,000 Hrs	$16.04		$6.15	$0.48	$0.67	$0.00	$0.48	$0.37	$0.00	$0.00	$24.19	$32.21
CW-4 6,001-8,000 Hrs	$14.43		$6.15	$0.43	$0.67	$0.00	$0.43	$0.37	$0.00	$0.00	$22.48	$29.70
CW-3 4,001-6,000 Hrs	$12.83		$6.15	$0.38	$0.67	$0.00	$0.38	$0.37	$0.00	$0.00	$20.78	$27.20
CW-2 2,001-4,000 Hrs	$12.03		$6.15	$0.36	$0.67	$0.00	$0.36	$0.37	$0.00	$0.00	$19.94	$25.96
CW-1 0-2,000 Hrs	$11.22		$6.15	$0.34	$0.67	$0.00	$0.34	$0.37	$0.00	$0.00	$19.09	$24.70
Apprentice	**Percent**											
1st period 0-1000 hrs	40.00	$10.70	$6.30	$0.32	$0.32	$0.00	$0.00	$1.00	$0.00	$0.00	$18.64	$23.99
2nd period 1000-2000 hrs	45.00	$12.04	$6.30	$0.36	$0.36	$0.00	$0.00	$1.00	$0.00	$0.00	$20.06	$26.08
3rd period 2000- 3500 hrs	55.00	$14.71	$6.30	$2.04	$0.44	$0.00	$1.38	$1.00	$0.00	$0.00	$25.87	$33.23
4th period 3500-5000 hrs	65.00	$17.39	$6.30	$2.41	$0.52	$0.00	$1.63	$1.00	$0.00	$0.00	$29.25	$37.94
5th period 5000-	75.00	$20.06	$6.30	$2.78	$0.60	$0.00	$1.88	$1.00	$0.00	$0.00	$32.62	$42.65

6500 hrs												
6th period 6500-8000 hrs	85.00	$22.74	$6.30	$3.15	$0.68	$0.00	$2.13	$1.00	$0.00	$0.00	$36.00	$47.37

Special Calculation Note : OTHER IS: Voluntary Employees Beneficiary Association.

Ratio :

Each Job Site shall be allowed 3 Journeymen to 2 Apprentices as illustrated below:
1 to 3 Journeymen to 2 Apprentices
4 to 6 Journeymen to 4 Apprentices
7 to 9 Journeymen to 6 Apprentices

The first person assigned to any job site shall be a Journeyman Wireman.

Construction Electrician and Construction Wireman Ratio
There shall be a minimum ratio of one inside Journeyman to every (4) employees of different classification per jobsite. An inside Journeyman Wireman is required on the project as the fifth (5th) worker or when apprentices are used.

Jurisdiction (* denotes special jurisdictional note) :
ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT, WYANDOT*

Special Jurisdictional Note : In Wyandot County the following townships are included: Crawford, Jackson, Marseilles, Mifflin, Ridgeland, Ridge and Salem.

The scope of work for the light commercial agreement shall apply to the following facilities not to exceed 200,000 square feet; office buildings, shopping centers, auto sales agencies and garages, churches, funeral homes, nursing homes, hotels, retail and wholesale facilities, small stand-alone manufacturing facilities when free standing and not part of a larger facility (not to exceed 50,000 square fee), solar projects (500 panels or less) unless otherwise covered under the agreement, lighting retrofits (when not associated with remodels involving branch re-circuiting) lighting retrofits shall be defined as the changing of lamps and ballasts in existing light fixtures and shall also include the one for one replacement of existing fixtures, warehouses, gas stations, food service centers, restaurants, entertainment facilities, hospitals, clinics, motels, residential buildings.

Details :
A Certified Welder will receive $1.50 per hour above the Journeyman rate. Welders welding on galvanized shall receive $1.50 per hour above the Journeyman rate.
All work over 35 feet but less than 60 feet shall receive $.75 per hour above the Journeyman rate.
All work 60 feet or over shall receive $1.50 per hour above the Journeyman rate.
When using a JLG-typ equipment or bucket truck is used there will be no high pay unless the work is over 60 feet.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 32 Voice Data Video

Change # : LCR02-2020fbLoc32VDV

Craft : Voice Data Video Effective Date : 11/30/2020 Last Posted : 11/09/2020

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Installer Technician A	$25.10	$6.60	$0.75	$0.48	$0.00	$4.40	$0.00	$0.00	$0.00	$37.33	$49.88
Electrical Installer Technician B	$23.85	$6.60	$0.72	$0.45	$0.00	$4.40	$0.00	$0.00	$0.00	$36.02	$47.95
JW Installer Technician	$22.59	$6.60	$0.68	$0.43	$0.00	$4.40	$0.00	$0.00	$0.00	$34.70	$46.00
NON-BISCI Installer	$16.32	$3.00	$0.49	$0.31	$0.00	$2.00	$0.00	$0.00	$0.00	$22.12	$30.28
Cable puller	$12.55	$3.00	$0.38	$0.24	$0.00	$0.25	$0.00	$0.00	$0.00	$16.42	$22.69
Indentured After 09-03-2018											
1st Period 0-1000 Hrs OJT	$13.81	$3.00	$0.41	$0.26	$0.00	$0.25	$0.00	$0.00	$0.00	$17.73	$24.64
2nd Period 1001-2000 Hrs OJT	$13.81	$3.00	$0.41	$0.26	$0.00	$0.25	$0.00	$0.00	$0.00	$17.73	$24.64
3rd Period 2001-3000 Hrs OJT	$16.32	$6.50	$0.49	$0.31	$0.00	$4.40	$0.00	$0.00	$0.00	$28.02	$36.18
4th Period 3001-4000 Hrs OJT	$16.32	$6.50	$0.49	$0.31	$0.00	$4.40	$0.00	$0.00	$0.00	$28.02	$36.18
5th Period 4001-5000 Hrs OJT	$18.80	$6.53	$0.56	$0.36	$0.00	$4.40	$0.00	$0.00	$0.00	$30.65	$40.05
6th Period 5001-6000	$18.83	$6.53	$0.56	$0.36	$0.00	$4.40	$0.00	$0.00	$0.00	$30.68	$40.10

Hrs OJT												
7th Period 6001-7000 Hrs OJT	$20.08		$6.54	$0.60	$0.38	$0.00	$4.40	$0.00	$0.00	$0.00	$32.00	$42.04
8th Period 7001 Hrs	$20.08		$6.54	$0.60	$0.38	$0.00	$4.40	$0.00	$0.00	$0.00	$32.00	$42.04
Apprentice Indentured Before 09-03-2018	**Percent**											
1s 50% 0- 800 hours OJT	50.00	$12.55	$6.60	$0.38	$0.24	$0.00	$0.25	$0.00	$0.00	$0.00	$20.02	$26.30
2nd 50% 801-1600 hours OJT	50.00	$12.55	$6.60	$0.38	$0.24	$0.00	$0.25	$0.00	$0.00	$0.00	$20.02	$26.30
3rd 60% 1601-2400 hours OJT	60.00	$15.06	$6.60	$0.45	$0.29	$0.00	$4.40	$0.00	$0.00	$0.00	$26.80	$34.33
4th-65% 2401-3200 hours OJT	65.00	$16.32	$6.60	$0.49	$0.31	$0.00	$4.40	$0.00	$0.00	$0.00	$28.11	$36.27
5th70% 3201-4000 hours OJT	70.00	$17.57	$6.60	$0.53	$0.33	$0.00	$4.40	$0.00	$0.00	$0.00	$29.43	$38.21
6th 75% 4001-4800 hours OJT	75.01	$18.83	$6.60	$0.56	$0.36	$0.00	$4.40	$0.00	$0.00	$0.00	$30.75	$40.16

Special Calculation Note :

Ratio :

1-3 Technician to 2 Apprentice
4-6 Technician to 4 Apprentice
7-9 Technician to 6 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT, WYANDOT*

Special Jurisdictional Note : In Wyandot County the following townships are included: (Crawford, Jackson, Marseilles, Mifflin, Ridgeland, Ridge and Salem)

Details :

Installer Technician A: has 5 years of experience and training, successfully completed classroom and OJT requirements of the JATC Administered Apprenticeship Program, pass and maintained BICSI Installer Level 1, BICSI Installer Level 2 and BICSI Technician level. A Journeyman Installer/Technician "A" is a Journeyman Installer/Technician B with 5 years experience & training and who holds a current BICSI Technician Certification.

Installer Technician B; shall have 4 years of experience & training, successfully completed Classroom & OJT requirements of JATC Administrated Apprenticeship Program, pass and maintained BICSI Installer Level 1 and BICSI Installer Level 2 or has passed & maintained BISCI Installer Level 2.

An Apprentice/Installer shall be an individual currently participating in the JATC Administered Apprenticeship Program completing classroom and OJT requirements as specified by JATC.

An employee who is required to wear a pager after hours will receive an additional 1.00 per hour for all hours worked.
Work covers but not limited to: low voltage construction, installation, maintenance, and removal of teledata facilities (voice, data,video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, railroad communications, micro waves, V-sAT, by-pass, CATV, WAN, wide area networks, LAN and ISDN.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 32

Change # : LCR02-2020fbLoc32

Craft : Electrical Effective Date : 11/29/2020 Last Posted : 11/09/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Electrician	$32.12		$9.40	$5.65	$1.28	$0.00	$3.00	$0.96	$0.00	$0.00	$52.41	$68.47
Apprentice	**Percent**											
1st period 0-1000 hrs	50.00	$16.06	$9.40	$0.25	$0.64	$0.00	$0.00	$0.48	$0.00	$0.00	$26.83	$34.86
2nd period 1001-2000 hrs	50.00	$16.06	$9.40	$0.25	$0.64	$0.00	$0.00	$0.48	$0.00	$0.00	$26.83	$34.86
3rd period 2001- 3500 hrs	55.00	$17.67	$9.40	$3.11	$0.71	$0.00	$1.65	$0.53	$0.00	$0.00	$33.07	$41.90
4th period 3501-5000 hrs	65.00	$20.88	$9.40	$3.67	$0.84	$0.00	$1.95	$0.63	$0.00	$0.00	$37.37	$47.81
5th period 5001-6500 hrs	75.00	$24.09	$9.40	$4.24	$0.96	$0.00	$2.25	$0.72	$0.00	$0.00	$41.66	$53.70
6th period 6501-8000 hrs	85.00	$27.30	$9.40	$4.80	$1.09	$0.00	$2.55	$0.82	$0.00	$0.00	$45.96	$59.61

Special Calculation Note : OTHER IS: NEBF

Ratio :

Each Job Site shall be allowed 3 Journeymen to 2 Apprentices as illustrated below:
1 to 3 Journeymen to 2 Apprentices
4 to 6 Journeymen to 4 Apprentices
7 to 9 Journeymen to 6 Apprentices

The first person assigned to any job site shall be a Journeyman Wireman.

Jurisdiction (* denotes special jurisdictional note) :
ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT, WYANDOT*

Special Jurisdictional Note : In Wyandot County the following townships are included: Crawford, Jackson, Marseilles, Mifflin, Ridgeland, Ridge and Salem.

Details :

A Certified Welder will receive $1.50 per hour above the Journeyman rate. Welders welding on galvanized shall receive $1.50 per hour above the Journeyman rate.

All work over 35 feet but less than 60 feet shall receive $.75 per hour above the Journeyman rate.

All work 60 feet or over shall receive $1.50 per hour above the Journeyman rate.

When using a JLG-typ equipment or bucket truck is used there will be no high pay unless the work is over 60 feet.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 71 DOT Traffic Signal Highway Lighting American Line Builders

Change # : LCRO1-2021fbLoc71DOTClev

Craft : Lineman Effective Date : 03/16/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	$40.31	$6.75	$1.21	$0.40	$0.00	$7.66	$0.06	$0.00	$0.00	$56.39	$76.54
Traffic Signal & Lighting Journeyman	$38.77	$6.75	$1.16	$0.39	$0.00	$7.37	$0.06	$0.00	$0.00	$54.50	$73.89
Equipment Operator	$35.41	$6.75	$1.06	$0.35	$0.00	$6.73	$0.06	$0.00	$0.00	$50.36	$68.06
Groundman 0 to 12 months (W/O CDL)	$21.47	$6.75	$0.64	$0.21	$0.00	$4.08	$0.06	$0.00	$0.00	$33.21	$43.95
Groundman 0 to 12 Months (W CDL)	$23.46	$6.75	$0.70	$0.23	$0.00	$4.46	$0.06	$0.00	$0.00	$35.66	$47.39
Groundman greater than 1 year (W CDL)	$25.45	$6.75	$0.76	$0.25	$0.00	$4.84	$0.06	$0.00	$0.00	$38.11	$50.83
Traffic Apprentice											
1st 1000 hrs	$23.26	$6.75	$0.70	$0.23	$0.00	$4.42	$0.06	$0.00	$0.00	$35.42	$47.05
2nd 1000 hrs	$25.20	$6.75	$0.76	$0.25	$0.00	$4.79	$0.06	$0.00	$0.00	$37.81	$50.41
3rd 1000 hrs	$27.14	$6.75	$0.81	$0.27	$0.00	$5.16	$0.06	$0.00	$0.00	$40.19	$53.76
4th 1000 hrs	$29.08	$6.75	$0.87	$0.29	$0.00	$5.53	$0.06	$0.00	$0.00	$42.58	$57.12
5th 1000 hrs	$31.01	$6.75	$0.93	$0.31	$0.00	$5.89	$0.06	$0.00	$0.00	$44.95	$60.46
6th 1000 hrs	$34.89	$6.75	$1.05	$0.35	$0.00	$6.63	$0.06	$0.00	$0.00	$49.73	$67.17
Lineman	**Percent**										

Apprentice												
1st 1,000 Hours	60.00	$24.19	$6.75	$0.73	$0.24	$0.00	$4.60	$0.06	$0.00	$0.00	$36.57	$48.66
2nd 1,000 Hours	65.00	$26.20	$6.75	$0.79	$0.26	$0.00	$4.98	$0.06	$0.00	$0.00	$39.04	$52.14
3rd 1,000 Hours	70.00	$28.22	$6.75	$0.85	$0.28	$0.00	$5.36	$0.06	$0.00	$0.00	$41.52	$55.63
4th 1,000 Hours	75.00	$30.23	$6.75	$0.91	$0.30	$0.00	$5.74	$0.06	$0.00	$0.00	$43.99	$59.11
5th 1,000 Hours	80.00	$32.25	$6.75	$0.97	$0.32	$0.00	$6.13	$0.06	$0.00	$0.00	$46.48	$62.60
6th 1,000 Hours	85.00	$34.26	$6.75	$1.03	$0.34	$0.00	$6.51	$0.06	$0.00	$0.00	$48.95	$66.09
7th 1,000 Hours	90.00	$36.28	$6.75	$1.09	$0.36	$0.00	$6.89	$0.06	$0.00	$0.00	$51.43	$69.57

Special Calculation Note : Other is for Safety and Education Fund

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

AUGLAIZE, CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, LOGAN, MERCER, MIAMI, MONTGOMERY, PREBLE, SHELBY

Special Jurisdictional Note :

Details :

A groundman when directed shall assist a Journeymen 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, ladders, or work from an elevated platform or bucket truck. This classification shall not perform work normally assigned to an apprentice lineman. 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.

Prevailing Wage Rate
Skilled Crafts

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

Change # : LCN01-2021fbLoc7

Craft : Lineman Effective Date : 03/16/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	$45.61	$6.75	$1.37	$0.46	$0.00	$10.95	$0.60	$0.00	$0.00	$65.74	$88.54
Certified Lineman Welder	$45.61	$6.75	$1.37	$0.46	$0.00	$10.95	$0.60	$0.00	$0.00	$65.74	$88.54
Certified Cable Splicer	$45.61	$6.75	$1.37	$0.46	$0.00	$10.95	$0.60	$0.00	$0.00	$65.74	$88.54
Operator A	$40.88	$6.75	$1.23	$0.41	$0.00	$9.81	$0.60	$0.00	$0.00	$59.68	$80.12
Operator B	$36.20	$6.75	$1.09	$0.36	$0.00	$8.69	$0.60	$0.00	$0.00	$53.69	$71.79
Operator C	$29.12	$6.75	$0.87	$0.29	$0.00	$6.99	$0.60	$0.00	$0.00	$44.62	$59.18
Groundman 0-12 months Exp	$22.81	$6.75	$0.68	$0.23	$0.00	$5.47	$0.60	$0.00	$0.00	$36.54	$47.94
Groundman 0-12 months Exp w/CDL	$25.09	$6.75	$0.75	$0.25	$0.00	$6.02	$0.60	$0.00	$0.00	$39.46	$52.01
Groundman 1 yr or more	$25.09	$6.75	$0.75	$0.25	$0.00	$6.02	$0.60	$0.00	$0.00	$39.46	$52.01
Groundman 1 yr or more w/CDL	$29.65	$6.75	$0.85	$0.28	$0.00	$6.50	$0.60	$0.00	$0.00	$44.63	$59.46
Equipment Mechanic A	$36.20	$6.75	$1.09	$0.36	$0.00	$8.69	$0.60	$0.00	$0.00	$53.69	$71.79
Equipment Mechanic B	$32.66	$6.75	$0.98	$0.33	$0.00	$7.84	$0.60	$0.00	$0.00	$49.16	$65.49
Equipment Mechanic C	$29.12	$6.75	$0.87	$0.29	$0.00	$6.99	$0.60	$0.00	$0.00	$44.62	$59.18
X-Ray Technician	$45.61	$6.75	$1.37	$0.46	$0.00	$10.95	$0.60	$0.00	$0.00	$65.74	$88.54

Apprentice	Percent											
1st 1000 hrs	60.00	$27.37	$6.75	$0.82	$0.27	$0.00	$6.57	$0.60	$0.00	$0.00	$42.38	$56.06
2nd 1000 hrs	65.00	$29.65	$6.75	$0.89	$0.30	$0.00	$7.12	$0.60	$0.00	$0.00	$45.31	$60.13
3rd 1000 hrs	70.00	$31.93	$6.75	$0.96	$0.32	$0.00	$7.66	$0.60	$0.00	$0.00	$48.22	$64.18
4th 1000 hrs	75.00	$34.21	$6.75	$1.03	$0.34	$0.00	$8.21	$0.60	$0.00	$0.00	$51.14	$68.24
5th 1000 hrs	80.00	$36.49	$6.75	$1.09	$0.36	$0.00	$8.76	$0.60	$0.00	$0.00	$54.05	$72.29
6th 1000 hrs	85.00	$38.77	$6.75	$1.16	$0.39	$0.00	$9.30	$0.60	$0.00	$0.00	$56.97	$76.35
7th 1000 hrs	90.00	$41.05	$6.75	$1.23	$0.41	$0.00	$9.85	$0.60	$0.00	$0.00	$59.89	$80.41

Special Calculation Note : Other is Health Retirement Account

Operator "A"
John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater then 25 tons and less than 45 tons).

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

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

*All Operators of cranes 45 ton or larger shall be paid the journeyman rate of pay. $0.30 is for Health Retirement Account.

Ratio :

1 Journeyman to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL,

TUSCARAWAS, UNION, VINTON, WARREN,
WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

Heli - Arc Welding will be paid $.30 above Journeyman rate. Additional compensation of 10% over the Journeyman Lineman and Journeyman Technician for performing work on structures outside of buildings such as water towers, smoke stacks, radio and television towers, more than 75' above the ground.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 71 Outside Utility Power

Change # : LCN01-2021fbLoc7

Craft : Lineman Effective Date : 03/16/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Lineman	$43.22	$6.75	$1.30	$0.43	$0.00	$10.37	$0.60	$0.00	$0.00	$62.67	$84.28
Substation Technician	$43.22	$6.75	$1.30	$0.43	$0.00	$10.37	$0.60	$0.00	$0.00	$62.67	$84.28
Cable Splicer	$45.26	$6.75	$1.36	$0.45	$0.00	$10.86	$0.60	$0.00	$0.00	$65.28	$87.91
Operator A	$38.75	$6.75	$1.16	$0.39	$0.00	$9.30	$0.60	$0.00	$0.00	$56.95	$76.32
Operator B	$34.27	$6.75	$1.03	$0.34	$0.00	$8.22	$0.60	$0.00	$0.00	$51.21	$68.34
Operator C	$27.54	$6.75	$0.83	$0.28	$0.00	$6.61	$0.60	$0.00	$0.00	$42.61	$56.38
Groundman 0-12 months Exp	$21.61	$6.75	$0.65	$0.22	$0.00	$5.19	$0.60	$0.00	$0.00	$35.02	$45.82
Groundman 0-12 months Exp w/CDL	$23.77	$6.75	$0.71	$0.24	$0.00	$5.70	$0.60	$0.00	$0.00	$37.77	$49.66
Groundman 1 yr or more	$23.77	$6.75	$0.71	$0.24	$0.00	$5.70	$0.60	$0.00	$0.00	$37.77	$49.66
Groundman 1 yr or more w/CDL	$28.09	$6.75	$0.84	$0.28	$0.00	$6.74	$0.60	$0.00	$0.00	$43.30	$57.35
Equipment Mechanic A	$34.27	$6.75	$1.03	$0.34	$0.00	$8.22	$0.60	$0.00	$0.00	$51.21	$68.34
Equipment Mechanic B	$30.91	$6.75	$0.93	$0.31	$0.00	$7.42	$0.60	$0.00	$0.00	$46.92	$62.38
Equipment Mechanic C	$27.54	$6.75	$0.83	$0.28	$0.00	$6.61	$0.60	$0.00	$0.00	$42.61	$56.38
Line Truck w/uuger	$30.44	$6.75	$0.91	$0.30	$0.00	$7.31	$0.60	$0.00	$0.00	$46.31	$61.53
Apprentice	**Percent**										

1st 1000 hrs	60.00	$25.93	$6.75	$0.78	$0.26	$0.00	$6.22	$0.60	$0.00	$0.00	$40.54	$53.51
2nd 1000 hrs	65.00	$28.09	$6.75	$0.84	$0.28	$0.00	$6.74	$0.60	$0.00	$0.00	$43.30	$57.35
3rd 1000 hrs	70.00	$30.25	$6.75	$0.91	$0.30	$0.00	$7.26	$0.60	$0.00	$0.00	$46.07	$61.20
4th 1000 hrs	75.00	$32.42	$6.75	$0.97	$0.32	$0.00	$7.78	$0.60	$0.00	$0.00	$48.84	$65.04
5th 1000 hrs	80.00	$34.58	$6.75	$1.04	$0.35	$0.00	$8.30	$0.60	$0.00	$0.00	$51.62	$68.90
6th 1000 hrs	85.00	$36.74	$6.75	$1.10	$0.37	$0.00	$8.82	$0.60	$0.00	$0.00	$54.38	$72.75
7th 1000 hrs	90.00	$38.90	$6.75	$1.17	$0.39	$0.00	$9.34	$0.60	$0.00	$0.00	$57.15	$76.60

Special Calculation Note : Other is Health Retirement Account
Operator "A"
John Henry Rock Drill, D-6 (or equivalent) and above, Trackhoe Digger, (320 Track excavator), Cranes (greater then 25 tons and less than 45 tons).

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

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

Ratio :

(1) Journeyman Lineman to (1) Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note : 0.30 is for Health Retirement Account.

Details :
Heli - Arc Welding will be paid $.30 above Journeyman rate. Additional compensation of 10% over the Journeyman Lineman and Journeyman Technician for performing work on structures outside of buildings such

as water towers, smoke stacks, radio and television towers, more than 75' above the ground.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Electrical Local 71 Voice Data Video Outside

Change # : LCR01-2017fbLoc71VDV

Craft : Voice Data Video Effective Date : 10/18/2017 Last Posted : 10/18/2017

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Electrical Installer Technician I	$23.46	$5.50	$0.70	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$29.96	$41.69
Installer Technician II	$22.37	$5.50	$0.67	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$28.84	$40.03
Equipment Operator I	$22.37	$5.50	$0.67	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$28.84	$40.03
Equipment Operator II	$18.43	$5.50	$0.55	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$24.78	$33.99
Installer /Repair Outside	$22.37	$5.50	$0.67	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$28.84	$40.03
Ground Driver W/CDL	$15.83	$5.50	$0.47	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$22.10	$30.01
Groundman	$13.24	$5.50	$0.40	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$19.44	$26.06
Cable Splicer	$23.46	$5.50	$0.70	$0.00	$0.00	$0.30	$0.00	$0.00	$0.00	$29.96	$41.69

Special Calculation Note :

Ratio :

Jurisdiction (* denotes special jurisdictional note) :
ADAMS, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, CUYAHOGA, DARKE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, GALLIA, GEAUGA, GREENE, GUERNSEY, HAMILTON, HARRISON, HIGHLAND, HOCKING, HOLMES, JACKSON, JEFFERSON, KNOX, LAKE, LAWRENCE, LICKING, LOGAN, LORAIN, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE,

MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, RICHLAND, ROSS, SCIOTO, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VINTON, WARREN, WASHINGTON, WAYNE

Special Jurisdictional Note :

Details :

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

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

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

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

Equipment Operator I: Able to operate a digger derrick or bucket truck. Have at least 5 years of experience and must have a valid CDL license.

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

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

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

Prevailing Wage Rate
Skilled Crafts

Name of Union: Glazier Local 1020

Change # : LCN01-2021fbLoc1020

Craft : Glazier Effective Date : 02/08/2021 Last Posted : 02/08/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Glazier	$20.78		$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$32.70	$43.09
Apprentice	**Percent**											
1st 6 months	50.00	$10.39	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$22.31	$27.50
2nd 6 months	55.00	$11.43	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$23.35	$29.06
3rd 6 months	60.00	$12.47	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$24.39	$30.62
4th 6 months	65.00	$13.51	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$25.43	$32.18
5th 6 months	70.00	$14.55	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$26.47	$33.74
6th 6 months	75.00	$15.59	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$27.50	$35.30
7th 6 months	80.00	$16.62	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$28.54	$36.86
8th 6 months	90.00	$18.70	$3.82	$3.95	$0.15	$0.00	$0.00	$4.00	$0.00	$0.00	$30.62	$39.97

Special Calculation Note : Other is: In lieu of paid holidays and paid vacations $4.00 per hour premium is added

Ratio :

1Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CRAWFORD, HANCOCK, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, WYANDOT

Special Jurisdictional Note :

Details :

Journeymen in charge of 6 or more men shall receive $1.00 an hour premium.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Ironworker Local 290

Change # : LCN01-2021fbLoc290

Craft : Ironworker Effective Date : 01/27/2021 Last Posted : 01/27/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Ironworker Structural	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Welder	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Fence Erector	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Reinforcing Rods	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Machinery Mover	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Sheeter	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Metal Building Erector	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Rigger & Erector	$29.68		$8.30	$9.50	$0.65	$0.00	$4.45	$0.02	$0.00	$0.00	$52.60	$67.44
Apprentice	**Percent**											
1st year	65.05	$19.31	$8.30	$9.50	$0.65	$0.00	$2.95	$0.02	$0.00	$0.00	$40.73	$50.38
2nd year	75.07	$22.28	$8.30	$9.50	$0.65	$0.00	$2.95	$0.02	$0.00	$0.00	$43.70	$54.84
3rd year	85.05	$25.24	$8.30	$9.50	$0.65	$0.00	$2.95	$0.02	$0.00	$0.00	$46.66	$59.28
4th year	95.05	$28.21	$8.30	$9.50	$0.65	$0.00	$2.95	$0.02	$0.00	$0.00	$49.63	$63.74

Special Calculation Note : Other is for Industry Fund.

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN*, AUGLAIZE, BUTLER*, CHAMPAIGN*, CLARK, CLINTON, DARKE, FAYETTE*, GREENE, HARDIN*, HIGHLAND*, LOGAN*, MADISON*, MERCER*, MIAMI, MONTGOMERY, PREBLE, SHELBY, VAN WERT*, WARREN*

Special Jurisdictional Note : Allen County Twps included are: Auglaize, Perry, Shawnee, Amanda, Spencer, Marion, Sugar Creek, American, Bath, Jackson. Butler County Twps included are: Milford, Wayne, Madison, Lemon. Champaign Cnty Twps included are: Union, Urbana, Jackson, Concord, Salem, Mad River, Johnson, Harrison, Adams. Fayette County Twps included are: Green, Jasper,

Concord, Jefferson. Hardin County Twps included are: Round Head, Marion, Liberty. Highland County Twps included are: Fairfield, Penn, Union, Marshall, Liberty, Paint, Brush Creek. Logan County Twps included are: Richland, Stokes, Bloomfield, Washington, Harrison, McArthur, Lake, Liberty, Pleasant, Miami. Madison County Twps included are: Stokes. Mercer County Twps included are: Dublin, Washington, Jefferson, Recovery, Gibson, Union, Liberty, Butler, Granville, Center, Hopewell, Franklin, Marion. VanWert County Twps included are: Jennings. Warren County Twps included are: Franklin, Clear Creek, Turtle Creek, Wayne, Massie, Washington, Salem, Union.

Details :

Structural Iron Work but not limited to:field fabrication, all loading to and including the 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, precast prestressed and post-stressed concrete structures. Bridges and 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,derrick monorail systems, Chicago booms,overhead 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 or steel, for stairs,hand railings,rolling doors, rolling gates,rolling shutters,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 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 # : LCN01-2020fbLocalHevHwy3

Craft : Laborer Group 1 Effective Date : 05/14/2020 Last Posted : 05/14/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Laborer Group 1	$32.62		$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$43.97	$60.28
Group 2	$32.79		$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$44.14	$60.54
Group 3	$33.12		$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$44.47	$61.03
Group 4	$33.57		$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$44.92	$61.71
Watch Person	$25.35		$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$36.70	$49.38
Apprentice	**Percent**											
0-1000 hrs	60.00	$19.57	$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$30.92	$40.71
1001-2000 hrs	70.00	$22.83	$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$34.18	$45.60
2001-3000 hrs	80.00	$26.10	$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$37.45	$50.49
3001-4000 hrs	90.00	$29.36	$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$40.71	$55.39
More than 4000 hrs	100.00	$32.62	$7.00	$3.80	$0.45	$0.00	$0.00	$0.00	$0.10	$0.00	$43.97	$60.28

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 perfomr work as per the October 31, 1949, memorandum on concrete forms, byand between the United Brotherhood of Caprpenters and Joiners of Americ 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 memebers of the Laborers' International Union of North America."

Group 2

Asphalt Raker, Screwman or Paver, Concrete Puddler, Kettle Man (pipeline), All Machine-Driven Tools (Gas, Electric, Air), Mason Tender, Brick Paver, Mortar Mixer, Skid Steer, Sheeting & Shoring Person, Surface Grinder Person, Screedperson, Water Blast, Hand Held Wand, Power Buggy or Power Wheelbarrow, Paint Striper, Plastic fusing Machine Operator, Rodding Machine Operator, Pug Mill Operator, Operator of All Vacuum Devices Wet or Dry, Handling of all Pumps 4 inches and under (gas, air or electric), Diver, Form Setter, Bottom Person, Welder Helper (pipeline), Concrete Saw Person, Cutting with Burning Torch, Pipe Layer, Hand Spiker (railroad), Underground Person (working in sewer and waterline, cleaning, repairing and reconditioning). Tunnel Laborer (without air),Caisson, Cofferdam (below 25 feet deep), Air Track and Wagon Drill, Sandblaster Nozzle Person, Hazardous Waste (level B), ***Lead Abatement, Hazardous Waste (level C)

***Includes the erecting of structures for the removal, including the encapsulation and containment of Lead abatement process.

Group 3

Blast and Powder Person, Muckers will be defined as shovel men working directly with the miners, Wrencher (mechanical joints & utility pipeline), Yarner, Top Lander, Hazardous Waste (level A), Concrete Specialist, Curb Setter and Cutter, Grade Checker, Concrete Crew in Tunnels. Utility pipeline Tappers, Waterline, Caulker, Signal Person will receive the rate equal to the rate paid the Laborer classification for which the Laborer is signaling.

Group 4

Miner,Welder, Gunite Nozzle Person

A.) The Watchperson shall be responsible to patrol and maintain a safe traffic zone including but not limited to barrels, cones, signs, arrow boards, message boards etc.

The responsibility of a watchperson is to see that the equipment, job and office trailer etc. are secure.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Labor Local 329

Change # : LCN01-2020fbLoc329

Craft : Laborer Effective Date : 05/07/2020 Last Posted : 05/07/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Laborer Group 1	$27.81		$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$39.16	$53.06
Group 2	$27.96		$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$39.31	$53.29
Group 3	$28.11		$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$39.46	$53.51
Group 4	$28.31		$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$39.66	$53.81
Apprentice	**Percent**											
0-1000 hrs & 108 hrs Instruction	60.00	$16.69	$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$28.04	$36.38
1001-2000 hrs & 216 hrs Instruction	70.00	$19.47	$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$30.82	$40.55
2001-3000 hrs & 324 hrs Instruction	80.00	$22.25	$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$33.60	$44.72
3001-4,000 hrs & 432 hrs Instruction	90.00	$25.03	$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$36.38	$48.89
More than 4000 Hours	100.00	$27.81	$7.00	$3.80	$0.40	$0.00	$0.00	$0.00	$0.15	$0.00	$39.16	$53.06

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

Ratio :

1 Journeyman to 1 Apprentice then
4 to 1 thereafter per project

Jurisdiction (* denotes special jurisdictional note) :
ALLEN, AUGLAIZE, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT

Special Jurisdictional Note :

Details :
Group 1

Building Laborer, Carpenter Tender, Flagman, Signal Man, Rigging/Hooking/unhooking of construction material, utility construction laborer, guardrail erector, fence installer, landscape laborer, laser beam set-up man, grade checker, power wheelbarrow or power buggy, removal of asbestos, hazardous waste (Levels C & D), drinking water supplier, warehouse/tool man, safety man, confined space/hole watch attendant, fire watch, parking attendant, watchman, time/bookkeeper.

Group 2
Vibrators, Cement Finisher Helper, cement Raker, pump hose nozzle man, Asphalt Raker, Tamper & Packer, Pump Man Under 4", Discharge, Caisson, Cofferdam, Tunnel, Spiker Railroad (By Hand), Pot Tender, Torch Man, Demolition, All Machine Driven Tools (Gas, Electric, Air).

Group 3
Plaster Tender, Mortar Mixer, Cylinder, Shaft, Sewer, Water Conduit, Gas, Oil, Pipeline, Except Mainlines, Sewer Bottom Man, Sewer Pipe Layer, Manhole Builder, Blaster Helper, air track/Wagon Drill Helper, Jack Hammer, Gunnite Operator, Mucker (Tunnel & Caisson) Free Air, Miner, Sand Blaster, Blaster-Powder Man, Wagon drill/Operator, The removal of Lead or Toxic and Hazardous Waste materials (Level A & B).

Group 4
Mason Tender, scaffold builder, truck driver with CDL, welder, skid loader, forklift operator and man lifts.

Prevailing Wage Rate
Skilled Crafts

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

Change # : LCN01-2020fbLoc18zone3

Craft : Operating Engineer Effective Date : 05/14/2020 Last Posted : 05/14/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Operator Class 1	$38.24		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$53.69	$72.81
Class 2	$38.12		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$53.57	$72.63
Class 3	$37.08		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$52.53	$71.07
Class 4	$35.90		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$51.35	$69.30
Class 5	$30.44		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$45.89	$61.11
Class 6	$38.49		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$53.94	$73.18
Class 7	$38.74		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$54.19	$73.56
Class 8	$39.24		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$54.69	$74.31
Class 9	$39.49		$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$54.94	$74.68
Apprentice	**Percent**											
1st Year	50.00	$19.12	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$34.57	$44.13
2nd Year	60.00	$22.94	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$38.39	$49.87
3rd Year	70.00	$26.77	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$42.22	$55.60
4th Year	80.00	$30.59	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$46.04	$61.34
Field Mechanic Trainee												
1st Year	50.00	$19.12	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$34.57	$44.13
2nd Year	60.00	$22.94	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$38.39	$49.87
3rd Year	70.00	$26.77	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$42.22	$55.60
4th Year	80.00	$30.59	$8.51	$6.00	$0.85	$0.00	$0.00	$0.09	$0.00	$0.00	$46.04	$61.34

Special Calculation Note : Other: Education & Safety $0.09

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 apprenice, while employed as part of a crew per Article VIII, paragraph

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE,

77, will not be subject to the apprenticeship ratios in this collective bargaining agreement

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

Class 1 - Barrier Moving Machine; 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) Derricks (all types); Draglines Dredges (dipper, clam or suction) 3-man crew; Elevating Graders or Euclid Loaders; Floating Equipment; Gradalls; Helicopter Operators; hoisting building materials; Helicopter Winch Operators, Hoisting building materials; Hoes (All types) Hoists (with two or more drums in use): Hydraulic Gantry (lift system); Laser Finishing Machines; Lift Slab or Panel Jack Operators; Locomotives (all types); Maintenance Engineers (Mechanic 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 work; Side Booms; Slip Form Pavers; Straddle Carriers (Building Construction on site); Tug Boats. Horizontal Directional Drill, Rough Terrain Fork-lift with Winch/Hoist, Laser Screed, and Like equipment, Compact Cranes,track or rubber over 4,000 pound capacity,self-erecting cranes:stationary,track or truck (all configurations) bucket trench machines (over 24 " wide).

Class 2 - Asphalt Pavers; Bobcat-type and/or skid steer loader with hoe attachment greater than 7000 lbs.; Bulldozers; CMI type Equipment; C; Endloaders; Hydro Milling Machine; Kolman-type Loaders (Dirt Loading); Lead Greasemen; Mucking Machines; Pettibone-Rail Equipment; Power Graders; Power Scoops; Power Scrapers; Push Cats; Vermeer Type Concrete Saw, All rotomills, grinders & planers of all types. Articulating/end dumps (minus $4.00/hour from Class 2 rate)

Class 3 - 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 Drillers - 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; 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 inches and over discharge); Switch & Tie Tampers (without lifting and aligning device); Trench Machines (24 inches and under); Utility Operators,Material hoist/elevators.

Class 4 - Ballast Re-locator; Backfillers and Tampers; Batch Plant Operators; Bar and Joint Installing Machines; Bull Floats; Burlap and Curing Machines; Clefplanes; Compressors, on building construction; Concrete Spreader; Conveyors, used for handling building materials; Concrete Mixers, one bag capacity (side loader);

Concrete Mixers, capacity more than one bag; Crushers; Deck Hands; Drum Fireman (in Asphalt Plant); Farm type tractors pulling attachments; Finishing Machines; Form Trenchers; Generators: Gunite Machines; Hydro-Seeders; Pavement Breakers (hydraulic or cable); Post Drivers; Post Hole Diggers; Pressure Pumps (over 1/2 inch discharge); Road Widening Trenchers; Rollers (except asphalt); All Concrete pumps (without Boom with 4 inch or smaller systems); self-propelled Power Spreaders; self-propelled Sub-graders; Shotcrete Machines; Tire Repairmen; Tractors, pulling sheepfoot rollers or graders; VAC/ALLS; Vibratory Compactors, with integral power; Welder Operators.

Class 5 - Boilers (less than 15 lbs. pressure); 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); Signalmen, Submersible Pumps (under 4 inch discharge). Directional Drill Locator and Allen Screed Concrete Paver, Fueling & greasing (Primary Operator with Specialized CDL Endorsement Add $3.00/ hour), compact cranes: track or rubber under 4,000 pounds.

Class 6 - Master Mechanic

Class 7 - Boom & Jib 150 - 180 feet

Class 8 - Boom & Jib 180 - 249 feet

Class 9 - Boom & Jib 250 - or over

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 639 Zone 2 Sign

Change # : LCN01-2016fbLoc639

Craft : Painter Effective Date : 08/03/2016 Last Posted : 08/03/2016

	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	$21.25	$1.33	$0.14	$0.00	$0.00	$0.00	$0.57	$0.00	$0.00	$23.29	$33.92
Painter Sign Journeyman Tech/Team Leader Class B	$21.25	$1.33	$0.14	$0.00	$0.41	$0.00	$0.57	$0.00	$0.00	$23.70	$34.32
Painter Sign Journeyman Tech/Team Leader Class C	$21.25	$1.33	$0.14	$0.00	$0.82	$0.00	$0.57	$0.00	$0.00	$24.11	$34.74
Painter Sign Journeyman Tech/Team Leader Class D	$21.25	$1.33	$0.14	$0.00	$1.23	$0.00	$0.57	$0.00	$0.00	$24.52	$35.14
Sign Journeyman Class A	$20.98	$1.33	$0.14	$0.00	$0.00	$0.00	$0.56	$0.00	$0.00	$23.01	$33.50
Sign Journeyman Class B	$20.98	$1.33	$0.14	$0.00	$0.40	$0.00	$0.56	$0.00	$0.00	$23.41	$33.90
Sign Journeyman Class C	$20.98	$1.33	$0.14	$0.00	$0.81	$0.00	$0.56	$0.00	$0.00	$23.82	$34.31
Sign Journeyman Class D	$20.98	$1.33	$0.14	$0.00	$1.21	$0.00	$0.56	$0.00	$0.00	$24.22	$34.71
Tech Sign Fabrication/ Erector Class A	$15.90	$1.33	$0.14	$0.00	$0.00	$0.00	$0.43	$0.00	$0.00	$17.80	$25.75
Tech Sign	$15.90	$1.33	$0.14	$0.00	$0.31	$0.00	$0.43	$0.00	$0.00	$18.11	$26.06

Fabrication/ Erector Class B											
Tech Sign Fabrication/ Erector Class C	$15.90	$1.33	$0.14	$0.00	$0.61	$0.00	$0.43	$0.00	$0.00	$18.41	$26.36
Tech Sign Fabrication/ Erector Class D	$15.90	$1.33	$0.14	$0.00	$0.92	$0.00	$0.43	$0.00	$0.00	$18.72	$26.67

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: 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 mirrow 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 1020 Commercial

Change # : LCN01-2021fbLoc1020Com

Craft : Drywall Finisher Effective Date : 04/01/2021 Last Posted : 03/16/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Painter Drywall Finisher	$24.20		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$39.08	$51.18
Apprentice	**Percent**											
1st-0-1500 hrs	60.00	$14.52	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$29.40	$36.66
2nd- 1501-3000 hrs	75.00	$18.15	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$33.03	$42.10
3rd- 3001-4500 hrs	90.00	$21.78	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$36.66	$47.55

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

Ratio :

1 Journeymen employed to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, WILLIAMS

Special Jurisdictional Note :

Details :

All surfaces 40 feet or over where material is applied to or labor performed on above the ground level (exterior), floor level (interior), $0.50 per hour shall be applied to the prevailing rate of the classification involved.

Swing stage, Chair, Spiders and Cherry Pickers shall have $0.25 added to the prevailing rate of the classification involved.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 1020 Commercial

Change # : LCNO1-2021fbLoc1020Com

Craft : Painter Effective Date : 04/01/2021 Last Posted : 03/17/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Painter Brush Roll	$22.15		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$37.03	$48.10
Spray Water Borne Products	$22.15		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$37.03	$48.10
Sandblaster Pressure Cleaning and Spray of alkyd, epoxy's, and petroleum base products	$22.90		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$37.78	$49.23
Wallcovering	$23.10		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$37.98	$49.53
Lead Abatement	$27.25		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$42.13	$55.76
Apprentice	**Percent**											
1st 0-1500 hrs	60.00	$13.29	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$28.17	$34.82
2nd 1501-3000 hrs	70.00	$15.50	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$30.38	$38.14
3rd 3001-4500 hrs	80.00	$17.72	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$32.60	$41.46
4th 4501-6000 hrs	90.00	$19.93	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$34.82	$44.78

Special Calculation Note : APPRENTICE PAY BASED ON % OF EACH CLASSIFICATION ABOVE PLUS FULL FRINGES.

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, WILLIAMS

Special Jurisdictional Note :

Details :
Commercial Classification shall be strictly limited to:
All levels of education facilities including dormitories.
Any retail establishments including dealerships but not distribution warehouses.
All Restaurants, bars and clubs.
Medical and dental facilities.
Churches and other religious centers.
Financial Institutions.

Journeymen and apprentices applying Coal Tar products shall have $1.00 per hour added to the prevailing rate of the classification involved.

Journeymen and apprentices working with a spray painter as a rigger, picker, or blow down man shall receive spray painter wages.

Swing stage, Chair, Spiders and Cherry Pickers shall have $.25 added to the prevailing rate of the classification involved.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 1020 Commercial

Change # : LCN01-2021fbLoc1020Com

Craft : Drywall Finisher Effective Date : 04/01/2021 Last Posted : 03/16/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Painter Drywall Finisher	$24.20		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$39.08	$51.18
Apprentice	**Percent**											
1st-0-1500 hrs	60.00	$14.52	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$29.40	$36.66
2nd- 1501-3000 hrs	75.00	$18.15	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$33.03	$42.10
3rd- 3001-4500 hrs	90.00	$21.78	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$36.66	$47.55

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

Ratio :

1 Journeymen employed to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, WILLIAMS

Special Jurisdictional Note :

Details :

All surfaces 40 feet or over where material is applied to or labor performed on above the ground level (exterior), floor level (interior), $0.50 per hour shall be applied to the prevailing rate of the classification involved.

Swing stage, Chair, Spiders and Cherry Pickers shall have $0.25 added to the prevailing rate of the classification involved.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 1020 HevHwy

Change # : LCN01-2021fbLoc1020

Craft : Painter Effective Date : 04/01/2021 Last Posted : 03/16/2021

	BHR	Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
		H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification											
Painter Bridge Class 1	$35.93	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$50.81	$68.77
Bridge Painter, Rigger, Containment Builder, Spot Blaster Class 2	$32.93	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$47.81	$64.28
Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control, Boat Person, Driver Class 3 (0-5 Yrs. Exp.)	$25.93	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$40.81	$53.78
Equipment Operator/Field Mechanic, Grit Reclamation, Paint Mixer, Traffic Control, Boat Person, Driver Class 3 (5 plus Yrs. Exp.)	$29.13	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$44.01	$58.58
Concrete Sealing, Concrete Blasting/Power Washing/Etc. Class 4	$28.93	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$43.81	$58.28
Quality Control/Quality Assurance, Trafiic safety, Competent Person Class 5	$28.93	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$43.81	$58.28

Apprentice	Percent											
1ST 0-1500 Hrs	60.00	$21.56	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$36.44	$47.22
2ND 1501-3000 Hrs.	70.00	$25.15	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$40.03	$52.61
3RD 3001-4500 Hrs.	80.00	$28.74	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$43.62	$58.00
4TH 4501-6000 Hrs.	90.00	$32.34	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$47.22	$63.39

Special Calculation Note :

Ratio :

1 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, WILLIAMS

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Painter Local 1020 Industrial

Change # : LCN01-2021fbLoc1020Ind

Craft : Painter Effective Date : 04/01/2021 Last Posted : 03/16/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Painter Brush Roll	$25.50		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$40.38	$53.13
Spray Painter Sandblasting Pressure Cleaning Refinery	$26.25		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$41.13	$54.26
Wall Coverings	$23.10		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$37.98	$49.53
Lead Abatement (plus .75 premium when blasting)	$27.25		$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$42.13	$55.76
Apprentice	**Percent**											
1st-0-1500 hrs	60.00	$15.30	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$30.18	$37.83
2nd-1501-3000 hrs	70.00	$17.85	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$32.73	$41.66
3rd-3001-4500 hrs	80.00	$20.40	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$35.28	$45.48
4th-4501-6000 hrs	90.00	$22.95	$7.45	$7.10	$0.33	$0.00	$0.00	$0.00	$0.00	$0.00	$37.83	$49.31

Special Calculation Note : APPRENTIC PAY BASED ON % OF EACH CLASSIFICATION ABOVE PLUS FULL FRINGES.

Ratio :

1 Journeymen employed to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CHAMPAIGN, DEFIANCE, HARDIN, LOGAN, MERCER, PAULDING, PUTNAM, SHELBY, VAN WERT, WILLIAMS

Special Jurisdictional Note :

Details :
All surfaces 40 feet or over where material is applied to or labor performed on above the ground level (exterior), floor level (interior), $0.50 per hour shall be applied to the prevailing rate of the classification involved.

Journeymen and apprentices applying Coal Tar products shall have $1.00 per hour added to the prevailing rate of the classification involved.

Journeymen and apprentices working with a spray painter as a rigger, picker, or blow down man shall receive spray painter wages.

Swing stage, Chair, Spiders and Cherry Pickers shall be paid $0.25 added to the prevailing rateof the classification involved.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Plasterer & Drywall Finisher Local 886

Change # : LCN01-2020fbLoc886

Craft : Plasterer Effective Date : 07/09/2020 Last Posted : 07/09/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Plasterer	$30.11		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$50.18	$65.23
Drywall	$28.10		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$48.17	$62.22
Drywall Apprentice												
Drywall 60%	$16.86		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$36.93	$45.36
Drywall r 55%	$18.27		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$38.34	$47.48
Drywall 70%	$19.67		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$39.74	$49.58
Drywall 75%	$21.08		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$41.15	$51.69
Drywall 80%	$22.48		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$42.55	$53.79
Drywall 85%	$23.89		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$43.96	$55.91
Drywall 90%	$25.29		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$45.36	$58.01
Drywall 95%	$26.70		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$46.77	$60.12
Drywall Shophand	$19.67		$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$39.74	$49.58
Plasterer Apprentice	**Percent**											
Plasterer	60.00	$18.07	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$38.14	$47.17
Plasterer	65.00	$19.57	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$39.64	$49.43
Plasterer	70.00	$21.08	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$41.15	$51.69
Plasterer	75.00	$22.58	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$42.65	$53.94
Plasterer	80.00	$24.09	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$44.16	$56.20
Plasterer	85.00	$25.59	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$45.66	$58.46
Plasterer	90.00	$27.10	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$47.17	$60.72
Plasterer	95.00	$28.60	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$48.67	$62.98

Plasterer Shophand	70.00	$21.08	$8.60	$7.00	$0.30	$0.00	$4.17	$0.00	$0.00	$0.00	$41.15	$51.69

Special Calculation Note :

Ratio :

1 Journeymen to 1 Apprentice for 1st Apprentice only
Then 3 Journeymen to 1 Apprentice thereafter

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, DEFIANCE, ERIE, FULTON, HANCOCK, HARDIN, HENRY, HURON, LOGAN, LUCAS, MERCER, OTTAWA, PAULDING, PUTNAM, SANDUSKY, SENECA, VAN WERT, WILLIAMS, WOOD

Special Jurisdictional Note :

Details :

****Improvers receive no fringe benefits for the first 90 days. Then $3.75 Health & Welfare
Workers on Swing Stage will be paid ($.25) per hour above journeyman rate.
Nozzelmen or Operators of the Plastering Browning Gun shall receive ($.75) per hour above journeyman rate.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Plumber Pipefitter Local 776

Change # : LCN01-2020fbLoc776

Craft : Plumber/Pipefitter Effective Date : 07/01/2020 Last Posted : 06/11/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Plumber Pipefitter	$37.63		$10.65	$7.06	$1.37	$0.00	$6.50	$0.00	$0.00	$0.00	$63.21	$82.03
Apprentice	**Percent**											
1st year	52.00	$19.57	$10.65	$0.00	$1.37	$0.00	$0.00	$0.00	$0.00	$0.00	$31.59	$41.37
2nd year	55.00	$20.70	$10.65	$7.06	$1.37	$0.00	$1.30	$0.00	$0.00	$0.00	$41.08	$51.42
3rd year	59.90	$22.54	$10.65	$7.06	$1.37	$0.00	$3.25	$0.00	$0.00	$0.00	$44.87	$56.14
4th year	71.60	$26.94	$10.65	$7.06	$1.37	$0.00	$3.25	$0.00	$0.00	$0.00	$49.27	$62.74
5th year	81.70	$30.74	$10.65	$7.06	$1.37	$0.00	$3.25	$0.00	$0.00	$0.00	$53.07	$68.45

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

Ratio :

1-2 Journeymen to 1 Apprentice
3 Journeymen to 2 Apprentice
4-5 Journeymen to 3 Apprentice

Jurisdiction (* denotes special jurisdictional note) :
ALLEN, AUGLAIZE, HARDIN, LOGAN, MERCER, SHELBY, VAN WERT

Special Jurisdictional Note :

Details :
$0.14 under "Other" is Labor Management Corporation Committee.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Roofer Local 75

Change # : LCN01-2020fbLoc75

Craft : Roofer Effective Date : 06/04/2020 Last Posted : 06/04/2020

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Roofer	$24.38		$8.28	$8.48	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$43.10	$55.29
Slate and Tile	$24.60		$8.28	$8.48	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$43.32	$55.62
Apprentice	**Percent**											
1st term 1000 hrs	50.00	$12.19	$2.50	$0.50	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$17.15	$23.25
2nd term 1000 hrs	55.00	$13.41	$8.28	$1.27	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$24.92	$31.62
3rd term 1000 hrs	60.00	$14.63	$8.28	$2.12	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$26.99	$34.30
4th term 1000 hrs	70.00	$17.07	$8.28	$2.97	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$30.28	$38.81
5th term 1000 hrs	80.00	$19.50	$8.28	$3.82	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$33.56	$43.32
Tradesman	79.00	$19.26	$5.00	$1.53	$0.66	$0.00	$0.00	$1.30	$0.00	$0.00	$27.75	$37.38

Special Calculation Note : Other is for National Roofing Industry Pension Plan.

Ratio :

3 Journeymen to 2 Apprentices

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, CLARK, CLINTON, DARKE, GREENE, MERCER, MIAMI, MONTGOMERY, PREBLE, SHELBY, VAN WERT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Sheet Metal Local 24 (Dayton)

Change # : LCR02-2019fbLoc24(Day)

Craft : Sheet Metal Worker Effective Date : 06/19/2019 Last Posted : 06/19/2019

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sheet Metal Worker	$27.72		$8.52	$14.46	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$51.55	$65.41
Apprentice	**Percent**											
Apprentice												
5th Year B	80.00	$22.18	$8.26	$11.56	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$42.85	$53.93
5th Year A	75.00	$20.79	$8.20	$10.85	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$40.69	$51.09
4th Year B	70.00	$19.40	$8.13	$10.13	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$38.51	$48.22
4th Year A	65.00	$18.02	$8.07	$9.40	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$36.34	$45.35
3rd year B	60.00	$16.63	$8.01	$8.68	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$34.17	$42.49
3rd Year A	55.00	$15.25	$7.94	$7.95	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$31.99	$39.61
2 Year B	53.78	$14.91	$7.90	$7.02	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$30.68	$38.13
2 Year A	52.69	$14.61	$7.88	$6.49	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$29.83	$37.13
Probationary 1 Year	51.13	$14.17	$7.85	$5.87	$0.85	$0.00	$0.00	$0.00	$0.00	$0.00	$28.74	$35.83

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

Ratio :

1 Journeyman to 1 Apprentice then,
1 Apprentice for every 2 Journeymen thereafter

Jurisdiction (* denotes special jurisdictional note) :

ALLEN, AUGLAIZE, BUTLER, CHAMPAIGN, CLARK, CLINTON, DARKE, GREENE, HARDIN, LOGAN, MERCER, MIAMI, MONTGOMERY, PREBLE, SHELBY, VAN WERT, WARREN, WYANDOT

Special Jurisdictional Note :

Details :

Prevailing Wage Rate
Skilled Crafts

Name of Union: Sprinkler Fitter Local 669

Change # : LCN01-2021fbLoc669

Craft : Sprinkler Fitter Effective Date : 04/01/2021 Last Posted : 03/31/2021

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Sprinkler Fitter	$41.87		$10.55	$7.00	$0.52	$0.00	$5.12	$0.10	$0.00	$0.00	$65.16	$86.09
Apprentice Indentured after April 1, 2013	**Percent**											
ClLASS 1	45.00	$18.84	$7.75	$0.00	$0.52	$0.00	$0.00	$0.10	$0.00	$0.00	$27.21	$36.63
CLASS 2	50.00	$20.93	$7.75	$0.00	$0.52	$0.00	$0.00	$0.10	$0.00	$0.00	$29.30	$39.77
CLASS 3	54.40	$22.78	$10.55	$7.00	$0.52	$0.00	$1.15	$0.10	$0.00	$0.00	$42.10	$53.49
CLASS 4	59.40	$24.87	$10.55	$7.00	$0.52	$0.00	$1.15	$0.10	$0.00	$0.00	$44.19	$56.63
CLASS 5	64.42	$26.97	$10.55	$7.00	$0.52	$0.00	$1.40	$0.10	$0.00	$0.00	$46.54	$60.03
CLASS 6	69.40	$29.06	$10.55	$7.00	$0.52	$0.00	$1.40	$0.10	$0.00	$0.00	$48.63	$63.16
CLASS 7	74.40	$31.15	$10.55	$7.00	$0.52	$0.00	$1.40	$0.10	$0.00	$0.00	$50.72	$66.30
CLASS 8	79.42	$33.25	$10.55	$7.00	$0.52	$0.00	$1.40	$0.10	$0.00	$0.00	$52.82	$69.45
CLASS 9	84.40	$35.34	$10.55	$7.00	$0.52	$0.00	$1.40	$0.10	$0.00	$0.00	$54.91	$72.58
CLASS 10	89.40	$37.43	$10.55	$7.00	$0.52	$0.00	$1.40	$0.10	$0.00	$0.00	$57.00	$75.72

Special Calculation Note : $0.10 for Other is National Fire Sprinkler Association

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 # : OCRO1-2019fbBldgHevHwy

Craft : Truck Driver Effective Date : 09/11/2019 Last Posted : 09/11/2019

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 1 4 wheel service, dump, and batch trucks, Oil Distributor - Asphalt Distributor-Tandems	$28.04		$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$43.14	$57.16
Apprentice	**Percent**											
First 6 months	80.00	$22.43	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$37.53	$48.75
7-12 months	85.00	$23.83	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$38.93	$50.85
13-18 months	90.00	$25.24	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$40.34	$52.95
19-24 months	95.00	$26.64	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$41.74	$55.06
25-30 months	100.00	$28.04	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$43.14	$57.16

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

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE,

GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

** Asphalt - Oil spray bar man when operating from cab shall receive $0.20 cents per hour above their Basic Hourly Rate.

Prevailing Wage Rate
Skilled Crafts

Name of Union: Truck Driver Bldg & HevHwy Class 2
Locals 20,40,92,92b,100,175,284,438,377,637,908,957

Change # : LCRO1-2019-fbBldgHevHwy

Craft : Truck Driver Effective Date : 10/16/2019 Last Posted : 10/16/2019

	BHR		Fringe Benefit Payments						Irrevocable Fund		Total PWR	Overtime Rate
			H&W	Pension	App Tr.	Vac.	Annuity	Other	LECET (*)	MISC (*)		
Classification												
Truck Driver CLASS 2 Tractor Trailer-Semi Tractor Trucks-Pole Trailers-Ready Mix Trucks-Fuel Trucks-Asphalt-Oil Spray bar men- 5 Axle & Over - Belly Dumps-End Dumps-Articulated Dump Trucks- Low boys-Heavy duty Equipment(irrespective of load carried) when used exclusively for transportation-Truck Mechanics (when needed)	$28.46		$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$43.56	$57.79
Apprentice	**Percent**											
First 6 months	80.00	$22.77	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$37.87	$49.25
7-12 months	85.00	$24.19	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$39.29	$51.39
13-18 months	90.00	$25.61	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$40.71	$53.52
19-24 months	95.00	$27.04	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$42.14	$55.66
25-30 months	100.00	$28.46	$7.00	$7.90	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$43.56	$57.79

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

Ratio :

3 Journeymen to 1 Apprentice

Jurisdiction (* denotes special jurisdictional note) :

ADAMS, ALLEN, ASHLAND, ASHTABULA, ATHENS, AUGLAIZE, BELMONT, BROWN, BUTLER, CARROLL, CHAMPAIGN, CLARK, CLERMONT, CLINTON, COLUMBIANA, COSHOCTON, CRAWFORD, DARKE, DEFIANCE, DELAWARE, ERIE, FAIRFIELD, FAYETTE, FRANKLIN, FULTON, GALLIA, GREENE,

GUERNSEY, HAMILTON, HANCOCK, HARDIN, HARRISON, HENRY, HIGHLAND, HOCKING, HOLMES, HURON, JACKSON, JEFFERSON, KNOX, LAWRENCE, LICKING, LOGAN, LORAIN, LUCAS, MADISON, MAHONING, MARION, MEDINA, MEIGS, MERCER, MIAMI, MONROE, MONTGOMERY, MORGAN, MORROW, MUSKINGUM, NOBLE, OTTAWA, PAULDING, PERRY, PICKAWAY, PIKE, PORTAGE, PREBLE, PUTNAM, RICHLAND, ROSS, SANDUSKY, SCIOTO, SENECA, SHELBY, STARK, SUMMIT, TRUMBULL, TUSCARAWAS, UNION, VAN WERT, VINTON, WARREN, WASHINGTON, WAYNE, WILLIAMS, WOOD, WYANDOT

Special Jurisdictional Note :

Details :

** Asphalt - Oil spray bar man when operating from cab shall receive $0.20 cents per hour above their Basic Hourly Rate.

PAYROLL SUBMITTALS AND WAGE DETERMINATION

1. PAYROLL SUBMITTALS

Amended House Bill No. 1170 amended Section 4115.99 and enacted Section 4115.071 of the Revised Code to improve detection of violations of Ohio's Prevailing Wage Law. This Law is effective September 26, 1974.

Amended House Bill No. 1171 amended Sections 4115.04 and 411.05 of the Revised Code to require adjustments in the prevailing wage due to new collective bargaining agreements. This law is effective September 26, 1974.

Amended House Bill No. 1171 provided for an escalator in the prevailing wage rate. Each time a new prevailing wage rate is established by the Department of Industrial Relations, then the rate is required to be paid on all ongoing public improvement projects. Contractors shall include these escalators in his bid proposal. There will be no addition to a contractor's contract due to a new prevailing wage rate being provided. Refer to Revised Section 4115.05.

The following wage information shall be furnished to the Department of Administrative Services, Division of Public Works, Office of State Architect and Engineer.

a) Every contractor or subcontractor who is subject to Laws pertaining to the wages and hours on Public Works projects shall, at the beginning of performance under the contract, submit the dates during the life of his contract when payments of wages to employees are to be made.

b) Each contractor or subcontractor, within three weeks after each pay date, shall furnish a certified copy of his complete payroll for each date, exhibiting for each employee paid any wages, the employee's name, current address, social security number, number of hours worked each day during the pay period, the total for each week, his hourly rate of pay, his job classification, fringe payments, and deduction from his wages.

c) The prime contractor shall be responsible for the submission of copies of payrolls of all subcontractors.

d) The payroll submitted shall be executed by the prime contractor or subcontractor or a duly appointed agent thereof and shall recite that the payroll is correct and that the wage rates shown are not less than those required by the contract.

2. SECTION 4115.99 (A) Whoever violates Section 4115.08 or 4115.09 of the Revised Code shall be fined not less than twenty-five dollars or more than five hundred dollars. (B) Whoever violates Section 4115.071, 4115.10, or 4115.11 of the Revised Code shall be fined five hundred dollars for the first offense; for each subsequent offense such person shall be fined one thousand dollars.

3. WAGE DETERMINATION (Obtain wage rates prior to advertising)

The attached pages are Prevailing Rates of Wages as ascertained by the Department of Industrial Relations for this project as provided in Section 4115.03 through 4115.14 of the Ohio Revised Code

EXHIBIT 2

ELECTRONIC DOCUMENT RELEASE FORM

M E M O R A N D U M

To: _____

Subject: City of Wapakoneta, Ohio
Hardin Pike Force Main Replacement
Electronic Document Release
AutoCAD File for Base Drawing
963-7502.004

From: Katie Wambo, P.E. Date: _____

In reference to your request for electronic CAD files for the project, we will provide the requested base drawing electronic file upon your signature below indicating agreement with our electronic document release policy.

These electronic files are provided to you for your convenience and the Owner's Benefit. Because electronic files can deteriorate or be damaged or be modified inadvertently or information from the electronic documents may be presented to you on your system differently than the original because of your software or system setup, these files may not be accurate. Any conclusion or information obtained or derived from such electronic files will be at your sole risk.

Information contained in the electronic documents is for information and reference in connection with this project only. The information is not intended or represented to be suitable for reuse on extensions of the original project or on any other project.

You should perform an acceptance test of the electronic documents immediately and inform us of any problems with the electronic documents. Jones & Henry will not be responsible for providing additional copies of these electronic files to you after 60 days from the date the documents are provided to you.

Additional conditions relative to Use of Documents may be in the Agreement between Jones & Henry and our client and should be reviewed before you attempt to use the documents.

_____ accepts the conditions of the above statement.
(FIRM NAME)

Authorized Signature

_____ _____
DATE

c: Project Distribution via posting to Dropbox

EXHIBIT 3

CITY OF WAPAKONETA
CONTRACT REQUIREMENTS

EVALUATION OF BIDS AND AWARD OF CONTRACT

Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any BIDDER whom it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner may also 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. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful BIDDER.

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.

In evaluating BIDDERS, 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.

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.

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 proposed for those portions of the work in accordance with the Contract Documents.

If the Contract is to be awarded, Owner will award the Contract to the BIDDER whose Bid is lowest and best Bid.

City of Wapakoneta
Engineering Department
102 Perry Street P.O. Box 269
Wapakoneta, Ohio 45895
Phone: (419) 738 - 5596 **lburnfield@wapakoneta.net** **Fax: (419) 738 - 0540**

Building Permit & Zoning Information – www.wapakoneta.net (Ordinances)

DOCUMENTS REQUIRED FOR BIDDING

If the following information is not submitted with bid, the City of Wapakoneta may have the right to consider the bid an incomplete bid.

- Bid Proposal Form
- Tax Requirements for Bidding Form
- Anti-Kickback, Non-Collusion, Drug-Free Workplace, EEO Form, initialed and signed
- Bid Bond
- Personal Property Tax
- Acknowledgement of Addenda (if applicable)
- Legal Evidence of Authority of Signing Officer
- Bidder's Qualifications

CITY OF WAPAKONETA
INCOME TAX DEPARTMENT
701 Parlette Ct
PO Box 269
Wapakoneta, OH 45895-0269
419-738-7342

TO: Bidders on City of Wapakoneta Contracts
FROM: City of Wapakoneta Income Tax Department
RE: Tax Requirements

The City of Wapakoneta Tax Ordinance requires 1.5% tax withholding on all employees working within the city limits.

Therefore, as part of the paperwork required when submitting a bid to the City of Wapakoneta, it will be necessary to complete the information below.

This information will allow our department to provide your company with the proper forms at the appropriate time should you be awarded the contract.

The withholding requirement applies to all companies and their sub-contractors which provide services to the City of Wapakoneta.

Please note: Contractors must be current with their tax obligations to the City of Wapakoneta to be eligible for bidding.

NAME: _____

MAILING ADDRESS: _____

_____

TELEPHONE: _____

SSN OR FID NUMBER: _____

This form must be submitted with bid

ANTI-KICKBACK

The City and Contractor mutually affirm that neither Party has accepted or given any money, fee, commission, credit, gift, gratuity, thing of value, or compensation, of any kind provided, directly or indirectly, from any person to obtain or reward favorable treatment connected with this Contract or connected with a subcontract relating to this Contract._____(initials)

NON-COLLUSION

Contractor affirms that it did not prepare the winning bid resulting in this Contract by colluding with any other bidder. Contractor further affirms that none of its officers, employees, or agents communicated its prices, terms, or conditions to any other person engaged in this type of business before the City opened the bids for this Contract. _____ (initials)

DRUG-FREE WORKPLACE

The Contractor certifies that it complies with the Drug-Free Workplace Act of 1988 as follows:
1. Contractor agrees not to engage in the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance, including prescription drugs, in performing any contract with the City.
2. All organizations covered by the Drug-Free Workplace Act of 1988 are required to provide a drug-free workplace.
3. If the Contractor fails to comply with the drug-free workplace certification, the City may cancel, terminate, or suspend any contract with the Contractor, in whole or in part. Further, the City may declare that the Contractor is ineligible for additional contracts. _____(initials)

EQUAL OPPORTUNITY EMPLOYER

The Contractor certifies that is complies with Non-Discrimination in employment according to the provisions of Section 4112.02 and 153.50 of the Ohio Revised Code shall be followed and which states in part:
"That in the hiring of employees for the performance of work under this contractor, or any contract, no contractor, subcontractor, or any person acting on his behalf, shall, by reason of race, creed, or color, discriminate against any citizen of the state employment of labor or workers who are qualified and available to perform the work to which the contracts relates; that no contractor, subcontractor, nor any person on his behalf shall in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, or color." _____(initials)

_____
Authorized Signature for Business

_____
Printed Name

_____
Name of Business

CONTRACTOR RESPONSIBILITIES

All work corresponding to performance of this contract shall conform to all prevailing wage laws of the State of Ohio. The Contractor for this project shall supply to the City of Wapakoneta the full information of all subcontractors and suppliers on forms furnished by the City.

Non discrimination in employment according to the provisions of section 4112.02 and 153.59 of the Ohio Revised Code shall be followed and which states in part:

"That in the hiring of employees for the performance of work under this contractor, or any contract, no contractor, subcontractor, or any person acting on his behalf, shall, by reason of race, creed, or color, discriminate against any citizen of the state employment of labor or workers who are qualified and available to perform the work to which the contracts relates; that no contractor, subcontractor, nor any person on his behalf shall in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, creed, or color."

The contractor shall provide such safety measures to protect the public health and welfare as provided in the pertinent codes of the State of Ohio. The Contractor shall be held liable for all damages resulting from the use of explosives, mechanical equipment, or any other devices or machinery in the prosecution of the work as well as all damage to lands, all public or private. The Contractor shall be responsible for supplying barricades, cones, flag persons, or any other type of traffic control signs and devices, and signed accordingly with traffic control signs as per the Ohio manual of uniform traffic devices at all walks, streets, alleys, and other type of crossings. The contractor shall insure that proper warning devices are in place and in proper maintenance throughout the course of the construction project.

The Contractor shall give the City of Wapakoneta as least 48 hours advance notice before commencing the construction project. After the work has been started, the Contractor will complete the project by continuous operations on all working days that the City of Wapakoneta determines that work should be progressing. The Contractor shall so notify the City of Wapakoneta 24 hours in advance of any day or days that he does not intend to be performing work on the project.

The Contractor shall assume full responsibility for notifying all utility companies that have equipment such as telephone poles, light poles, electrical lines, waterlines, telephone lines, gas lines, signal equipment, or any other type of public facility within or nearby the construction project as to the time and extent of work he shall be performing which may effect said utilities. Fifteen (15) days notice shall be given to said utilities companies prior to the commencement of work. The Contractor assumes full responsibility for any damages to said utilities as a result of his work.

When or wherever it is necessary for the Contractor to enter upon private property with his equipment, material, or laborers, he shall secure a written release from that property owner with copies made available to the City of Wapakoneta.

The Contractor may utilize the services of specialty sub contractors on those items of work, which, under normal contracting practices, are performed, by those specialty sub contractors. However, the awarded Contractor under contract with the City of Wapakoneta shall assume full responsibility for all work performed by sub contractors, their acts, omissions, or any circumstances relating to the direct or indirect work involvement on the construction project. The Contractor shall provide a knowledgeable representative to be present at the site during all sub-contracted work.

The Contractor shall not award work to sub contractors in excess of fifty percent (50%) of the contract price without written approval of the City of Wapakoneta.

The Contractor will be responsible for the supervision of all work performed on the construction project. He will be solely responsible for the means, method, techniques, sequences, and procedures of construction. The Contractor shall employ and maintain on the job site a qualified supervisor or superintendent whom shall have been designated in writing by the Contractor to the City of Wapakoneta as his representative at the site. The supervisor solely named shall have full authority to act on the behalf of the Contractor and all communications given to the supervisor shall be binding as if given to the Contractor. The supervisor shall be present at the site at all times as required to perform adequate supervision and coordination of all construction work.

The City of Wapakoneta shall be held harmless for any damages to equipment, persons, or property during the construction of this project and shall be the sole responsibility of the Contractor.

It is understood by the City of Wapakoneta and the Contractor that all work is to conform with the Ohio Department of Transportation construction and material specifications as provided by the City of Wapakoneta.

The Contractor shall provide, at the sole expense of the Contractor, all of the necessary testing and inspections services required by the construction specifications. Inspections, test, or approvals by the Project Engineer, Project Inspector, or others shall not relieve the Contractor from obligations to perform the necessary work in accordance with the requirements of the construction specifications.

The City of Wapakoneta shall furnish all boundary surveys and establish all base lines for locating the principle component parts of the work together with a suitable number of benchmarks adjacent to the work as shown in the construction drawings and/or documents. From the information provided by the City of Wapakoneta, unless otherwise specified in the contract documents, the Contractor develops and performs all detail surveys needed for construction such as slope stakes, batter boards, stakes for pipe locations, and other working points, elevations, and cut sheets.

The Contractor shall carefully reserve all bench marks, reference points, and stakes, and in case of willful or careless destruction, shall be charged with the resulting expense to restore said points and stake, and shall also be held responsible for any mistake that may be caused by their unnecessary loss or disturbance.

PRIOR TO FINAL PAYMENT & release of Performance Bond, the Contractor shall supply the City of Wapakoneta, a complete set of "as built" drawings showing all construction as completed & utilities encountered. "As built" plans shall indicate, but not limited to: location, size, depth, type, kind, date, condition, etc. Documentation that all subcontractors, material suppliers, and laborers for labor performed during that pay request time period have been paid. By signing below you are acknowledging this requirement.

The Contractor shall supply all prevailing wage reports, weekly, biweekly, or monthly as agreed upon by the City of Wapakoneta. All prevailing wage reports shall be certified to the City of Wapakoneta prior to the release of final payment.

The Contractor shall name by written letter, the competent person, as per OSHA requirements, to the City of Wapakoneta. Said competent person shall be responsible to maintain safe working conditions at all times. The Contractor shall be liable for all safety conditions, safety training courses, safety equipment, and personnel as relates to this project.

PROJECT MANAGER OR INSPECTOR

For the duration of this project, a project inspector employed by the City of Wapakoneta shall be assigned to oversee the project on the City's behalf. The inspector shall not be responsible for the contractors' safety (contractors responsibility) but shall call to the attention of the competent safety person for the contractor, any safety violation he/she may observe.

The inspector shall perform daily inspections, complete inspection reports, report construction progress & materials installed. The inspector shall supply to the contractor or his representative, a copy of his report.

The contractor shall inform the inspector of any anticipated changes and or problem areas. The contractor shall also keep the inspector up to date as to the work schedules. The inspector shall have a copy of the contractors' progress schedule and he/she shall notify the contractor when the schedule is not being adhered to.

The inspector shall review all pay requests from the contractor prior to being submitted for payment. Any discrepancies shall be addressed.

The Contractor shall supply to the City Inspector the name of the "Competent Safety Person", job foreman, and emergency phone numbers.

PROJECT CHANGE ORDERS

The City of Wapakoneta reserves the right to make changes to the original set of construction plans and specifications at any time before or during the project, whenever a change is deemed necessary by the Safety Service Director, Project Engineer, Project Manager, or Inspector employed by the City of Wapakoneta.

The Project Engineer, Project Manager, or Inspector, may at any time, by issuing a field order, make changes in the details of the work. The Contractor shall proceed with the performance of these changes unless the contractor believes that such field orders entitles him to a change in contract price or time or both. A change order is not effective until the price to be paid for the work and material or both, under the altered or modified contract, has been agreed upon in writing and signed by the appropriate persons. The Contractor shall not execute such changes pending the receipt of an executed change order or further instructions from the City of Wapakoneta.

In case of a conflict between the construction plans and specifications, the specifications shall govern, or as otherwise determined by the City of Wapakoneta. Figured dimensions shall govern over general construction notes.

Any discrepancies found between the construction plans and specifications and site conditions, or any inconsistencies or mis-figures in the plans or specifications shall be immediately reported to the Project Engineer, Project Manager, or Project Inspector in writing. The performance of any work by the Contractor after the discovery of such a discrepancy or conflict, and not reported correctly shall be done at the risk of the Contractor.

Whenever a material, article, or piece of equipment is identified on the construction drawings and specification by reference to a certain brand name, style, or catalog number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality, and function shall be considered as long as its stated specifications meet or exceeds those referenced to in the construction plans and specifications. The Contractor may recommend the substitution of a material, article, or piece of equipment having equal substance and function for those referred to in the stated construction plans and specifications.

PAYMENT TO THE CONTRACTOR

Partial payments for work and or materials performed prior to the completion date can be drawn if written acceptance of such work and or materials is given by the project engineer or inspector employed by the City of Wapakoneta. Prior to the first partial payment estimate, the contractor shall submit construction progress schedules showing the order in which the contractor proposes to carry out the work. Including and expected dates at which the various parts of the contract estimate will be started and completed.

At least ten (10) days before each progress payment is requested (no more than once a month), the contractor shall submit to the project manager or inspector a partial payment estimate completed and signed by the contractor or authorized supervisor which covers the work performed and supplied during the period covered by the partial payment estimate, and supported by such data as the project manager or inspector may require.

If payment is required on the basis of materials and equipment not incorporated within the work, but delivered and suitable stored at or near the project site. The partial payment estimate shall also be accompanied by such supporting data, satisfactory to the City of Wapakoneta title to such materials and equipment and project their interest therein, including applicable insurance.

The project manager or inspector will within ten days (10) after receipt of each submitted partial payment estimate either indicate in writing approval of payment and present the partial payment request to the City of Wapakoneta, or return the partial payment estimate to the contractor indicating in writing the reason for refusal to approve payment. In the latter case, the contractor may make the necessary changes and or corrections and resubmit the partial payment estimate.

The City of Wapakoneta requires all contractors to submit with their pay request #2 and on, documentation that all subcontractors, material suppliers, and laborers for labor performed during that pay request time period have been paid.

The City of Wapakoneta will within thirty (30) days of presentation of the approved partial payment estimate, pay to the contractor said approval partial payment less retainage. The retainage be an amount equal to eight percent (8%) of said partial payment estimate up and until 50% of the total construction project has been completed. At 50% completion or greater further partial payments shall be made infull to the contractor and no additional amounts shall be retained unless the project manager or inspector certifies in writing that he feels the project is not proceeding satisfactory, and amounts previously retained shall not be paid to the contractor.

After 50% completion or any time thereafter and the progress of work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10% of the value of the work completed. Upon substantial completion of work, any amount retained may be paid to the contractor. When the work has been substantially completed, except for work which cannot be completed because of weather conditions,

lack or shortage of materials or other unseen conditions which, in the judgement of the City of Wapakoneta, are valid reasons for non-completion, the City of Wapakoneta may make additional payments, retainage at all times an amount sufficient to cover the estimated costs to complete the work for final acceptance.
Upon completion and final acceptance of the work performed by the contractor, the project manager or inspector shall issue a certificate attached to the final payment request that all work has been accepted under conditions of the original contract documents, construction plan, and specifications. The entire balance found to be due to the contractor including all retained percentages. Except such sums as may be lawfully retained by the City of Wapakoneta, within 30 days of completion and final acceptance of work.

All extra-performance or non-performance shall be added or deducted according to the unit price bid as provided on the original bid proposal, or as otherwise agreed between the contractor and the City of Wapakoneta.

EXHIBIT 4

ODOT Bonding Requirements

ODOT District 7
06/27/18

Bonding Procedures for Right of Way Use Permits

Major Development/Utility Projects (turn lanes, signals, water and sewer line)
Prior to issuing a Right of Way Use Permit, the developer/utility company will be required to submit a **Performance Bond (MR720a)**. A summary sheet listing the construction cost of all items installed within the right of way must be submitted to the District Permits Office with the final project plans. The District Planning and/or Traffic Office will review the estimate for accuracy. The value of the Performance Bond will be determined by the District Permits Office. The initial time frame of the performance bond is a projection to when all work within the right of way is to be completed, final inspection completed and work approved/accepted by ODOT. Should the permittee fail to complete all work within the projected time frame, the permittee shall be responsible for extending the term of the performance bond.

After such time, ODOT will formally release the Performance Bond and the developer/utility will be required to submit a **Maintenance Bond (MR720b)**. The value of the Maintenance Bond will be one half the value of the Performance Bond. The Maintenance Bond will remain in full force until 36 months after the date of approval/acceptance of the work by ODOT. After such time, ODOT will formally release the Maintenance Bond.

Commercial Drives
Prior to issuing a Right of Way Use Permit, the developer/utility company will be required to submit a **Performance Bond (MR720a)**. The value of the performance bond will be $25,000. The initial time frame of the performance bond is a projection to when all work within the right of way is to be completed, final inspection completed and work approved/accepted by ODOT. Should the permittee fail to complete all work within the projected time frame, the permittee shall be responsible for extending the term of the performance bond. After such time, ODOT will formally release the performance bond.

Residential, Minor Drainage, Minor Utility Work, Temporary Construction Access
No bonds are required.

General Bond Requirements
1. The bond must be written in the permittee's and ODOT District 7's name.
2. The bonding company must be recognized as a surety company by the State Insurance board.
3. A faxed copy of the bond should be submitted for review. Upon approval, the bond must be submitted with original signatures and notary stamp.
4. An Irrevocable Letter of Credit is an acceptable alternative to a bond.
5. In order to determine Performance Bond amount, a 20% markup shall be applied to the total of the summary sheet project cost to cover contingencies.

ODOT District 7
Permits
Office of Real Estate
1001 St. Marys Avenue
Sidney, Oh 45365

Notice to Bonding Company

Bond form must have the following forms attached to be properly executed:

1. **A certificate of the Superintendent of Insurance of Ohio, that such surety company is authorized to transact business in this State.**

2. **Power of Attorney of the agent of such company, showing his authority to execute said bond on its behalf.**

3. **A recent financial statement of the surety company.**

M&R 720
rev. 02-17

Bond No._____

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

BOND

Know all persons by these presents, that we, _____ of _____ as Principal, and _____ as Surety, are held and firmly bound unto the Ohio Department of Transportation in the sum of Five Hundred Nineteen Thousand, Two-Hundred Eighty-Eight and 00/ Dollars ($ 519,288.00) lawful money of the United States, for which payment will and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the above bound Principal has been granted or is about to be granted a permit for the below listed work within the Ohio Department of Transportation Right of Way, to wit:

The Construction of a new Sanitary Sewer Force Main for the City of Wapakoneta in the Limited Access Right of Way of State Route 33.

Now, therefore, the Conditions of this Obligation are such that in addition to complying with all applicable laws, rules, regulations, policies and ordinances related to the issuance and coverage of the permit, the above Principal shall indemnify and hold harmless the Ohio Department of Transportation against all loss, costs, expense or damage caused by Principal resulting from the issuance of the above described permit.

The term of this bond is for a period beginning on the _____ day of _____, 20____ and ending* on the _____ day of _____, 20_____.

Signed, sealed and dated this _____ day of _____20_____

Notary Seal

Principal, _____

_____

By_____

Surety, _____

_____

By_____

***Notice to the Permittee and Bonding Agencies:** The initial time frame of this bond is a projection to when all the work within the State's right-of-way is to be completed, final inspection completed and work approved. Should the permittee fail to complete all work within the projected time frame, the permittee shall be responsible to insure this bond remains active. This bond shall be released only by formal written notice by the Ohio Department of Transportation.

DOT-2083

SECTION 01010
DEFINITION OF CONTRACT ITEMS

ITEM 0 GENERAL

0.01 FOREWORD

A. This Section describes the various Contract Items listed in the Bid.

0.02 WORK INCLUDED

A. Under each Item the Contractor shall furnish all labor, materials, tools, plant equipment, supplies, maintenance of equipment, heating, lighting and power, insurance and bonds, coordination, and all Work and in accordance with the Specifications Parts A, B, and Divisions 1 through 16 of Part C and necessary to complete the Work in accordance with the obvious or expressed intent of the Contract Documents.

B. The removal and proper disposal of debris generated by work under each Item shall be included in that corresponding Item.

0.03 WORKMANSHIP AND MATERIALS

A. The quality of workmanship and materials entering into any and all of the Items and the Work included shall conform to pertinent sections, paragraphs, sentences, and clauses, both directly and indirectly applicable thereto, contained in the Contract Documents, whether or not direct reference to such occurs under each Item in this Section.

0.04 PAYMENT

A. The lump sum and unit prices stated in the Bid shall be payment in full for the completion of all Work specified and described or required to be included in the Contract, complete, and ready for use.

0.05 CONTRACT ITEMS

A. The contract items are defined on the following pages.

B. The alternate bid items are identified by the suffix -alt on the bid form. Alternate Bid Items shall be measured and paid in accordance with their corresponding Base Bid Item number. The Owner may award the Alternate Bid Items at the Owner’s discretion and contingent upon available funding for the work.

ITEM 1
MOBILIZATION AND DEMOBILIZATION

1.01 DESCRIPTION

A. This Item is intended to pay non-recurring cost to the Contractor not recovered under other pay Items of the Contract.

B. This Item shall include, but not be limited to, the cost for moving equipment in and out, performance and payment bonds, insurance, permits, utility connection cost, and other expenses associated with preparation for construction in accordance with the requirements of the Contract Documents.

C. This item in intended to be in accordance with the Supplemental Conditions 15.01A.

1.02 WORK NOT INCLUDED

A. Any Work specifically included under other Bid Items.

1.03 DEFINITION OF ITEM

A. Item 1 - Mobilization and Demobilization.

1.04 MEASUREMENT

A. The lump sum stated in the Bid shall be full compensation for all Work required under Item 1.

B. The Contractor is reminded of the requirements of Supplemental Conditions Section 15.01.A regarding Mobilization and Demobilization costs as a percentage of the total project cost.

1.05 PAYMENT

A. Payment shall be in accordance with Supplemental Conditions SC 15.01A The Engineer may reduce the amount to be paid under Item 1 if the percentage requested is not represented by the actual amount performed.

ITEM 2
PRESSURE PIPE

2.01 DESCRIPTION

A. These Items shall include all work to install the new pressure pipe sanitary sewer force main, including but not limited to the following: excavation; backfill; special backfill; compaction; bedding; pipe materials; fittings; maintenance of trenches; temporary pavement; and related work and materials performing pressure tests as shown on the Drawings and specified in conformance with relevant Sections of the Specifications.

B. These Items shall also include all work under the Contract unless specifically included for payment under other Items including all incidental removal and replacement of existing features such as signs, mailboxes, fences and landscaping impacted by the work.

C. These Items shall include all pressure pipe fittings, accessories and appurtenances not included in other pay items. Fittings, including those not shown on the plans required to avoid existing utilities shall be included under these Items.

D. All work required to Abandon valves is included under these Items.

E. The furnishing and placing of special backfill up to the bottom of the pavement cross section or specified materials in areas specified under Section 02200 is included under these Items.

F. These Items shall also include connections to existing manholes sewers and force mains including the removal of concrete or steel encasements.

G. The coring of existing manholes and pipes as needed to accommodate new connections is included under these Items.

H. All Work required to dewater trenches and excavation is included under these Items.

I. All storm water pollution prevention is included under these Items.

J. Temporary supporting existing utilities, locating of existing utilities, exploratory excavation and backfill required by the utility owner for existing utilities encountered during sewer construction is included under these Items.

K. All repairs of existing utilities damaged, as a result of construction, are included under these Items. The repair of drainage pipes crossing the proposed pipes shall be considered incidental to these Items and is not specifically intended to be paid by these Items.

L. Includes all storm water pollution prevention included under these Items.

M. Restoration of landscape surface improvements including seeding, mulching, and fertilizing all disturbed lawn areas shall be included under these Items.

2.02 WORK NOT INCLUDED

A. Pavement replacement within Contract limits is included for payment under other Items.

B. Aggregate base course material for pavement repairs is included in other Items.

2.03 DEFINITION OF ITEMS

A. Item 2a - 16-inch Force Main, Type B.

B. Item 2b - 16-inch Force Main, Type C.

C. Item 2c – 16-inch Force Main Type ODOT7

D. Item 2d –16-inch Force Main in 30-inch Bored Casing.

E. Item 2e - Force Main Removed.

F. Item 2f – Force Main Plug.

G. Item 2g – Connection to Existing Force Main.

2.04 MEASUREMENT & PAYMENT

A. The quantities to be paid under Items 2a through 2d shall be horizontal length of pipe, measured parallel to the axis of the line along the surface of the ground.

B. The quantities to be paid under Item 2e shall be the horizontal length of pipe removed, measured parallel to the axis of the line along the surface of the ground.

C. The quantities to be paid for under Items 2f & 2g shall be for each connection to existing sewer manhole and each force main abandoned.

D. No deduction will be made for valves on lines of the same size. Where branches or lines of different diameters are joined, they will be measured to the center point of transition fittings.

ITEM 3
MANHOLE STRUCTURES

3.01 DESCRIPTION

A. Under these Items, the Contractor shall furnish and install the valves and accessories as shown on the Drawings and specified in conformance with relevant Sections of the Specifications.

B. Valve boxes, valve extensions and manhole structures, valves and piping as required or shown on the Drawings shall be included under these items.

C. The furnishing and placing of special backfill in areas specified under Section 02200 is included under these Items.

D. The 8-inch plug valve and piping required for the bypass shall be included in the Item for the bypass structure.

E. The removal of the existing bypass connection is included under these Items.

3.02 WORK NOT INCLUDED

A. Pavement replacement within Contract limits is included for payment under other Items.

3.03 DEFINITION OF ITEMS

A. Item 3a –Bypass Structure.

B. Item 3b – Air Release Valve Manhole Structure

3.04 MEASUREMENT & PAYMENT

A. The quantities to be paid under Item 3a & 3b shall be full compensation for each of the Bypass Structure and Air Release Valve Manhole Structure provided in accordance with the Specifications and Drawings.

ITEM 4
FLEXIBLE PAVEMENT REPAIR

4.01 DESCRIPTION

A. Under these Items, the Contractor shall construct aggregate base, flexible pavement base and surface courses to replace pavement removed for pipeline construction as scheduled, shown on the Drawings and specified herein.

B. The removal of existing pavement including flexible or rigid pavement roadway base, intermediate or surface courses is included in these Items.

C. The preparation of subgrade material prior to the placement of roadway base is included in these Item.

D. The provision of the specified compaction testing is included in these Items.

E. Bonding coats of prime or tack coats as specified are included in these Items.

F. The provision of temporary pavement to maintain traffic is included in these Items.

4.02 WORK NOT INCLUDED

A. Pavement replacement required beyond specified pay limits for construction of manholes and chambers is included for payment under other Items.

B. The removal of pavement is included under other items.

4.03 DEFINITION OF ITEMS

A. Item 4a – Flexible Pavement Trench Repair

B. Item 4b – Gravel Driveway Repair

4.04 MEASUREMENT

A. Quantities to be paid for under this Item shall be the actual quantity constructed, measured in place within the limits as defined below, and scheduled on the Drawings, unless otherwise authorized by the Engineer; in which case, measurement will be made to the authorized limits. When uniform courses are specified, the volume to be paid for shall not exceed the quantity calculated from plan lines and dimensions. Bituminous materials will be measured in gallons at 60-degrees F applied at the specified rates and within the pay limits.

B. Pay Limits:

1. Depth - As specified, scheduled, or directed by the Engineer. To differentiate from special backfill material provided to backfill pipes and appurtenance excavations, aggregate base shall only be measured for the thickness shown on the Drawings or directed by the Engineer.

2. Length - The actual length measured.

3. Width:

a. Except as otherwise scheduled on the Drawings, the width of replacement over pipe trenches shall not exceed the nominal diameter of the pipe plus 2-1/2 feet on each side for trench depths of 16 feet and less; and 4 feet on each side for trench depths greater than 16 feet. No additional width will be allowed for precast manholes or manhole chamber construction.

4. Trench depth as used herein shall mean the distance from the original surface of the pavement to the invert grade of the main line pipe.

4.05 PAYMENT

A. The unit prices stated in the Bid for Item 4a shall be full compensation for each square yard of roadway repaired with flexible pavement including all specified pavement materials down to the bottom of the aggregate base course and with lift thickness specified, so measured.

B. The unit price stated in the Bid for Item 4b shall be full compensation for each square yard of gravel driveway repair

ITEM 5
VIDEO RECORDING

5.01 DESCRIPTION

A. Under this Item, the Contractor shall produce and deliver to the Owner, color video recordings of existing topography within the zone of influence along all sewer routes and video recordings of designated buildings and dwellings as specified and directed.

5.02 DEFINITION OF ITEM

B. Item 5 - Video Recording of the Zone of Influence.

5.03 MEASUREMENT & PAYMENT

C. The quantities to be paid for under Item 5 shall be a lump sum for video recording of the defined zone of influence along specified routes.

ITEM 6
MAINTENANCE OF TRAFFIC

6.01 DESCRIPTION

A. This Item shall include the furnishing and maintaining of measures required to maintain traffic through or around the proposed work.

B. This Item shall include detour routes as specified in the Contract Documents.

6.02 DEFINITION OF ITEM

A. Item 6 - Maintenance of Traffic.

6.03 MEASUREMENT & PAYMENT

A. The quantities to be paid for under Item 6 shall be lump sum for all maintenance of traffic measures provided in accordance with the Specifications and Drawings.

ITEM 7
FENCE MODIFICATIONS

7.01 DESCRIPTION

A. Under these Items, the Contractor shall furnish and install the fencing and accessories as shown on the Drawings and specified in conformance with relevant Sections of the Specifications.

B. This Item shall include all the materials, equipment, labor, and supervision necessary for the installation of new fencing as shown on the Drawings and to replace fencing damaged during construction in accordance with the Contract Documents.

C. This Item shall include the fence fabric, fence posts and rails, all accessories, gates, aggregate maintenance strip, barbed wire, and concrete footings as shown on the drawings and specified in conformance with relevant Sections of the Specifications.

7.02 DEFINITION OF ITEM

A. Item 7 – Fence Modifications.

7.03 MEASUREMENT & PAYMENT

A. The quantities to be paid for under Item 7 shall be linear foot of fence including gates installed provided in accordance with the Specifications and Drawings.

ITEM 8
PUMP STATION PIPING MODIFICATIONS

8.01 DESCRIPTION

A. Under these Items, the Contractor shall furnish and install all piping modifications in the valve vault as shown on the Drawings and specified in conformance with relevant Sections of the Specifications.

B. This Item shall include all the materials, equipment, labor, and supervision necessary for the installation of new piping as shown on the Drawings in accordance with the Contract Documents.

C. This Item shall include the demolition of the existing pipe, structural modifications to the valve vault, pipe supports, and relocation of the existing flow meter as shown on the drawings and specified in conformance with relevant Sections of the Specifications.

8.02 DEFINITION OF ITEM

A. Item 8 – Pump Station Piping Modifications.

8.03 MEASUREMENT & PAYMENT

A. The quantities to be paid for under Item 8 shall be lump sum provided in accordance with the Specifications and Drawings.

END OF SECTION

SECTION 01043
COORDINATION AND CONTROL OF THE WORK

PART 1 GENERAL

1.01 SCOPE

A. This section includes coordination and control of the Work.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. Bypass Pumping plan and procedures.

b. Haul routes to and from Site.

c. Plan and procedures for any shut downs and bypass pumping.

d. Coordination drawings shall include, but not be limited to, all process piping including, but not limited to, bill of material, laying length, embedded conduit runs, and embedded plumbing lines.

1.03 LINES AND GRADES

A. All Work under this Contract shall be built in accordance with the lines and grades shown on the Drawings or as altered or modified by authority of the Owner and Engineer.

1.04 EXISTING STRUCTURES SHOWN ON DRAWINGS

A. Where underground and surface structures are shown on the Drawings, the location, depth, and dimensions of such structures are believed to be reasonably correct but are not guaranteed.

B. Such structures are shown for the information of the Contractor, but information so given is not to be construed as a representation that such structures will in all cases be found or encountered just where shown, or that they represent all the structures which may be encountered.

1.05 COOPERATION OF CONTRACTOR

A. The Contractor shall conduct his operations so as to interfere as little as possible with those of the Owner, other contractors, utilities, or any public authority on or near the Work.

B. The Owner reserves the right to perform other Work by contract or otherwise, and to permit other public bodies, public utility companies, and others to do Work on or near the project during progress of the Work. If a conflict arises, the Owner will determine when and how the Work shall proceed.

C. Claims for delay or inconvenience due to operations of such other parties on Work specified, shown on the Drawings, as directed or which can be reasonably expected to be encountered by the nature and location of the Work will not be considered.

D. Operations entailing the use of construction equipment and lights outside the hours or 7:00 am and 5:00 pm or outside the hours allowed for construction by local ordinances or regulations.

E. Closing off clear access to any public alley, street, road, avenue or boulevard without the prior consent of municipal officials and the Engineer is prohibited.

F. Contractor and subcontractors are required under Ohio Revised Code Section 149.53 to Notify the Ohio Historical society and the Ohio Historic Site Preservation Board of archeological discoveries located in the project area and to cooperate with these entities in archeological and historical surveys.

1.06 MAINTENANCE OF SANITARY SYSTEM DURING CONSTRUCTION

A. All construction which requires interruption of existing sanitary system flow shall be executed during periods designated by the Owner.

B. Bypassing of untreated sanitary wastewater to any stream or body of water is prohibited.

1.07 PERMANENT PAVEMENT AND FINAL RESTORATION

A. When construction is being done between April 15 and November 15, the final pavement restoration work shall be completed by November 15. When work is being performed between November 15 and April 15, temporary pavement as specified shall be provided. Final restoration of paved areas shall be completed within 30 days of the opening of asphalt plants for the season. The dates listed are intended to loosely define the period of operation of asphalt plants. Concrete pavement construction may continue beyond the dates listed with proper thermal protection as approved by the Owner.

B. Pavement restoration shall include, but not limited to, replacement of pavement, driveways, and sidewalks.

C. The fine grading, topsoil, and seeding operation shall be completed within 30 days of pavement restoration, unless weather conditions prevent such work from being completed.

D. If at any time the pavement restoration and the fine grading, topsoil, and seeding operation does not meet the above conditions, no further mainline pipe construction will be permitted until the Contractor has completed restoration work to the satisfaction of the Engineer and Owner.

E. In order to comply with the above conditions, the Contractor shall complete the pipeline and all appurtenances including, but not limited to, testing, in order to begin final pavement restoration and the fine grading, topsoil, and seeding operation.

1.08 TEMPORARY PAVEMENT RESTORATION

A. The Contractor shall provide and maintain temporary pavement for all roads in which construction occurs. Temporary pavement shall be in accordance with Section 01565 and as shown on the drawings.

1.09 TEMPORARY STAGING AND PARKING FACILITIES

A. No parking or staging area has been identified for this Work. The Contractor is expected to locate and obtain permission from private property owners for construction staging and parking.

B. Parking spaces for the Contractor's personnel shall be provided and maintained in usable condition by the Contractor at all times. Provisions shall be made so that sediment is not tracked onto paved roadways from the vehicles operated by the Contractor's personnel.

1.10 TEMPORARY WATER, HEATING, LIGHTING AND POWER

A. The Contractor shall provide all water, heat, lighting, and power required to construct and protect the Work until Final Completion.

B. The source for temporary power shall be from the electric utility or portable power source.

C. The source for temporary water can be from the District. The District shall furnish a meter and all backflow prevention devices with a deposit paid by the Contractor.

D. There will be no charge for water used for the work and for the initial filling of the force main for testing.

E. The installation for electric power shall meet the requirements of federal, state, and local authorities and regulatory agencies.

1.11 DISPOSAL OF DEBRIS

A. All debris resulting from construction operations, i.e., packaging, waste materials, damaged equipment, etc., shall be removed from the Site by the Contractor and disposed of at spoil sites.

B. The Contractor shall police the hauling of debris to ensure that all spillage from haul trucks is promptly and completely removed from public or private rights-of-way.

C. All debris shall be disposed of in accordance with federal, state, and local laws and regulations.

1.12 CONTROL OF NOISE

A. The Contractor shall eliminate noise to as great an extent as possible at all times. Air compressors shall be equipped with silencers and the exhaust of all gasoline motors and other power equipment shall be provided with mufflers

B. The Contractor shall require strict observances of all pertinent ordinances and regulations.

1.13 DUST DEBRIS AND SMOKE PREVENTION

A. Strict compliance with all ordinances regulating the production and emission of smoke will be required.

B. Contractor shall control debris and dust in accordance with Section 01568.

C. The Owner may require additional dust control measures during dry weather.

D. The Contractor shall accept full responsibility for all damage that may occur to property as a result of negligence in providing required control.

1.14 SANITARY REGULATIONS

A. The Contractor shall provide all necessary housing accommodations for the workers for changing clothes and for protection during inclement weather. Toilet accommodations shall also be maintained for the use of the employees on the Work. The accommodations shall be in approved locations, properly screened from public observance and shall be maintained in a strictly sanitary manner.

B. The Contractor shall obey and enforce all other sanitary regulations and orders; shall take precautions against infectious diseases and the spread of same; and shall maintain at all times satisfactory sanitary conditions around all shanties, tool and supply houses, and on all other parts of the Work.

1.15 USE OF EXPLOSIVES

A. The use of explosives on this project is prohibited.

1.16 EMERGENCY MAINTENANCE SUPERVISOR

A. The Contractor shall submit to the Engineer the names, addresses, and telephone numbers of two employees responsible for performing emergency maintenance and repairs when the Contractor is not working, See GC 2.04 and 7.01. These employees shall be designated in writing by the Contractor to act as his representative and shall have full authority to act on his behalf.

B. Contractor shall post at job Site, in a conspicuous location, the emergency numbers for the project.

C. Contractor shall be responsible for contacting the local fire, police, and emergency response personnel and organizations in advance of the Work. The Contractor shall be

responsible for the coordination and compliance with emergency response plans, whether developed by the governing agency, laws, or the Contractor for the project.

D. At least one of the designated employees shall be available for a telephone call any time an emergency arises.

1.17 PUBLIC SERVICE STRUCTURES

A. Public service structures shall be understood to include all poles, tracks, pipes, wires, conduits, house-service connections, vaults, manholes, and other appurtenances, whether owned or controlled by the Owner or other public bodies or by privately-owned corporations, used to supply the public with transportation, heating, electric, telephone, gas, water, sewer, or other services.

B. At least a week in advance of breaking ground, the Contractor shall notify the registered underground protection service, all public bodies, and other owners of such facilities of the proposed location of his operations, advising them that their property may be affected and that such measures as they may deem necessary should be promptly taken to protect, adjust, remove, or build them.

C. In developed residential and commercial areas, the Contractor shall assume each building and dwelling has water and sewer services and that they shall be protected and repaired as needed as part of the pipeline installation. No additional payment will be made for Work associated with supporting or repairs of such services.

D. Three conditions which may be encountered will be dealt with as follows:

1. Structures which are adjacent to but not included within the limits of an excavation required for performance of the Work shall be protected, supported, and maintained in service by the Contractor at his expense.

2. Structures within the limits of the Work which can be satisfactorily supported and maintained in service and which do not require removal and rebuilding in the judgment of the Engineer shall be thus supported by the Contractor at his expense, including cost of repair of damage incident to his operations.

a. Supports for water and gas mains, sewers, conduits, and similar structures shall be constructed of timber or other acceptable materials; shall be supported from undisturbed foundations, and shall be sufficiently substantial to ensure against settlement when pipe trenches or other excavations are backfilled. In all cases where permits or inspection fees are required by utilities in connection with changes to or temporary support of their conduits, the Contractor shall secure such permits and pay all permit and inspection fees.

b. The Contractor shall assume full responsibility for maintaining all public service structures in service and shall support and protect, or remove and rebuild them at his own expense. Such services shall not be interrupted without permission of the owner of the public service structure.

3. In case relocation of pipelines or other utility structures is required because of direct interference, as determined jointly by the Owner, Engineer, and Contractor, with the installation of the Work, the Contractor shall notify the Owners of the utility structure involved.

   a. The Contractor will not be reimbursed for the cost of the relocation if the interference is shown on the Drawings, described in the Specifications, apparent on visual inspection, or specifically included in the Work to be performed by the Contractor.

   b. The Contractor will not be paid for time lost because of such direct interference. Where it is the policy of any utility owner to perform such Work with his own forces, the Contractor shall cooperate to the fullest extent with such utility owner.

1.18 UNAUTHORIZED WORK

A. Work done beyond the lines shown on the Drawings or ordered, Work done without required inspection, except as herein provided, or any extra work done without authority will be considered as unauthorized and will not be paid for under the provisions of the Contract. Work so done may be ordered removed at the Contractor's expense.

B. Work completed not in accordance to the lines and grades given in the Drawings shall be considered as unauthorized and subject to rejection.

1.19 DRAINING OF TANKS AND PIPELINES

A. Unless otherwise indicated, tanks, pipelines, and other similar structures that are to be removed from service, to complete the Work will be initially drained by the Owner.

B. Draining will be by gravity or by a permanently installed pump, if available.

C. After the tank has been drained by the Owner to the lowest level possible with existing means for drainage, the Contractor shall remove and dispose of remaining liquid and accumulated solids, as required to complete the Work.

D. Additional requirements for tanks (wet wells) and pipelines are included in Part 4 of this Section.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

PART 4 SPECIAL PROVISIONS

4.01 POTENTIALLY HAZARDOUS ENVIRONMENT

A. The environment in portions of the Site is rated as Class I Division 1 or 2 or some areas of the Site are designated as permitted Confined Spaces. As a minimum, whenever the Contractor is performing Work in these areas, the Contractor shall provide Factory Mutual- and UL-approved continuous monitoring of the atmosphere for the presence of hydrogen sulfides, of low oxygen concentration, and of explosive gases (both lighter and heavier than air).

B. The Contractor shall evacuate all personnel from the areas whenever the detection system registers hydrogen sulfide levels of greater than 20 ppm, oxygen levels less than 19.5% or combustible gas levels of greater than 10% of the LEL.

C. In addition, whenever the Contractor is using tools producing open flames or sparks, such as cutting torches, saws, and grinders, the Contractor shall provide for the forced air exhaust ducted from the immediate area of the Work.

4.02 MAINTAINING FLOW IN EXISTING SEWERS

A. Flow in existing storm, sanitary and private sewers shall be maintained at all times during construction of this project. The Contractor shall furnish and install all necessary temporary facilities required to maintain the flow in existing sewers including bulkheads, plugs, stop planks, flumes, coffer dams, pumping equipment, valves, etc.

B. Bypass pumping is not planned under the sequence of construction provided below. Should the Contractor wish to use bypass pumping, the Engineer can provide the operational parameters required.

4.03 SEQUENCE OF CONSTRUCTION

A. The following is a suggested sequence of construction to complete the pump station improvements while maintaining reliable pumping capabilities.

B. The Contractor may modify this sequence but will still be responsible for meeting the contract complete dates outline in the Contract.

C. During construction of the force main, one lane of traffic should be open at all times on Canning Factory Road.

1. Field verify depth of gas transmission main at Sta 15+50, 48-inch storm at station 23+50, and 20-inch watermain at Canning Factory Road and on the pump station site where the new force main is to cross these utilities.
2. Construct and test the new force main include air release valves from the pump station to near the stub provided Ashland Avenue.
3. Construct new bypass structure.
4. Core new hole in valve wall chamber to accommodate new pipe penetration.

5. The following work will be performed as part of an 8-hour shut down of the pump station. No bypass pumping is planned for this operation and the work should be scheduled with the Owner for a period of low flow and dry weather.
   a. Modify piping in the valve chamber.
   b. Connect new force main discharge piping to the new force main at the pump station site.
   c. Connect the new force main outlet to the stub provided at Manhole 1.5-1 located at Ashland Avenue.
6. Abandon the existing 10-inch force main.
7. Complete final site work and restoration.

END OF SECTION

SECTION 01090
REFERENCE STANDARDS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes reference standards.

1.02 DESIGNATION OF ASSOCIATIONS, INSTITUTIONS, SOCIETIES AND STANDARDS

A. Whenever in these Specifications reference is made to Associations, Institutions, Societies, or Standards, they will be designated as follows:

AA	-	Aluminum Association
AAMA	-	Architectural Aluminum Manufacturers Association
AASHTO	-	American Association of State Highway and Transportation Officials
ACI	-	American Concrete Institute
ADAAG	-	Americans with Disabilities Act Accessibility Guidelines
AFBMA	-	Anti-Friction Bearing Manufacturers Association
AFI	-	Air Filter Institute
AGA	-	American Gas Association
AGMA	-	American Gear Manufacturers Association
AIHA	-	American Industrial Hygiene Association
AISC	-	American Institute of Steel Construction
AISI	-	American Iron & Steel Institute
AITC	-	American Institute of Timber Construction
AMCA	-	Air Moving and Conditioning Association
ANSI	-	American National Standards Institute
API	-	American Petroleum Institute
ARI	-	Air Conditioning and Refrigeration Institute
ASA	-	American Standards Association
ASHRAE	-	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	-	American Society of Mechanical Engineers
ASTM	-	American Society for Testing Materials
AWPB	-	American Wood Preservers Bureau
AWS	-	American Welding Society
AWWA	-	American Water Works Association
BLS	-	Bureau of Labor Standards
CISPI	-	Cast Iron Soil Pipe Institute
FM	-	Factory Mutual
FS	-	Federal Specifications
IBR	-	Institute of Boiler and Radiator Manufacturers
IEEE	-	Institute of Electrical and Electronic Engineers

INETA	-	International Electrical Testing Association
ISA	-	Instrument Society of America
JIC	-	Joint Industrial Council
ODOT	-	Ohio Department of Transportation
NBS	-	National Bureau of Standards
NEC	-	National Electrical Code
NEMA	-	National Electrical Manufacturers Association
NFPA	-	National Fire Protection Association
NICET	-	National Institute for Certification in Engineering Technologies
NSF	-	National Sanitation Foundation
NRTL	-	Nationally Recognized Testing Laboratory
OSHA	-	Occupational Safety and Health Act
SMACNA	-	Sheet Metal and Air Conditioning Contractors National Association, Inc.
SSPC	-	Steel Structures Painting Council
OBC	-	Ohio Building Code
IBC	-	International Building Code
UBC	-	Uniform Building Code
UL	-	Underwriters Laboratories, Inc.
USBM	-	United States Bureau of Mines

B. Wherever specific standard numbers are indicated, i.e., ASTM C150, it shall be understood to mean the latest revision thereof.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes requirements for submittals.

B. Contractor shall adhere to the submittal schedule as submitted under the provisions of the General Conditions. Contractor shall modify the schedule as required to allow sufficient time for submittal review based on current construction schedule.

C. Owner, Contractor and Engineer shall utilize the electronic project management system EPMS as specified in Section 01320 for the central repository of project related documents including but not limited to submittals, information for the record and Operation and maintenance manuals.

1.02 COORDINATION OF SUBMITTALS

A. The Contractor shall be responsible for the coordination of submittals and field verifications as required for the various parts of the Work.

B. All submittals to the Engineer, unless otherwise specified, shall be made only by the Contractor. Direct submittals from subcontractors or suppliers will not be accepted.

C. All submittals shall reference the Specification item that it covers, the Contractor's name, the Contract title and location, and the date of submission. Submittal shall also indicate whether the information is for the Engineer's review and approval, for record purposes, or for the fulfillment of the operation and maintenance requirements.

PART 2 PRODUCTS

2.01 GENERAL

A. Two categories of information are normally required:

1. Shop Drawings for review.
2. Information for Record:
   a. Operation and maintenance manuals.

2.02 SHOP DRAWINGS FOR REVIEW

A. Shop Drawings:

1. The Contractor shall submit Shop Drawings in accordance with the General Conditions, as required by individual Sections, shown on the Drawings or as directed.

2. The Contractor shall indicate all variances from the requirements of the Contract Documents in accordance with the General Conditions.

3. The Contractor shall clearly indicate quantities and the exact intended use of the equipment or material contained in the submittal.

4. All Submittals shall be tailored to the project by high-lighting appropriate information and deleting or crossing out nonapplicable information or where applicable the Contractor shall provide a data sheet with all necessary information to correctly identify the applicable Sections of the manuals for the actual material or equipment furnished. All options furnished shall be indicated.

5. Color charts or samples shall be included for all submittals where a color selection by the Owner is required. Original Color Charts (not Color Copies) and samples shall be delivered to the Site, Engineer's RPR or Owner as required. The Engineer shall be copied on the transmittal letter for record purposes.

B. Samples shall be provided as required in the individual Sections. Samples shall be of the precise material proposed to be furnished. The number of samples and sample size shall be the industry standard unless otherwise stated in the individual Sections.

2.03 INFORMATION FOR RECORD

A. Material certificates shall be submitted for materials as indicated in the individual Sections. The certificate shall state that the products have been sampled and tested in accordance with the proper industrial and governmental standards and meet the requirements of the Specifications. Certificates shall be signed by an authorized agent of the manufacturer.

B. Licenses and Permits - The Contractor shall submit copies of all licenses and permits required by Local, State, and Federal laws.

C. Installation and calibration certificates shall be submitted for equipment as indicated in the individual Sections. These certificates shall indicate manufacturer's satisfaction with the installation, the accuracy of calibration and alignment, and the operation of the equipment. Such certificates must be signed by an authorized agent of the manufacturer.

D. Progress Schedules shall be submitted in accordance with the General Conditions and Section 01310.

E. Schedule of Shop Drawings and Sample Submittals shall be submitted in accordance with the General Conditions.

F. Schedule of Values shall be submitted in accordance with the General Conditions.

G. Copy of programming for all PLC's and computers on the project.

2.04 OPERATION AND MAINTENANCE INFORMATION

A. Operation and maintenance manuals shall be submitted as information for the record.

B. Operation and maintenance manuals shall be submitted as electronic documents prior to the printing of the record copy.

1. Contractor shall provide one electronic copy of the manuals for preliminary review.

2. The final accepted manuals shall be provided as one electronic copy of the manual and one printed copy as specified below.

C. Electronic manuals shall be in Portable Document Format

D. This information will be reviewed only if properly identified with Specification Section numbers and only after revised, where necessary, to conform to the Engineer's notes on previous submittals that have been marked "Make Corrections Noted." Manuals shall be tailored to suit the specific equipment provided.

E. Submittals shall include but not limited to the following:

1. Descriptive literature, bulletins, or other data covering equipment or system.

2. Complete list of equipment and appurtenances included with system, complete with manufacturer serial number and model number.

3. Utility requirements.

4. General arrangement drawing.

5. Sectional assembly.

6. Dimension print.

7. Materials of construction.

8. Certified performance curve.

9. Parts list with assembly drawings.

10. Recommended spare parts list with part and catalog number.

11. Lubrication recommendations and instructions.

12. Schematic wiring diagrams.

13. Schematic piping diagrams.

14. Description of associated instrumentation.

15. Drive dimensions and data.

16. Operating instructions.

17. Maintenance instructions including trouble-shooting guidelines, lubrication, and preventive maintenance instructions with task schedule.

18. Special tools and equipment required for operation and maintenance.

19. Description of equipment controls.

20. Pump seal data.

21. Assembly, installation, alignment, adjustment, and checking instructions.

22. Confirmation of all corrections noted on Shop Drawings marked “Make Corrections Noted.”
23. Manufacturer’s name, address, and telephone number along with manufacturers job number and Purchase Order number.
24. Manufacturer’s local sales representative, address, telephone number.
25. All installation instructions that were provided to Contractor for use to install equipment.

F. All manuals shall be tailored to the project by high-lighting appropriate information and deleting or crossing out nonapplicable information or the Contractor shall provide a data sheet with all necessary information to correctly identify the applicable Sections of the manuals for the actual equipment furnished. All options furnished shall be indicated.

G. Manuals shall be provided electronically. All manuals shall have a title label on the cover stating the specification item number and item name. A table of contents shall be included in all manuals.

H. Equipment installations shall not be considered substantially complete until all associated operation and maintenance manual submittals are accepted by the Engineer.

I. Field modifications to equipment during installation shall be included in the manual so that the manual reflects as-built conditions. Revisions to the manual may be submitted for incorporation into the manual where appropriate. However, the Engineer reserves the right to return all six manuals for revision to reflect as-built conditions.

PART 3 EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS

A. All submittals shall have a Submittal Identification & Approval cover sheet attached. A sample of the submittal cover sheet is attached for reference. The form will be provided by Engineer and coordinated with Contractor.

B. All submittals shall be given a consecutive number when they are entered into the Electronic Project Management System (EPMS), See Section 01320.

C. Resubmittals shall be entered into EPMS as resubmittals.

D. Submittals to satisfy the operation and maintenance information requirements shall be entered into the EPMS as a submittal. The description shall have the prefix “OM”.

3.02 PRINTING AND DISTRIBUTION

A. No printed documents are required.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

Submittal Identification & Approval

Date:

Spec Section

Submittal No.

Drawing Sheet No.

Description:

Manufacturer(s)

Contractor Comments/Deviations/Measurements

Contractor

Contractor Name

- ☐ Approved
- ☐ Forwarded
- ☐ Checked

By: _____ Date: _____

Engineer

SHOP DRAWING REVIEW
SUBJECT TO CONTRACT REQUIREMENTS

Jones & Henry Engineers, Ltd.

- ☐ Approved
- ☐ Approved—Make Corrections Noted
- ☐ Amend & Resubmit
- ☐ Rejected—See Remarks
- ☐ Distribute for Information

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

Approval in no way relieves the Contractor of any responsibility for capacities, performance, functions, compliance with Federal, State, and Local Codes; accuracy of dimensions and details; or continuity and completeness of the Project nor does approval constitute or imply any increase in Contract Price.

By: _____

Review Comments

Sample

SECTION 01310
CONSTRUCTION SCHEDULES AND DOCUMENTATION

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the requirements for construction schedules and construction sequences.

B. This Section includes the requirements for the tracking and documentation of the progress and activities driving the completion of the Work as specified, shown on the Drawings and as directed.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. Preliminary Construction Schedule.

b. Contractor's Construction Schedule and monthly updates.

c. Submittals Schedule.

B. Contractor shall submit construction schedule on the EPMS.

1.03 QUALITY ASSURANCE

A. Scheduling conference shall be held prior to the commencement of the construction to discuss the following including, but not limited to:

1. Construction sequencing.
2. Contractor's coordination of subcontractors.
3. Coordination with the Owner's operations.
4. Coordination with other Contractor's or other Work.
5. Project milestones.
6. Owner's partial utilization.

PART 2 PRODUCTS

2.01 PRELIMINARY CONSTRUCTION SCHEDULE

A. Preliminary construction schedule shall be completed in accordance with the General Conditions and prior to the scheduling conference.

B. The preliminary schedule shall outline the Contractor's sequencing of tasks, activities, milestones, and all critical path items within the contract time.

2.02 CONSTRUCTION SCHEDULE

A. The Contractor's submission of the construction schedule will not change the contract completion date, whether reviewed by the Owner and Engineer or not. The Contractor shall incorporate all approved change orders that have resulted in a contract time extension.

B. The Contractor shall require all subcontractors engaged in the Work to submit to the Contractor construction schedules, as specified herein, for incorporation into the Contractor's construction schedule.

C. The construction schedule shall include, but not limited to, the following dates:

1. Notice to Proceed.
2. Substantial Completion and Final Completion.
3. Commencement of on-site operations.
4. Milestones as specified, shown on the Drawings, and as directed.
5. Ordering, submittals, fabrication, delivery, startup, and training time of major equipment items.
6. Submittal schedule per the General Conditions.

D. The Contractor shall incorporate into the construction schedule all constraints and work restrictions specified or otherwise required by the Contractor's operations, including, but not limited to, the following:

1. Construction sequencing.
2. Contractor's coordination of subcontractors.
3. Coordination with the Owner's operations.
4. Coordination with other Contractor's or other work.
5. Project milestones.
6. Owner's partial utilization.

2.03 UPDATING CONSTRUCTION SCHEDULE

A. The Contractor shall keep the construction schedule current to the progress of the Work continually through closeout of the project. The construction schedule shall be submitted monthly for the Engineer's review.

2.04 WEEKLY CONSTRUCTION SCHEDULE

A. The Contractor shall submit a schedule of his work for each week. This schedule shall identify the foreman of each work crew and the location and type of work the crew will be doing each day. It shall be delivered no later than 4:00 p.m. of the next to last regular workday of the preceding week to the Resident Project Representative's office.

PART 3 EXECUTION

3.01 COORDINATION

A. All phases of the Work requiring interference with normal operations of the existing facilities shall be scheduled in accordance with agreements among the Contractor, Owner, and Engineer. The Contractor shall notify the Owner at least one week before such Work is to begin.

PART 4 SPECIAL PROVISIONS

4.01 SCHEDULED NON-WORK DAYS

A. The Contractor shall restrict Work to days when the Owner's offices are open and consider the following list of holidays as mandatory non-work days, all of which shall be incorporated into the construction schedule:

1. New Year's Day.
2. Memorial Day.
3. Fourth of July.
4. Labor Day.
5. Thanksgiving Day.
6. Christmas Day.

END OF SECTION

SECTION 01320
ELECTRONIC PROJECT MANAGEMENT SYSTEM (EPMS)

PART 1 GENERAL

1.01 SCOPE

A. This section describes the requirements for the Electronic Project Management System (EPMS) which will be required on this project. Engineer will implement an internet/web site based Electronic Project Management System (EPMS) for the administration of the Contract on this project. Owner, Contractors and Engineer shall be responsible to interface with EPMS and collaborating via the EPMS on this project. The EPMS is intended to supplement the Contract Documents and the provisions of the Contract Documents shall not be superseded by the EPMS.

1. The EPMS is intended to provide a mode of communication which is electronic and to reduce the reliance upon printed documents. Printed documents transmitted will not be reviewed, and electronic documents emailed outside of the EPMS will not be reviewed. The Owner, Contractor and Engineer will collaborate on unique situations or circumstances in order to preserve the project electronic records.

C. The Owner, Contractor and Engineer shall be required to provide project related information/documents via EPMS. In general, the EPMS will receive information via uploaded documents as PDF documents, in their native format (when permitted or required), or other electronic formats designated or required for functionality. The EPMS shall be a central repository for information to all project team members. The EPMS will provide viewing, printing, up/downloading of various information/documents.

D. In general, the following is a partial list of information/documents which shall be tracked through the EPMS:

1. Drawings, Specifications and Addendums (included revisions as necessary).
2. Insurance.
3. General Project Communication, Emails, Memorandums, Correspondence and Collaboration or any other document any participant wishes to make part of the project records.
4. Request for Information (RFI).
5. Submittals (Shop Drawings, Operation and maintenance manuals, color selections etc.)
6. Work Change Directives, Change Request and Change Orders.
7. Schedule of Values, Pay Requests and Certified Payroll Reports.
8. Schedules (project, weekly and monthly).
9. Meeting Minutes.

10. Permits and Special Inspections Reports.
11. Laboratory Services (testing and reporting).
12. Closeout procedures (deficiency list, warranty, substantial completion).

E. In an effort to protect proprietary information and prohibit unauthorized use or modifications, levels of access security will be assigned in order to provide safe and secure access to information with respects to involvement and responsibility on the project. The Owner, Contractor and Engineer shall establish these levels of access and rights which are appropriate for this project.

F. Owner, Contractor and Engineer shall utilize the mark-up tool integral within the EMPS or have a PDF review software that includes the ability to mark up and apply electronic stamps (such as Adobe Acrobat, or Bluebeam PDF Revu).

G. A high-speed internet connection is required.

H. The EPMS will provide notifications regarding new or updated documents through an existing Email account outside of the EPMS.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.01 CONTRACT REQUIREMENTS

A. All provisions of the Contract Documents are in full effect and enforcement. The submittal procedures specified in the Contract Documents are applicable with the understanding that they will be electronic documents and submitted via the EPMS.

3.02 TRAINING

A. One training session by the Engineer and Eastern Engineering, Inc. will be provided to the team members at the beginning of the EPMS implementation. Training will be coordinated with the Preconstruction meeting and held at the same location. There are many tutorials, help features and technical support options located on the Eastern Engineering web site.

B. Engineer will provide project related support as needed within their ability to provide it. Technical support will be available to all project team members from Eastern Engineering, Inc.

3.03 OPERATION

A. Contractor and all Subcontractors shall maintain a Windows-based computer system including high speed internet access and ability to create/mark-up documents using Adobe Acrobat (pdf) and to scan documents.

B. Engineer will facilitate the implementation and overall operation of the EPMS with Eastern Engineering. Eastern Engineering will provide and maintain the EPMS server and will back up the information.

3.04 ARCHIVE PROJECT CLOSE OUT

A. All files on the EPMS web site will be archived at the end of the project. These archives will be made available to the Owner, Contractors and Engineer for download over the internet, at the end of the warranty period.

3.05 ELECTRONIC SUBMITTAL FILE NAMING CONVENTION

A. The Contractor shall utilize the following file name convention for PDF files submitted through eComm:

1. Spec Section - Number of Submittal from Section - Number of Times Submitted.

   a. Example: 02552-01-03.

2. The example represents the first submittal from Specification Section 02552 and the third time this Submittal has been submitted.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 01350
COMMON PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes general requirements for all materials, equipment and systems furnished or installed under this project.

B. Additional specific requirements included under a particular Section shall take precedence.

C. This Section includes, but is not limited to, the following procedural and administrative requirements:

1. Product Delivery Storage and Handling.
2. Warranties.
3. Quality Assurance and Control.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and related specification sections.

B. The specification sections and Drawings contain the specific submittal requirements.

1.03 QUALITY ASSURANCE

A. Where Contractor is required to provide design services or certification of the design, the specified product, equipment or system shall comply with the specified criteria.

1. Contractor shall submit a written request for clarification when specified criteria is incomplete or insufficient.

B. Manufacturer's name, make, model number and other designations provided in the contract documents are to establish the significant characteristics, including but not limited to, type, function, dimensions and physical properties, performance, and appearance for the purpose of evaluating comparable products. Contractor shall verify product, equipment or system proposed meets or exceeds the requirements as specified or shown on the Drawings.

1.04 PROJECT HANDLING

A. Schedule delivery to minimize the time goods are kept in storage.

B. Deliver goods to Site in manufacturer's original packaging.

C. Inspect the goods to determine if there is visible damage to the packaging.

1. The packaging shall be removed in a manner that will allow resealing for storage.

2. If packaging cannot be removed and reused, the goods shall be repackaged per the manufacturer's recommendations.

D. Goods that are susceptible to damage by the environmental or project conditions, including but not limited to, switchgear, motor control centers, panelboards, instrument control panels, fixtures shall be stored in a controlled environment per the manufacturer's recommendations. If no such area is available at the time such equipment is received, such space shall be provided by the Contractor at no expense to the Owner.

E. Where construction is in roads or streets, that portion of the right-of-way not required for public travel may be used for temporary storage purposes unless otherwise prohibited. Materials shall not be stored in areas where such storage creates a hazard. Any other additional space required for construction or storage of materials and equipment shall be obtained by the Contractor at his expense.

F. The Contractor shall confine his equipment, the storage of materials and equipment, and the operations of his workers to areas permitted by law, ordinances, permits, and the requirements of the Contract Documents, and shall not unreasonably encumber the premises with materials or equipment.

1.05 GUARANTEE

A. Manufacturer's warranty, extending beyond one-year after substantial completion for the specified product, equipment or system shall be provided to the Owner and endorsed by the manufacturer.

B. Requirements for warranties extending beyond one-year after substantial completion are described in individual Sections of these specifications.

C. Manufacturer's limitations and disclaimers shall not relieve the Contractor from warranty obligations under the Contract Documents.

PART 2 PRODUCTS

2.01 SHOP PAINTING

A. Non-galvanized ferrous surface shall be painted.

B. Shop painting of ferrous surfaces shall be as follows:

1. Surfaces shall be thoroughly cleaned of dirt, grease, oil, rust, scale, or other foreign substances. All metal surfaces shall, as a minimum, be abrasive blasted in accordance with SSPC-SP6, Commercial Blast Cleaning.

2. Surfaces shall receive a shop coat of a primer compatible with the finish coating to be used by the Contractor.

2.02 GALVANIZING

A. Where galvanized metal is indicated, unless otherwise specified, galvanizing shall conform to ASTM A123 (Hot Dip Galvanized). Threaded parts and hardware shall be galvanized in conformance with ASTM A153.

2.03 REGULATORY REQUIREMENTS

A. Materials, equipment, coatings, and chemicals in contact with potable water or water being treated for potable water use shall comply with the applicable NSF Standards.

PART 3 EXECUTION

3.01 INSTALLATION

A. Products shall be installed in accordance with the manufacturer's instructions and Contract Documents.

B. Required appurtenances including but not limited to, anchors, grout, and leveling shims, shall be provided.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 01410
LABORATORY SERVICES

PART 1 GENERAL

1.01 SCOPE

A. The Contractor shall retain an independent laboratory.

B. Testing, inspection(s) and quality control are required to certify compliance with the Contract Documents.

1. The laboratory services do not relieve the Contractor from the responsibility of compliance with the Contract Documents

2. Any test required by the Owner shall not relieve the Contractor from the responsibility of compliance with the Contract Documents.

3. Any test required by the Owner shall not relieve the Contractor from the responsibility of supplying certificates from manufacturers or suppliers to demonstrate compliance with the Specifications.

C. Specific testing, inspection(s) and quality control requirements are specified in the individual Sections of the specifications.

D. Specific testing, inspection(s) and quality control requirements of any Federal, State or Local authorities are specified in the related sections of Work.

E. Testing of materials or equipment for compliance with various national or technical society standards and ordinarily performed by manufacturers, and shop and field tests of equipment are not included under this Section but shall be performed by the Contractor or his supplier as specified elsewhere.

F. Contractor may conduct material or field test(s), inspection(s) and quality control as they deem necessary.

1. Should the Contractor, at any time, desire the Owner to consider the results of such testing, inspection(s), and quality control, such results shall be certified by an independent testing laboratory acceptable to the Owner. Any testing of this nature shall be conducted at the Contractor's expense.

1.02 SUBMITTALS

A. Submittals of all required field and laboratory test results shall be made by the independent laboratory as soon as they are available to the Owner and Engineer directly.

1. Statement of Compliance per 1.03

1.03 QUALITY ASSURANCE

1. The laboratory shall be a recognized and independent commercial laboratory with experience in conducting the required tests.

2. Laboratory shall certify compliance with ASTM E548, ASTM E329, and ASTM C1093 when masonry construction is part of the project scope. In lieu of ASTM certification, the laboratory may submit written documentation demonstrating experience and training relevant to the inspections to be performed. The documentation shall demonstrate experience with projects of similar complexity and quantity of inspections as the project herein.

3. Testing, inspection(s) and quality control shall be certified by a professional engineer specialized in the related field and in the state where the Site is located.

PART 2 PRODUCTS

2.01 TESTS

A. Aggregates, Bedding Material, and Special Backfill - For each type of material, the laboratory shall perform an ASTM C136 sieve and screen analysis to determine compliance with the contract documents.

1. Retests shall be performed until the Specifications are met.

2. Retest shall be performed each time the source of material is changed.

B. Selected Backfill - At the discretion of the Engineer, but in no case, more than one test for each 1,000 cubic yards or portion thereof, the laboratory shall perform an ASTM C136 sieve and screen analysis to determine whether the material is suitable for backfilling purposes.

C. Mix Designs:

1. For each type of controlled density fill, concrete, and asphalt, the laboratory shall review, perform test(s).

2. Review, perform test(s) and approve change in source of materials.

3. The asphalt design shall be made in accordance with ASTM D1559, the Marshall Method of Mix Design and as specified.

4. Approved mix designs shall include sieve analyses and suppliers' certificates for materials incorporated in the mix.

D. Compaction Tests:

1. For each type of backfill material, the laboratory shall determine the moisture-density curve according to ASTM D698.

2. Using ASTM D2922 test methods, the laboratory shall determine the density of placed backfill.

3. Retests shall be performed if the compaction requirements stated in the individual Sections are not met.

4. The Engineer may at his discretion require the sand cone (ASTM D1556) or the balloon (ASTM D2167) tests for density and compaction to verify questionable results of the ASTM D2922 tests.

E. The independent testing laboratory shall test and report the soil bearing capacity under all foundations and slabs on grade. The testing shall be conducted at regular intervals in all directions. The independent testing laboratory shall immediately notify both the Contractor and Engineer of any such test not meeting the presumed soil bearing capacity contained in the Structural Design Data on the Drawings.

F. Asphalt and Concrete Quality Control Testing - Perform tests as indicated in Sections 02600 and 03300.

G. Miscellaneous Tests - Perform all other tests requested in the individual Sections of the Specifications.

2.02 RESERVED

2.03 EQUIPMENT

A. Provide all necessary equipment to extract and store samples and perform the required tests.

PART 3 EXECUTION

3.01 COORDINATION

A. The Contractor shall provide the source of all materials requiring testing and shall arrange access for the independent laboratory to obtain representative samples and perform required tests at the material source. The information shall be supplied in advance to allow time for testing and reporting. Concrete information shall be supplied at least 45 days prior to the first concrete placement.

B. Contractor shall coordinate activities to accommodate the required quality assurance/control.

1. Contractor shall not compromise the requirement for quality assurance /control in order to maintain the schedule.

C. The laboratory shall conduct tests on materials and in locations as directed by the Resident Project Representative.

D. All tests shall be performed in accordance with the proper test methods mentioned above and in the individual Sections. Results shall be compared to the required values included in the individual Sections.

3.02 PREPARATION

A. Contractor shall prepare all Work to be tested in accordance with the testing procedures as directed and required by independent laboratory, regulatory agency, or Owner and Owner’s representative.

3.03 PROTECTION

A. Contractor shall at the completion of testing, repair damage to construction in accordance with these specifications.

B. Contractor shall be responsible for the protection regardless of the responsibility for quality assurance/control.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 01500
MAINTAINING TRAFFIC

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the furnishing of all labor, materials, equipment and services necessary for maintaining and protecting vehicular and pedestrian traffic.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. The Contractor shall submit the name, address, and telephone number of a local individual who will be responsible for maintaining traffic facilities when the Contractor is not working.

b. Traffic control or maintenance plans with govern authority(s) approval.

c. Detour routes with governing authority(s) approval.

d. Delivery and haul routes for contractor's activities outside the zone of influence.

1.03 QUALITY ASSURANCE

A. The installation, maintenance, and operation of all traffic controls and traffic control devices shall conform to the requirements of the State Department of Transportation Manual of Uniform Traffic Control Devices for Streets and Highways, hereinafter called the MUTCD.

B. If, in the opinion of the authority having jurisdiction over traffic in the affected thoroughfares, proper maintenance of traffic facilities and proper provisions for traffic control are not being provided by the Contractor, they may take the necessary steps to place them in proper condition, and the cost of such services will be deducted from any money which may be due or become due the Contractor.

C. A traffic control conference, attended by Owner, Engineer, Contractor and governing authority, shall be held no later than 14 days prior to any traffic maintenance, placement of traffic control devices, lane closures, detouring of traffic or other activity that impedes the normal traffic flow.

PART 2 PRODUCTS

2.01 TRAFFIC CONTROL DEVICES

A. Traffic control devices shall be provided with suitable supports of sufficient strength and stability.

B. Faces of orange construction signs, barricades, vertical panels and drum bands shall be suitably reflectorized with sheeting.

C. Traffic cones shall be a highly visible orange color.

D. Pavement markings for traffic maintenance shall conform to the requirements of ODOT, the local authority and the MUTCD.

2.02 TEMPORARY TRAFFIC SIGNALS

A. The Contractor shall furnish, erect, maintain, and subsequently remove signal and signal controller equipment of a proper type and capacity to provide the required operation, and shall meet the general requirements of ODOT and the MUTCD.

1. Any malfunctions or failures shall be corrected without delay. Temporary traffic signals not in use shall be covered or removed.

B. The Contractor shall be responsible for the procurement of and payment for electric power for temporary traffic signals.

PART 3 EXECUTION

3.01 COORDINATION

A. The Contractor shall provide and maintain in safe condition such temporary facilities for vehicular and pedestrian traffic as may be necessary to provide safe vehicular and pedestrian ingress and egress for all property adjacent to the improvements. Such access shall be provided at all times unless workers or machinery are in the immediate area. Access shall be provided to all properties at the end of the Work day.

B. When the street or highway under construction is being used by vehicular traffic including periods of suspension of the Work, the Contractor shall maintain that portion of the street or highway being used to ensure that it is smooth, free from holes, ruts, ridges, bumps, and dust.

C. The Owner will enter upon that portion of a project, where the Contractor is responsible for maintaining through traffic on part or the entire project, to place abrasives at its own expense, as may be considered advisable.

1. The Contractor shall be responsible for the removal of abrasives placed, for which no claim for additional compensation shall be allowed nor shall the Contractor be relieved in any way of his obligation for maintenance of traffic.

D. The Owner will provide for the necessary maintenance of public streets or highways which are used as detour beyond the Work limits of the contract.

3.02 TRAFFIC CONTROL

A. Barricades, vertical panels, and cones shall be protected by adequate advance warning construction signs.

B. Equipment and material stored on the highway shall be marked at all times. At night, any such material or equipment stored within rights-of-way and easement(s) shall be clearly outlined with dependable lighted devices.

C. Contractor shall provide any other lights, barricades, etc., that may be needed for the protection of pedestrian traffic in all areas where materials are stored.

D. Road Closed - When a highway is permitted to be closed to traffic, the Contractor shall provide, erect, maintain, and subsequently remove approved traffic control devices, barricades, and suitable and sufficient red or yellow lights.

3.03 TRAFFIC MAINTAINED

A. Where the street or highway under construction is being used by vehicular traffic, including periods of suspension of the Work, the Contractor shall furnish and maintain pavement markings, lights, warning signs, road construction traffic-maintained signs, and end construction signs, barricades, temporary guardrail, and such other traffic control devices, and flaggers as may be necessary to maintain safe traffic conditions within the Work limits.

B. Existing signs and traffic control devices within the Work limits shall remain in use during the construction period. If the Contractor needs to relocate or modify permanent signs and other traffic control devices as a consequence of his work, he shall provide suitable supports and may modify the devices with prior approval of the Engineer and the concurrence of the maintaining agency. Routine maintenance of permanent traffic control devices will remain the responsibility of the maintaining agency.

C. The function of existing Stop or Yield signs shall be retained at all times although their position may be adjusted. Existing signs that must be relocated laterally shall be placed in accordance with the MUTCD.

D. When an existing signal operation must be interrupted for a period, the Contractor shall provide a temporary traffic control method.

E. The Contractor shall obtain the approval of the Owner and Engineer before closing a traffic lane or establishing a one-way traffic operation.

F. Flaggers:

1. Whenever one-way traffic is established, at least two flaggers shall be used and signs, cones, barricades, and other traffic control devices shall be erected by the Contractor in accordance with the MUTCD. The Contractor shall maintain positive and quick means of communication between the flaggers at the opposite ends of the restricted area.

2. Flaggers shall be equipped according to the standards for flagging traffic contained in the MUTCD. At night, flaggers' stations shall be adequately illuminated.

3. The Contractor may, in lieu of flaggers, or supplementing them, furnish, install, and operate a temporary traffic signal or signals, for the purpose of regulating traffic.

3.04 SNOW AND ICE REMOVAL

A. The state and local authority responsible for snow and ice removal will be responsible for removals during the construction provided the following:

1. The project area is open to public access.
2. In the opinion of the state and local authority the project area is accessible with their equipment.
3. In the opinion of the state and local authority the street surface will not cause damage to their equipment or their equipment will not cause damage to the street.

B. The Contractor shall be responsible for snow and ice removal during construction when:

1. The project area is closed to public access.
2. When Limited access is provided for local traffic but area is closed to through traffic.
3. The project area pavement has removed or damaged to the extent that the state and local authority's equipment will no longer effectively remove snow and ice or will cause damage to project area.

PART 4 SPECIAL PROVISIONS

4.01 HARDIN PIKE & CANNING FACTORY ROAD

A. Hardin Pike & Canning Factory Road may be closed to through traffic for 2 days for each road to permit the work to be completed.

B. The Contractor shall be responsible for contacting the Auglaize County Engineer's Office in advance of the work.

C. The detour route shall be as defined by the County Engineer's office.

D. The detour route will be signed and maintained by the Contractor including all signage as required by the Ohio MUTCD and as shown on the attached page titled Figure 6H-8 Road Closure with Off-Site Detour.

E. Hardin Pike & Canning Factory Roads shall not be closed at the same time.

4.02 ASHLAND AVENUE AND SOUTH BLACKHOOF STREET

A. The intersection of Ashland Avenue and South Blackhoof Street may be closed to through traffic for 2 days.

B. The Contractor shall be responsible for contacting the City in advance of the work.

C. A detour route as requested by the City shall be signed and maintained by the Contractor including all signage as required by the Ohio MUTCD and as shown on the attached page titled Figure 6H-8 Road Closure with Off-Site Detour.

4.03 STATE ROUTE 33 ACCESS RAMPS

A. The Contractor shall not be permitted to interrupt traffic on the State Route 33 Access Ramps during the work.

B. The Contractor shall abide by the flagging and temporary traffic control requirements attached to this specification from the OMUTCD.

C. Advance signage on the ramps shall be provided as indicated in the attached documents from the OMUTCD.

4.04 ODOT PERMITS

A. The Owner is in the process of obtaining an ODOT MR-505 permit for the proposed work adjacent to and crossing State Route 33.

B. A copy of the approved permit shall be shared with the Contractor once received from ODOT District 7. ODOT will release the permit once the bond required from the Contractor is received by ODOT District 7.

4.05 WORK IN THE RIGHT-OF-WAY

A. Equipment stored on the roadway must be protected with ODOT NJ Type PCBS with illuminated beacons.

B. Open excavations in the right-of-way shall be backfilled or plated when work is not occurring at the site.

END OF SECTION

Notes for Figure 6H-8—Typical Application 8
Road Closure with Off-Site Detour

Guidance:

1. Regulatory traffic control devices should be modified as needed for the duration of the detour.
2. If the road is opened for some distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED and DETOUR signs on Type III Barricades should be located at the edge of the traveled way.

Option:

3. If the road is closed a short distance beyond the intersection and there are few origin/destination points beyond (for example, a few residences), the Type III Barricade shown in the figure may be moved to the center of the traveled lanes.

Standard:

4. **If the barricades are located as in Item 3 above, the ROAD CLOSED and DETOUR signs shall be placed only on the barricade centered in the lane of travel of traffic approaching the closure. The barricade centered in the lane of travel of departing traffic shall not be signed. The barricades in adjacent lanes shall be offset longitudinally from each other an adequate distance in order to permit traffic to travel around the barricades (the barricade in the road user's lane located in advance of the barricade located left of the center line).**

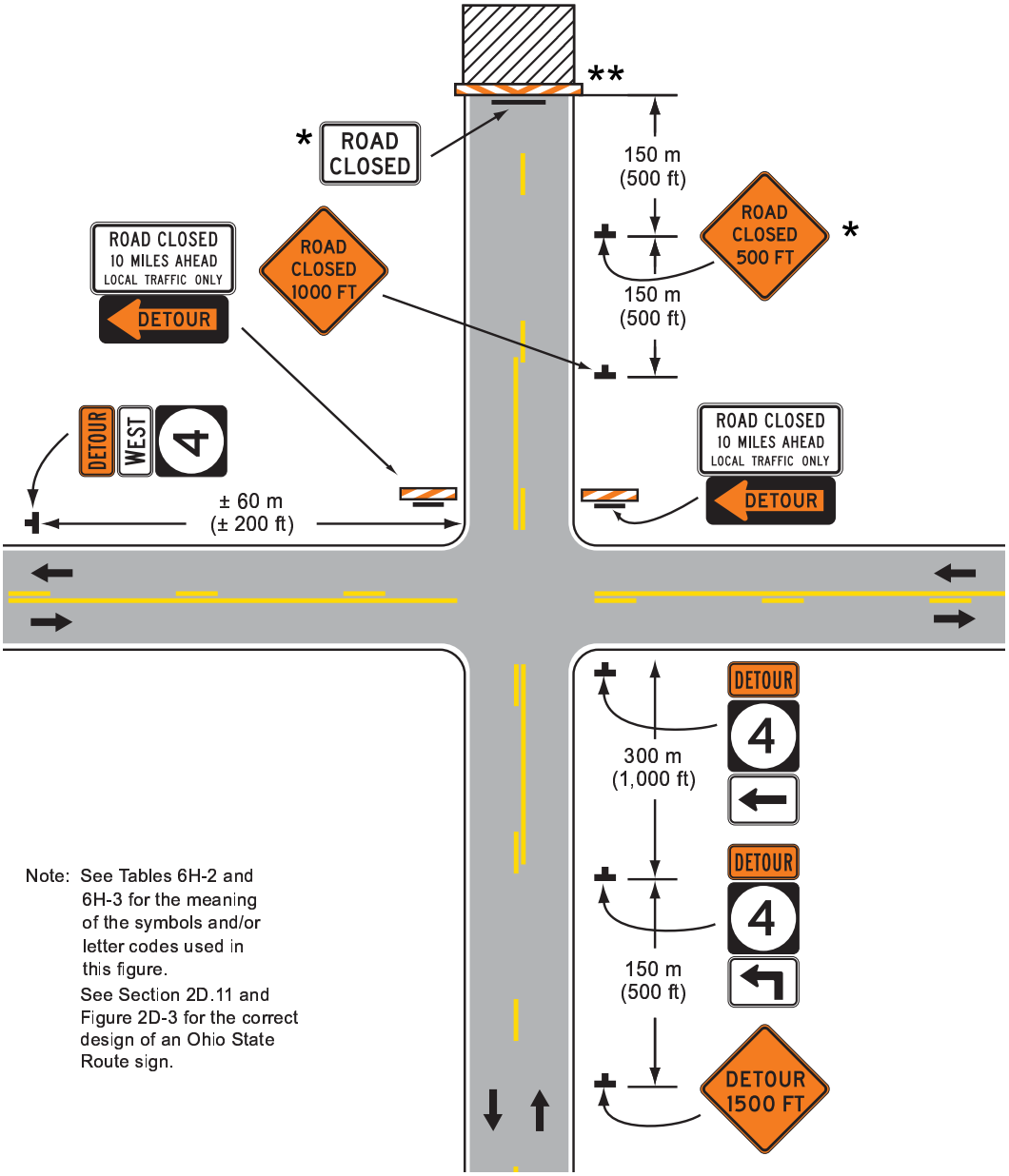
Option:

5. A Route Sign Directional assembly may be placed on the far left corner of the intersection to augment or replace the one shown on the near right corner.
6. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
7. Cardinal direction plaques may be used with route signs.

Figure 6H-8. Road Closure with Off-Site Detour (TA-8)

*2 Signs - One on each approach

**Type III Barricades as necessary to block roadway completely



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.
See Section 2D.11 and Figure 2D-3 for the correct design of an Ohio State Route sign.

Typical Application 8

APPROVED

Temporary Traffic Control Manual

2012 Edition

Reprint of three Parts from the
Ohio Manual of Uniform Traffic Control Devices, 2012 Edition:
Part 1, General
Part 5, Traffic Control Devices for Low-Volume Roads
Part 6, Temporary Traffic Control

Ohio Department of Transportation
Office of Traffic Engineering

Ohio Department of Transportation
Office of Traffic Engineering
1980 W. Broad St., P.O. Box 899
Columbus, OH 43216-0899

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Notes for Figure 6H-1—Typical Application 1
Work Beyond the Shoulder

Guidance:

1. *If the work space is in the median of a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.*

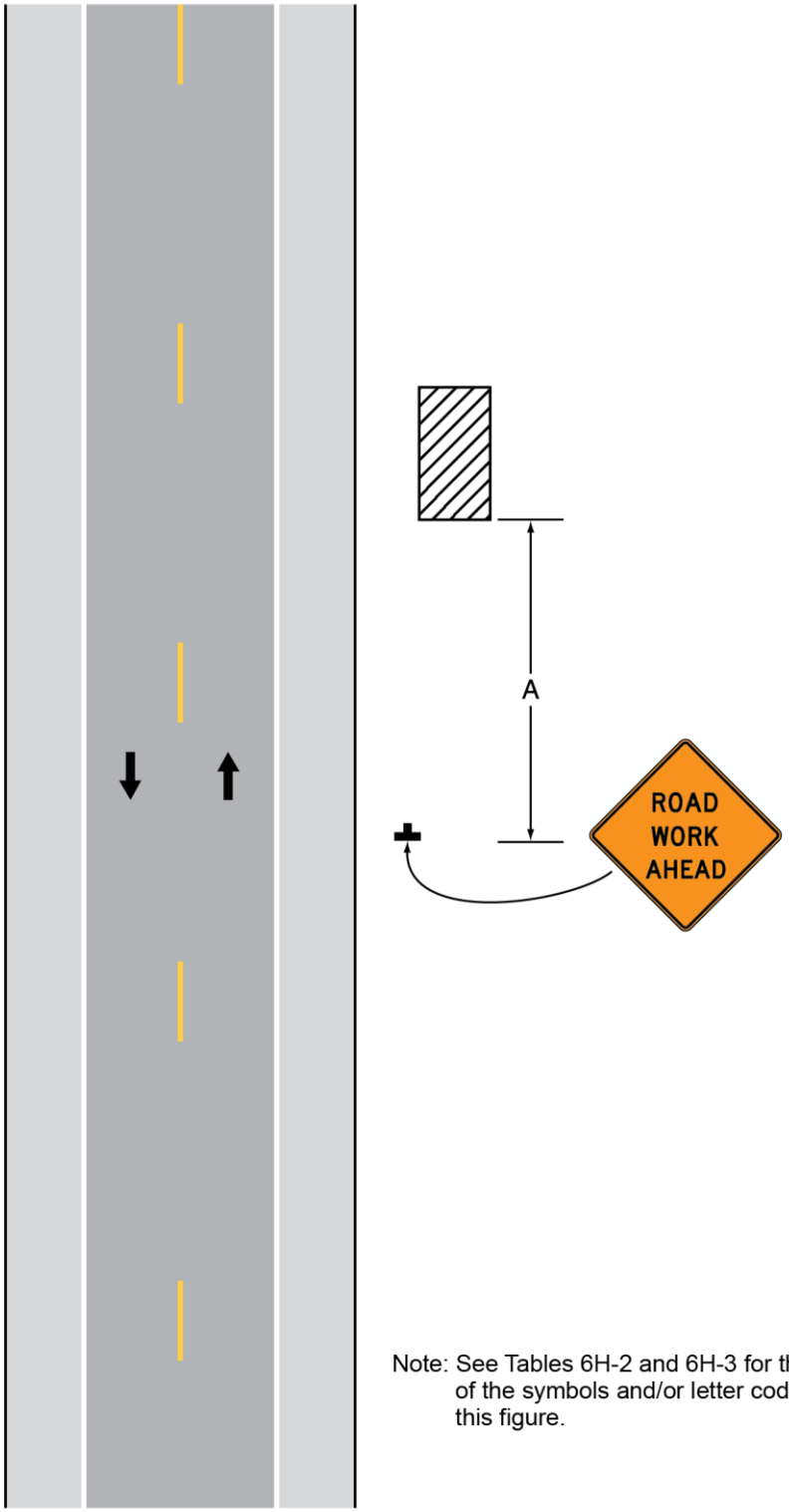
Option:

2. The ROAD WORK AHEAD sign may be replaced with other appropriate signs such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.
3. The ROAD WORK AHEAD sign may be omitted where the work space is behind a barrier, more than 24 inches behind the curb, or 15 feet or more from the edge of any roadway.
4. For short-term, short-duration or mobile operation, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
5. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

6. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**

Figure 6H-1. Work Beyond the Shoulder (TA-1)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 1

Notes for Figure 6H-3—Typical Application 3
Work on the Shoulders

Guidance:

1. *A SHOULDER WORK sign should be placed on the left side of the roadway for a divided or one-way street only if the left shoulder is affected.*

Option:

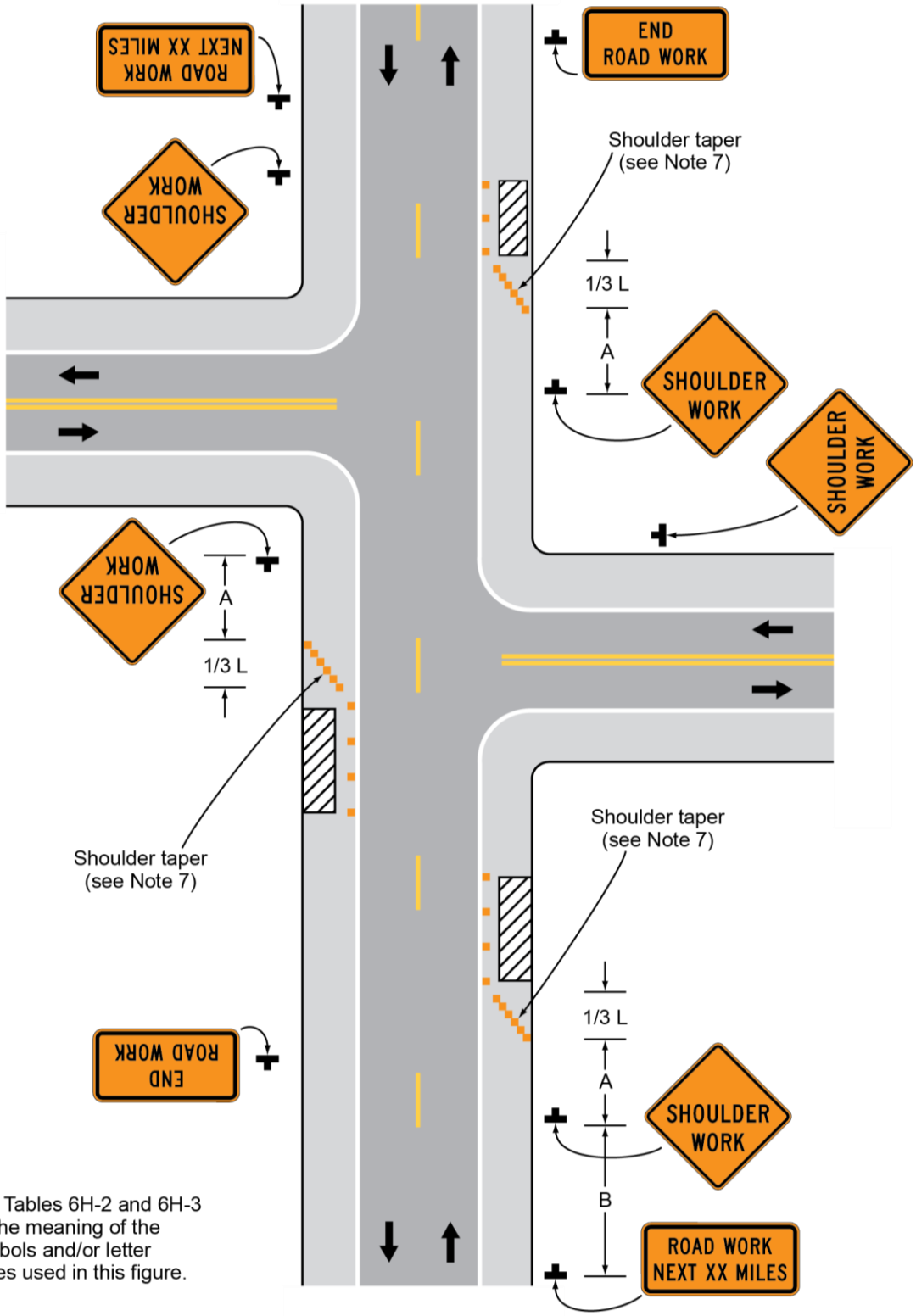
2. The Workers symbol signs may be used instead of SHOULDER WORK signs.
3. The SHOULDER WORK AHEAD sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
4. For short-duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
5. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

6. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**
7. **When paved shoulders having a width of 8 feet or more are closed, at least one advance warning sign shall be used. In addition, channelizing devices shall be used to close the shoulder in advance to delineate the beginning of the work space and direct vehicular traffic to remain within the traveled way.**

Note; While pulling wires across SR 571, flaggers and signs should be used to monitor traffic flow. Please set at the correct distances.

Figure 6H-3. Work on the Shoulders (TA-3)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 3

Notes for Figure 6H-4—Typical Application 4
Short-Duration or Mobile Operation on a Shoulder

Guidance:

1. *In those situations where multiple work locations within a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.*
2. *In those situations where the distance between the advance signs and the work is 2 miles to 5 miles, a Supplemental Distance plaque should be used with the ROAD WORK AHEAD sign.*

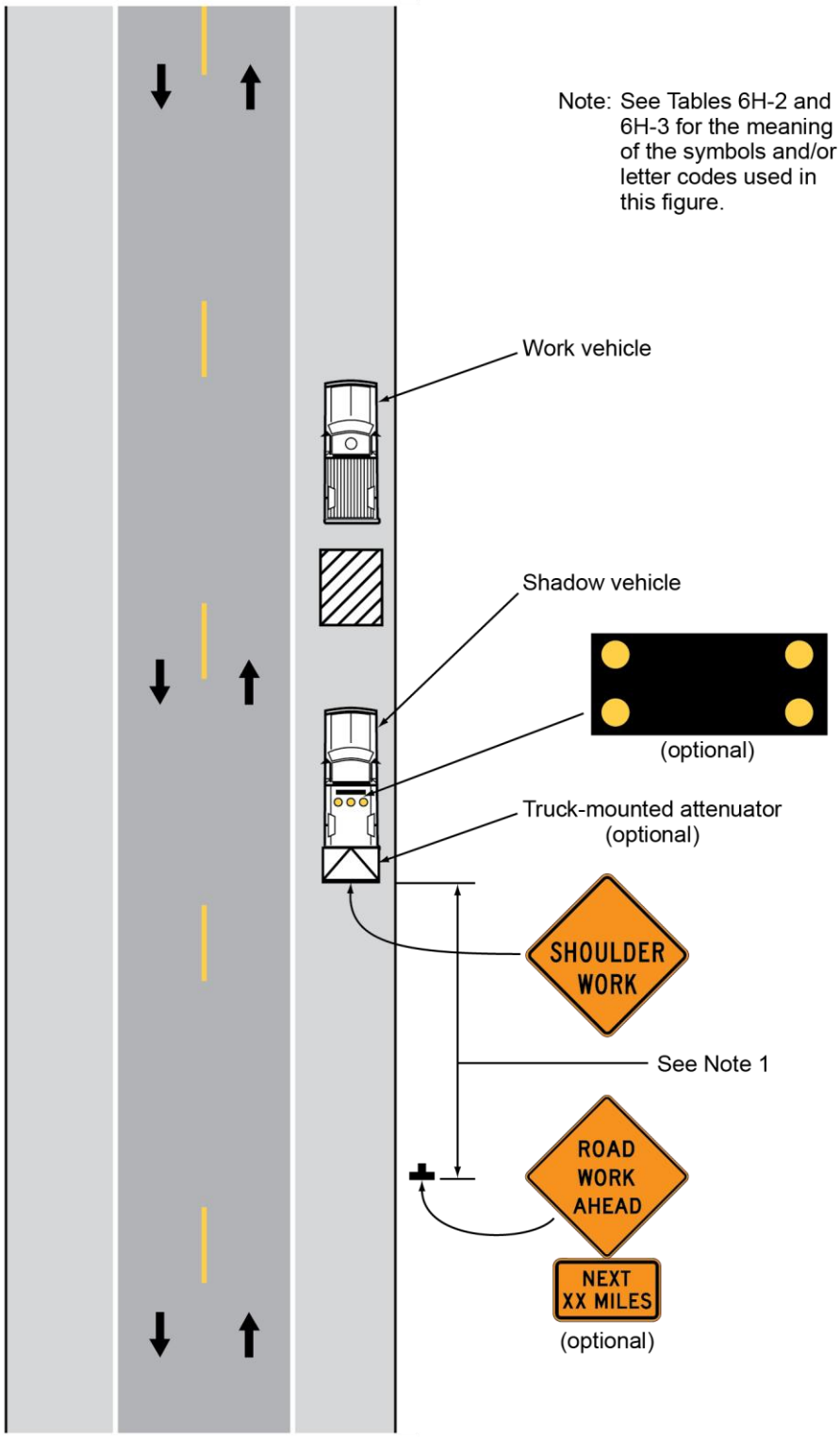
Option:

3. The ROAD WORK NEXT XX MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.
4. Stationary warning signs may be omitted for short-duration or mobile operations if the work vehicle displays high-intensity rotating, flashing, oscillating, or strobe lights.
5. Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

Standard:

6. **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**
7. **If an arrow board is used for an operation on the shoulder, the caution mode shall be used.**
8. **Vehicle-mounted signs shall be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs shall be covered or turned from view when work is not in progress.**

Figure 6H-4. Short-Duration or Mobile Operation on a Shoulder (TA-4)



Typical Application 4

Notes for Figure 6H-5—Typical Application 5
Shoulder Closure on a Freeway

Guidance:

1. *SHOULDER CLOSED signs should be used on limited-access highways where there is no opportunity for disabled vehicles to pull off the roadway.*
2. *If drivers cannot see a pull-off area beyond the closed shoulder, information regarding the length of the shoulder closure should be provided in feet or miles, as appropriate.*
3. *The use of a temporary traffic barrier should be based on engineering judgment.*

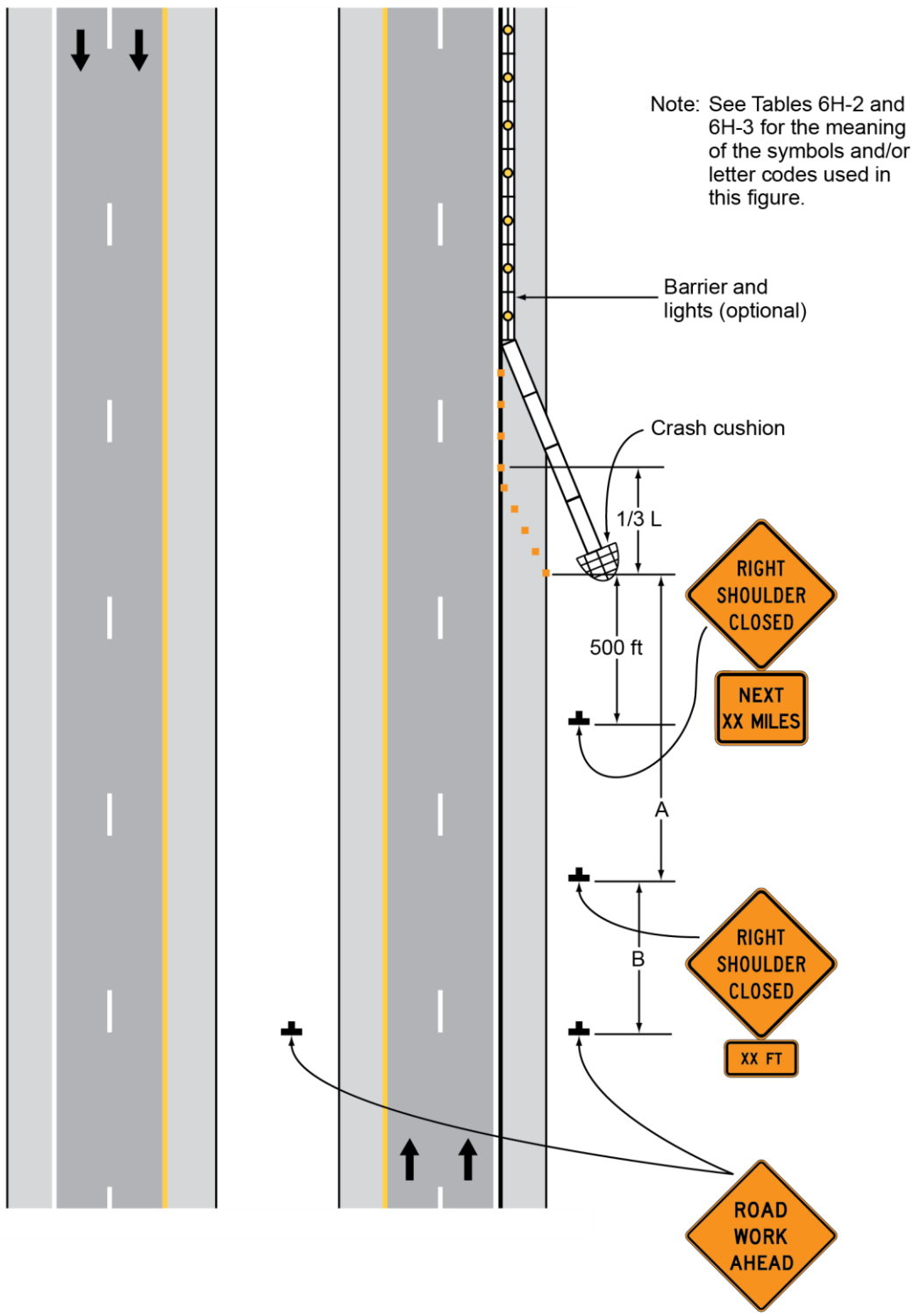
Standard:

4. **Temporary traffic barriers, if used, shall comply with the provisions of Section 6F.85**.

Option:

5. The barrier shown in this typical application is an example of one method that may be used to close a shoulder of a long-term project.
6. The warning lights shown on the barrier may be used.

Figure 6H-5. Shoulder Closure on a Freeway (TA-5)



Typical Application 5

Guidance:

02 *Detours should be clearly signed over their entire length so that road users can easily use existing highways to return to the original highway.*

Support:

03 A diversion is a temporary rerouting of road users onto a temporary highway or alignment placed around the work area.

Section 6C.10 One-Lane, Two-Way Traffic Control

Standard:

01 **Except as provided in Paragraph 5, when traffic in both directions must use a single lane for a limited distance, movements from each end shall be coordinated.**

Guidance:

02 *Provisions should be made for alternate one-way movement through the constricted section via methods such as flagger control, a flag transfer, a pilot car, traffic control signals, or stop or yield control.*

03 *Control points at each end should be chosen to permit easy passing of opposing lanes of vehicles.*

04 *If traffic on the affected one-lane roadway is not visible from one end to the other, then flagging procedures, a pilot car with a flagger used as described in Section 6C.13, or a traffic control signal should be used to control opposing traffic flows.*

Option:

05 If the work space on a low-volume street or road is short and road users from both directions are able to see the traffic approaching from the opposite direction through and beyond the worksite, the movement of traffic through a one-lane, two-way constriction may be self-regulating.

Section 6C.11 Flagger Method of One-Lane, Two-Way Traffic Control

Guidance:

01 *Except as provided in Paragraph 2, traffic should be controlled by a flagger at each end of a constricted section of roadway. One of the flaggers should be designated as the coordinator. To provide coordination of the control of the traffic, the flaggers should be able to communicate with each other orally, electronically, or with manual signals. These manual signals should not be mistaken for flagging signals.*

Option:

02 When a one-lane, two-way TTC zone is short enough to allow a flagger to see from one end of the zone to the other, traffic may be controlled by either a single flagger or by a flagger at each end of the section.

Guidance:

03 *When a single flagger is used, the flagger should be stationed on the shoulder opposite the constriction or work space, or in a position where good visibility and traffic control can be maintained at all times. When good visibility and traffic control cannot be maintained by one flagger station, traffic should be controlled by a flagger at each end of the section.*

Section 6C.12 Flag Transfer Method of One-Lane, Two-Way Traffic Control

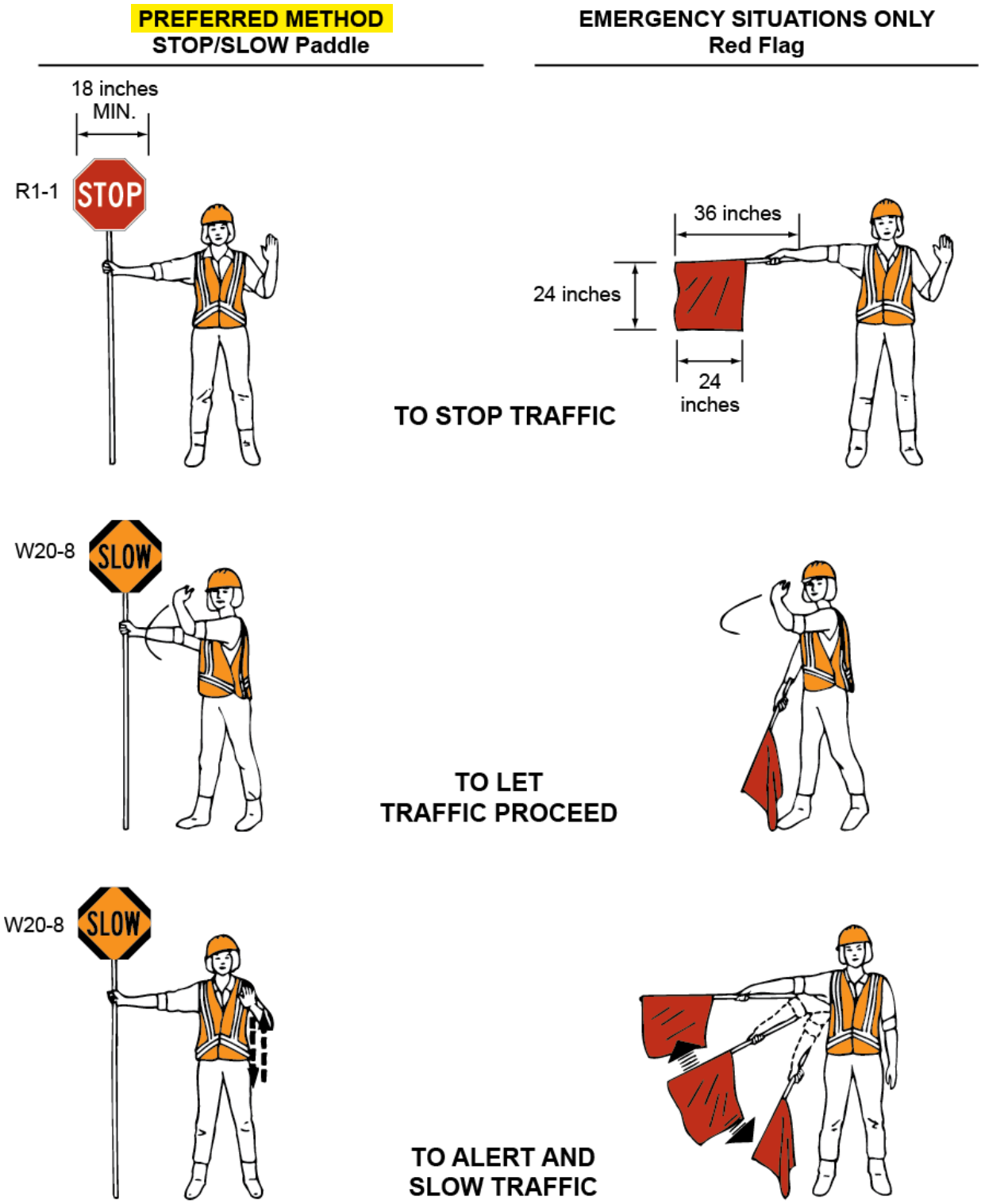
Support:

01 The driver of the last vehicle proceeding into the one-lane section is given a red flag (or other token) and instructed to deliver it to the flagger at the other end. The opposite flagger, upon receipt of the flag, then knows that traffic can be permitted to move in the other direction. A variation of this method is to replace the use of a flag with an official pilot car that follows the last road user vehicle proceeding through the section.

Guidance:

02 *The flag transfer method should be employed only where the one-way traffic is confined to a relatively short length of a road, usually no more than 1 mile in length.*

Figure 6E-3. Use of Hand-Signaling Devices by Flaggers



Option:

02 The distances shown in Table 6E-1, which provides information regarding the stopping sight distance as a function of speed, may be used for the location of a flagger station. These distances may be increased for downgrades and other conditions that affect stopping distance.

Guidance:

03 *Flagger stations should be located such that an errant vehicle has additional space to stop without entering the work space. The flagger should identify an escape route that can be used to avoid being struck by an errant vehicle.*

Standard:

04 **Except in emergency situations, flagger stations shall be preceded by an advance warning sign or signs. Except in emergency situations, flagger stations shall be illuminated at night.**

Table 6E-1. Stopping Sight Distance as a Function of Speed

Speed *	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
75 mph	820 feet

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

Notes for Figure 6H-13—Typical Application 13
Temporary Road Closure

Support:

1. Conditions represented are a planned closure not exceeding 20 minutes during the daytime.

Standard:

2. A flagger or uniformed law enforcement officer shall be used for this application. The flagger, if used for this application, shall follow the procedures provided in Sections 6E.07 and 6E.08.

Guidance:

3. The uniformed law enforcement officer, if used for this application, should follow the procedures provided in Sections 6E.07 and 6E.08.

Option:

4. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

5. When used, the BE PREPARED TO STOP sign should be located before the Flagger symbol sign.

Figure 6H-13. Temporary Road Closure (TA-13)

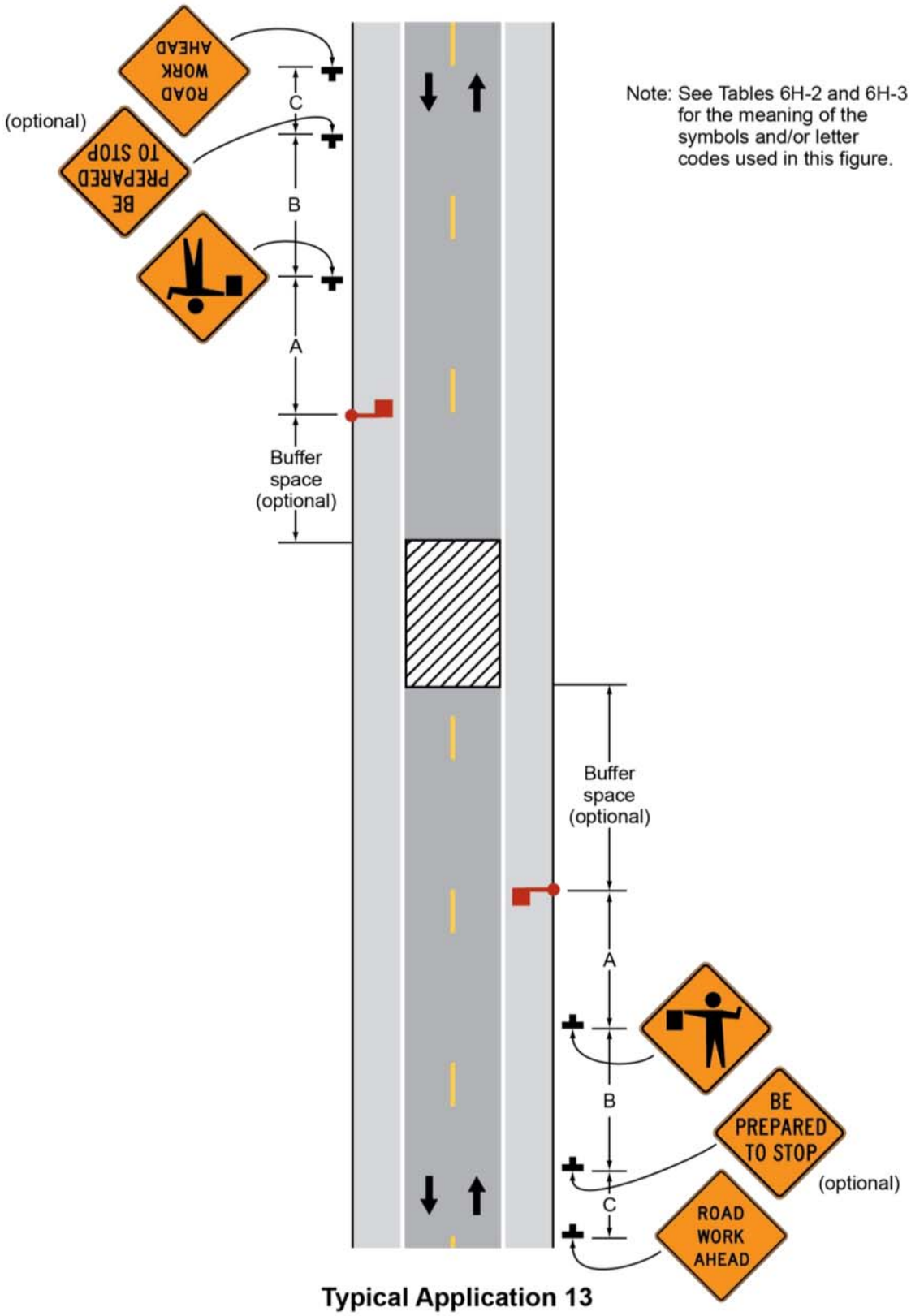


Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

Road Type	Distance Between Signs **		
	A	B	C
Urban (low speed) *	100 feet	100 feet	100 feet
Urban (high speed) *	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by highway agency.

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

---

04 *On urban streets, the effective placement of the first warning sign in feet should range from 4 to 8 times the speed limit in mph, with the high end of the range being used when speeds are relatively high. When a single advance warning sign is used (in cases such as low-speed residential streets), the advance warning area can be as short as 100 feet. When two or more advance warning signs are used on higher-speed streets, such as major arterials, the advance warning area should extend a greater distance (see Table 6C-1).*

05 *Since rural highways are normally characterized by higher speeds, the effective placement of the first warning sign in feet should be substantially longer—from 8 to 12 times the speed limit in mph. Since two or more advance warning signs are normally used for these conditions, the advance warning area should extend 1,500 feet or more for open highway conditions (see Table 6C-1).*

06 *The distances contained in Table 6C-1 are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted for field conditions, if necessary, by increasing or decreasing the recommended distances.*

Support:

07 The need to provide additional reaction time for a condition is one example of justification for increasing the sign spacing. Conversely, decreasing the sign spacing might be justified in order to place a sign immediately downstream of an intersection or major driveway such that traffic turning onto the roadway in the direction of the TTC zone will be warned of the upcoming condition.

Option:

08 Advance warning may be eliminated when the activity area is sufficiently removed from the road users' path so that it does not interfere with the normal flow.

Section 6C.05 Transition Area

Support:

01 The transition area is that section of highway where road users are redirected out of their normal path. Transition areas usually involve strategic use of tapers, which because of their importance are discussed separately in detail.

Standard:

02 **When redirection of the road users' normal path is required, they shall be directed from the normal path to a new path.**

Option:

03 Because it is impractical in mobile operations to redirect the road user's normal path with stationary channelization, more dominant vehicle-mounted traffic control devices, such as arrow boards, portable changeable message signs, and high-intensity rotating, flashing, oscillating, or strobe lights, may be used instead of channelizing devices to establish a transition area.

Section 6C.06 Activity Area

Support:

01 The activity area is the section of the highway where the work activity takes place. It is comprised of the work space, the traffic space, and the buffer space.

02 The work space is that portion of the highway closed to road users and set aside for workers, equipment, and material, and a shadow vehicle if one is used upstream. Work spaces are usually delineated for road users by channelizing devices or, to exclude vehicles and pedestrians, by temporary barriers.

Option:

03 The work space may be stationary or may move as work progresses.

Guidance:

04 *Since there might be several work spaces (some even separated by several miles) within the project limits, each work space should be adequately signed to inform road users and reduce confusion.*

Support:

05 The traffic space is the portion of the highway in which road users are routed through the activity area.

06 The buffer space is a lateral and/or longitudinal area that separates road user flow from the work space or an unsafe area, and might provide some recovery space for an errant vehicle.

Guidance:

07 *Neither work activity nor storage of equipment, vehicles, or material should occur within a buffer space.*

Option:

08 Buffer spaces may be positioned either longitudinally or laterally with respect to the direction of road user flow. The activity area may contain one or more lateral or longitudinal buffer spaces.

09 A longitudinal buffer space may be placed in advance of a work space.

10 The longitudinal buffer space may also be used to separate opposing road user flows that use portions of the same traffic lane, as shown in Figure 6C-2.

11 If a longitudinal buffer space is used, the values shown in Table 6C-2 may be used to determine the length of the longitudinal buffer space.

Support:

12 Typically, the buffer space is formed as a traffic island and defined by channelizing devices.

Table 6C-2. Stopping Sight Distance as a Function of Speed

Speed *	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
75 mph	820 feet

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

13 When a shadow vehicle, arrow board, or changeable message sign is placed in a closed lane in advance of a work space, only the area upstream of the vehicle, arrow board, or changeable message sign constitutes the buffer space.

SECTION 01565
TEMPORARY RESTORATION AND MAINTENANCE OF PAVEMENTS, CURBS, AND WALKWAYS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes temporary restoration and maintenance of pavements, curbs, and walkways.

B. Restoration:

1. The Contractor shall promptly restore as herein specified all curbs, walks, driveways, and roadways affected by the Work done under this Contract as soon as any sufficient portion thereof has been completed. Such temporary restoration shall be maintained in satisfactory condition until permanent restoration work replaces the temporary Work.

C. Maintenance:

1. All temporary pavement, sidewalks, and other pavements affected by the Contractor's operations shall be maintained by the Contractor at his expense in a suitable and safe condition for traffic until permanent replacement is to be made.

2. This Section includes maintenance in or along streets in which construction is taking place; streets used for moving materials and construction equipment to and from the construction area; and streets used for bypassing or detouring traffic around the construction area.

PART 2 PRODUCTS

2.01 PAVEMENT MATERIALS

A. Pavement materials shall be in conformance with Section 02600 and the ODOT CMS of these Specifications unless otherwise shown on the Drawings.

PART 3 EXECUTION

3.01 CONSTRUCTION OF TEMPORARY PAVEMENT, CURBS AND WALKS

A. Preparation of Subbase - Before laying any pavements, sidewalks, or curbs, the trenches shall be compacted and all resulting holes and depressions shall be filled and tamped solid.

B. Curbs - All curbs required to be reset temporarily shall be placed in their original position or as directed but the Contractor will not be required to set them in concrete.

C. Sidewalks - All sidewalks disturbed shall be temporarily restored immediately upon the placing of the backfill either by relaying the old sidewalk pavement, placing 4 inches of aggregate base, laying a pavement of wooden planks 2-inch-thick, suitably fastened, and

flush with the adjacent sidewalk, or otherwise as directed. Permanent sidewalks shall be replaced as soon as possible.

3.02 SEASONAL LIMITATIONS FOR TEMPORARY PAVEMENT CONSTRUCTION

A. Weather limitations for placing asphalt materials shall conform to ODOT CMS. When weather limitations prevent the placing asphalt materials, the Contractor shall place 8 inches of aggregate base and maintain it until seal coat can be applied.

B. When time restrictions are not in effect, the Contractor shall prepare the base and immediately place temporary or permanent pavement surface.

3.03 MAINTENANCE OF TEMPORARY PAVEMENTS

A. All existing temporary pavement and sidewalk shall be maintained by the Contractor at his own cost and expense in a suitable and safe condition for traffic until permanent replacement is to be made, or the Work finally accepted. Any depressions which develop shall be acceptably repaved when directed. Spots in the pavements which show signs of deficient bitumen or raveling shall be repaired by hand, and if deemed necessary, pavement shall be reconstructed in part or in whole as directed.

3.04 SEASONAL LIMITATIONS FOR MAINTENANCE OF BITUMINOUS PAVEMENT

A. During that time of year when asphalt concrete cannot be placed in conformance with ODOT Specifications, the Contractor shall remove loose material from holes and fill depressions in the pavement with temporary pavement as required to maintain the road surface in a condition acceptable to the Owner.

B. As soon as weather conditions permit, the Contractor shall remove the temporary pavement and permanent repairs as specified and shown on the plans.

3.05 PERFORMANCE

A. If, in the opinion of the Engineer, proper maintenance of traffic facilities and proper provisions for traffic control are not being provided by the Contractor, the Engineer may take the necessary steps to place them in proper condition, and the cost of such services will be deducted from any money which may be due or become due the Contractor.

PART 4 SPECIAL PROVISIONS

4.01 TEMPORARY PAVEMENT

A. Temporary pavement placed on the following roads during periods when permanent pavement cannot be placed or in locations that will remain in place for over 30 days shall include the specified permanent base and either a minimum of 3 inches of cold patch material (ODOT 441) or a layer of polyethylene sheeting and a minimum of 3 inches of concrete as specified in Section 02600.

SECTION 01568
POLLUTION CONTROL

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the requirements for pollution control.

PART 2 PRODUCTS

2.01 GENERAL

A. Dust palliatives shall conform to ODOT Item 616.

PART 3 EXECUTION

3.01 OHIO GENERAL REQUIREMENTS

A. The Contractor is responsible to obtain and pay for NPDES Permit for storm water discharge.

B. The Contractor is responsible for following an erosion control plan in accordance with the requirements of the Clean Water Act, 33 USC Section 1251 et seq. and the OWPCA, ORC 6111.01 et seq. and related rules. The Contractor warrants and agrees that it is equipped to limit water pollution for its activity according to applicable Federal and State standards.

C. It shall be the responsibility of the Contractor to prevent or limit pollution of air and water resulting from his operations.

D. The Contractor shall perform Work required to prevent soil from eroding or otherwise entering onto all paved areas and into natural watercourses, ditches, and public sewer systems, and to prevent dust attributable to his operations from entering the atmosphere.

E. Excess soil that is stockpiled shall be removed or regraded within 15 days of the completion of construction.

3.02 STREETS, SIDEWALKS AND DRIVEWAYS

A. Streets, haul roads, and detours and bypass roads shall be swept by automatic self-contained sweepers.

B. Excessive dirt on pavements shall be removed by means of hand shoveling or appropriate mechanical equipment and the area swept as directed above.

C. Sidewalks and driveways shall be cleaned by means of shovels and hand brooms or appropriate mechanical equipment.

D. Dust on unsurfaced streets or parking areas and any remaining dust on surfaced streets shall be controlled with calcium chloride dust palliative.

E. The Contractor shall comply with the above requirements on a daily basis. If the Contractor fails to perform the above Work in a satisfactory manner, all Work, except cleanup operations, shall be stopped until the Contractor has complied with the above requirement.

3.03 EROSION AND SEDIMENT CONTROL

A. The Contractor shall initiate appropriate vegetative practices on all disturbed areas to remain dormant (undisturbed) for more than 45 days within seven days.

1. Such practices may include: temporary seeding, permanent seeding, mulching, matting sod stabilization, vegetative buffer strips, phasing and protection of trees.

B. Permanent or temporary soil stabilization shall be applied to disturbed areas within seven (7) days after final grade is reached on any portion of the Site.

C. When seasonal conditions prohibit the application of temporary or permanent seeding, non-vegetative soil stabilization practices, such as mulching and matting, shall be used.

D. A stabilization construction entrance shall be provided to reduce vehicle tracking of sediment. The paved street adjacent to the Site entrance shall be swept a minimum of daily, or as needed, to remove any excess mud, dirt, or rock being tracked from the Site.

1. Dust and sediment along any street due to construction on this Site is to be swept a minimum of once at the end of the day or as necessary to prevent a build-up of dust and soil on the pavement surface.

E. Dump trucks hauling from the construction site shall be covered with a tarpaulin.

F. No more than 200-feet of trench shall be open at any given time. Trench opening, laying of pipe, and backfilling should occur so as to minimize the amount of disturbed area.

G. The Contractor shall minimize the width of his work area.

H. Existing trees, shrubs, and other ground cover vegetation shall be preserved where possible. Tree removal will be limited to that necessary for construction and will be limited further to the permanent easement wherever possible. No tree removal will be permitted outside the temporary easement.

I. Storm water runoff and natural stream flow shall be intercepted or diverted when originating upgrade away from the construction site so as to minimize the amount of flow over the construction site.

J. All dewatering flows are to be settled in siltation basins or directed through filters before discharge to stabilized sites, such as stream or storm sewers, and not onto exposed soils, stream banks, or any other sites where the flow could cause erosion.

K. When construction occurs near storm sewer inlets, erosion control measures such as inlet filters or hay bales shall be used to prevent silt from entering the storm sewers.

L. The clean-up and disposal of excess excavated material shall be done as soon as practical after laying of the pipe. However, clean-up work shall not fall behind the pipe laying more than 800-feet. Should the Contractor not keep his clean-up within the aforementioned distance, Work shall stop until the clean-up work is accomplished.

3.04 OHIO SEDIMENT CONTROL

A. Contractor shall control erosion and trap sediment from all sites remaining disturbed for more than 14 days. Such practices shall include among others, sediment traps, sediment basins, silt fences, and storm drain inlet protection. Silt Fence fabric shall be ODOT Item 712.09 type C Geotextile Fabric.

B. Timing - Sediment control structures shall be functional throughout earth-disturbing activity. Sediment ponds and perimeter sediment barriers shall be implemented as the first step of grading and within seven days from the start of grubbing. They shall continue to function until the upslope development area is restabilized.

C. Settling Ponds - Concentrated storm water runoff from disturbed areas flowing at rates which exceed the design capacity of sediment barriers shall pass through a sediment settling pond. The facility's storage capacity shall be 67 cubic yards per acre of drainage area.

D. Sediment Barriers - Sheet flow from runoff from denuded area shall be intercepted by sediment barriers. Sediment barriers, such as sediment fences or diversions directing runoff to settling facilities, shall protect adjacent properties and water resources from sediment transported by sheet flow.

E. Other erosion and sediment control practices shall prevent sediment-laden water from entering drain systems, unless the storm drain system drains to a settling pond. These practices shall divert runoff from distributed areas and steep slopes where practicable and stabilize channels and outfalls from erosive flows.

3.05 CONSTRUCTION OF SLOPES

A. The Contractor shall comply with the following requirements when working on slopes exceeding 4:1.

1. The pipeline shall be constructed during dry weather, low flow periods as determined by the Engineer. The construction time for this Work shall be limited to the shortest time possible in order to minimize environmental impacts.

2. Construction equipment shall be limited to trenching equipment or rubber tired backhoes in order to prevent soil erosion and maintain slope stabilization.

3. Biodegradable mesh shall be used for slope stabilization. The mesh shall cover the entire width of disturbed ground.

4. The trench shall be backfilled immediately after installation of the pipe. The disturbed areas shall be graded, seeded, and mulched within 24 hours after

backfilling. The Contractor shall maintain all seeded and mulched areas in accordance with the specifications until final acceptance of the Work.

5. The Contractor shall place straw or hay bales at the base of the slopes for sedimentation control. The bales shall be placed prior to construction of the pipeline and shall remain until final seeding has germinated and become established.

3.06 RESERVED

3.07 PROHIBITED CONSTRUCTION ACTIVITIES

A. Disposing of excess or unsuitable excavated material in wetlands or floodplains, even with the permission of the property owner.

B. Locating stockpile storage areas in environmentally sensitive areas.

C. Indiscriminate, arbitrary, or capricious operation of equipment in any stream corridors, any wetlands, any surface waters, or outside the easement limits.

D. Pumping of sediment-laden water from trenches or other excavations directly into any surface waters, any stream corridors, any wetlands, or storm sewers; all such water will be properly filtered or settled to remove silt prior to release.

E. Discharging pollutants such as chemicals, fuels, lubricants, bituminous materials, raw sewage and other harmful waste into or alongside of rivers, streams, impoundments, or into natural or man-made channels leading thereto.

F. Permanent or unspecified alteration of the flow line of any stream.

G. Damaging vegetation outside of the construction area.

H. Disposal of trees, brush, and other debris in any stream corridors, any wetlands, any surface waters, or at unspecified locations.

I. Open burning of project debris without a permit.

J. Discharging injurious silica dust concentrations into the atmosphere resulting from breaking, cutting, chipping, drilling, buffing, grinding, polishing, shaping or surfacing closer than 200 feet to places of residences or places of human occupation.

K. Storing construction equipment and vehicles and/or stockpiling construction materials on property, public or private, not previously specified on the Drawings or not authorized by the Owner or Engineer for such purpose.

L. Running well point or pump discharge lines through private property or public property and rights-of-way without the written permission of the property owner and the consent of the Engineer.

PART 4 SPECIAL PROVISIONS

4.01 STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

A. The Drawings show recommendations for pollution prevention measures to be provided.

B. The Contractor shall adhere to the SWPPP in accordance with OEPA Guidelines.

C. The SWPPP shall be updated and maintained throughout the Work.

D. A copy of the SWPPP shall be available at the Site.

E. The Owner has not submitted a Notice of Intent (NOI) for the Work as the disturbed area is less than 1 acre. The Contractor is not required to apply for coverage as a co-permittee.

END OF SECTION

SECTION 01800
CONSTRUCTION SURVEY WORK

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the furnishing of all labor, materials, equipment, and services necessary for the completion of Construction Survey Work in accordance with the Contract Documents.

B. This Work consists of the layout of all lines and grades shown on the Drawings or as altered or modified by the Engineer, control survey and of miscellaneous survey work related to construction of the project.

1.02 PROJECTION

A. The Contractor shall protect and preserve the established reference points and monuments.

B. Whenever monuments are encountered in the line of Work, whether shown on the Drawings or not, the Contractor shall notify the Engineer in writing at least 24 hours in advance of moving same, and under no circumstances is such a stone or other monument to be removed or disturbed by the Contractor or by any of his men without a written order of the Engineer and only when a registered surveyor representative of the Owner is present.

1.03 REPLACEMENT OF LOST SURVEY POINTS

A. Whenever a reference point or monument is lost or destroyed or requires relocation, the Contractor shall, at his own expense, accurately relocate and replace all such points so lost, destroyed, and moved.

1.04 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. Layout Sheets including, but not limited to, Benchmarks both temporary and permanent and Pipeline layout staking.

b. Field Notes and survey log.

c. Profile over Proposed Tunneled, Jacked, or Bored Pipe.

d. Certified Survey of Tunneled, Jacked, or Bored Pipe.

B. Contractor shall provide the Engineer and Resident Project Representative, no later than five working days prior to installation, all Logs, reports, field notes, drawings and documentation as specified shown on the Drawings or directed.

C. No pipeline or related Work shall be considered for payment until all logs, reports field notes drawings and documentation as specified, shown on the Drawings or directed has been submitted to the Engineer or Engineers representative.

PART 2 PRODUCTS

2.01 CONSTRUCTION STAKING

A. All construction points shall be marked with a wooden hub and nail or a PK nails in concrete and asphalt pavements and walks.

B. All points located in areas of heavy underbrush, inaccessible or limited site distance shall be identified with a wood lath extending a minimum of 3 feet above the ground.

C. All points located in paved surfaces shall be clearly marked with paint. Contractor shall obtain written permission from owner to use paint for marking.

PART 3 EXECUTION

3.01 COORDINATION

A. The Contractor shall provide field forces necessary to lay out the location, alignment, elevation, and grade of the Work shown on the Drawings and in conformance with the control points and benchmarks shown on the Drawings.

B. The Contractor shall use competent personnel and suitable equipment for the layout of the Work required. If the layout Work involves more than a few simple distance and elevations from established reference points, the Contractor shall employ a Registered Surveyor to supervise the layout Work.

C. Contractor shall furnish the necessary labor to assist the Engineer in checking the installation, if required.

3.02 EXISTING CONNECTION POINTS

A. The Contractor shall verify critical elevation points of the existing utilities prior to commencing installation of Work. Critical points shall include all points where new Work connects to existing utilities and existing utilities that could be conflicts with Work. All data shall be provided to the Engineer before commencing Work.

3.03 RIGHTS-OF-WAY AND EASEMENTS

A. Rights-of-way or easement(s) shall be staked at points along the boundaries so that at least two stakes can be seen distinctly from any point along the boundary line. The staking shall not exceed 200-feet in any direction. All points of change in width or direction of the rights-of-way or easement(s) boundary line shall be staked.

B. When the Contractor performs construction and the zone of influence is within 10-feet of a rights-of-way or easement(s) boundary line, they shall place stakes properly identifying points of change in width or direction of the boundary line and at points along the boundary line not to exceed 25-feet.

3.04 PAVEMENT

A. The Contractor shall establish a layout for location and grade on both sides of the road and 5-feet off the edge of the pavement or back of curb. Layout line shall consist of stakes set at station intervals necessary for the topography and environment to assure conformance to planned line and grade. Stakes shall be set at a minimum every 50-feet, at all vertical and horizontal points of curvature and points of tangent, and at all vertical high or low points.

B. Stakes for line and grade of pavement and curb shall be set at station intervals necessary for the topography and environment, not to exceed 50-feet, and at low and high points of vertical curves to assure conformance to planned line and grade.

3.05 PIPE IN OPEN CUT

A. The Contractor shall utilize a laser beam for establishing line and grade when installing pipeline in open-cut construction. In order to maintain control during pipeline installation and to obtain the required field data for the record documents (G.C. 6.19) the Contractor shall establish construction and layout stakes. These stakes shall be based on the contract documents and the survey control data as provided by the Engineer.

B. The construction staking shall be placed along the pipeline route at and at location of new manholes, valves, deflections both vertical and horizontal and as specified, shown on the Drawings or as directed. All construction layout stakes shall be offset at a minimum of 10-feet and at a right angle to the pipe line route. Layout shall be referenced to the downstream manhole or valve, in addition it may reference survey of baseline stationing.

C. Contractor shall provide to the Engineer, no later than five working days prior to the installation of the pipeline, all information of the completed construction layout staking. This information shall include but not be limited to stationing, elevations, control points, project coordinates, offset direction and distance for all deflections both horizontal and vertical, manholes and all other points as specified, shown on the Drawings and directed by the Engineer.

D. The grade of pipe in open-cut, whether placed by laser beam or other approved methods, shall be checked using surveying equipment. The Contractor shall have a surveyor’s level and level rod on the Site at all times when pipeline and appurtenances are being installed. The level rod shall be equipped with an attached “shoe” extension on the bottom for placing on the pipe invert. The pipe invert elevation shall be checked at a maximum of 50-feet intervals or more often as directed by the Engineer. Checks will be performed by the Contractor and results, including but not limited to layout station shall be recorded in contractor’s field log.

E. The Contractor shall furnish all equipment and labor and check his alignment from the offset stakes. Contractor shall record all information in the log.

F. Any inspection or checking of the Contractor's layout by the Engineer shall not relieve the Contractor of his responsibility to secure the proper dimensions, grades, and elevations of the Work.

3.06 PIPE INSTALLED BY DIRECTIONAL DRILLING

A. The Contractor shall utilize, as a minimum, RF (radio frequency) transmitter mounted inside the drill bit to track line and grade when installing pilot borehole in directional drilling construction. In order to maintain control during pipe installation and to obtain the required field data as specified, shown on the drawings or directed; the Contractor shall establish construction line stakes. These stakes shall be based on the contract documents and the survey control data as provided by the Engineer.

B. The construction line staking shall be placed along the centerline of pipeline route and at manholes, valves, deflections, PC and PT both vertical and horizontal and as specified, shown on the drawings or as directed. In addition, offset staking shall be provided at all manholes, valves, deflections and any place of excavation at a minimum of 10-feet and at a right angle to the pipeline route. Staking shall be referenced to the downstream manhole or valve, in addition it may reference survey of baseline stationing.

C. The depth and alignment of directional drilling pilot hole for pipe shall be checked at each drill rod, using a walkover system or wireline system. The Contractor shall have a surveyor's level and level rod on the Site at all times to confirm ground elevation and borehole elevation. The pipeline elevation and alignment shall be checked at a maximum of 25-feet intervals or more often as directed by the Engineer. Checks will be performed by the Contractor and results, including the layout station the elevation was checked, and recorded in contractor's log. The Contractor's logs must be submitted to the Engineer prior to receiving any payment for the Work.

D. Any inspection or checking of the Contractor's layout by the Engineer shall not relieve the Contractor of their responsibility to secure the proper dimensions, grades, and elevations of the Work.

3.07 TUNNELING, JACKING OR BORING PIPE

A. Control of line and grade of pipe Work installed in tunnel or by jacking or boring shall be the responsibility of the Contractor.

B. The line and grade of pipes installed shall be checked from lines and elevations established in the pipe and the construction shaft by a registered surveyor.

C. The Contractor shall furnish, install, and adjust ready for use such equipment as required to check at any time the line and grade of pipe or tunnel liner being installed.

D. Should the pipe or the tunnel liner deviate more than 0.06-feet from the proposed grade or 0.25-feet from the proposed line, the Contractor shall immediately make adjustments necessary to bring the installation back to the proposed location.

E. Upon completion of a section of pipe or tunnel liner, the Contractor shall provide the Engineer with a certified survey by a registered surveyor showing the location and invert elevation of the installation at a maximum of 50-feet intervals.

F. Prior to construction of sewers by tunneling, jacking, or boring, the Contractor shall provide the Resident Project Representative with ground elevations above the centerline of the proposed sewers taken at 25-feet interval stations, shaft locations, and manhole locations.

G. The Contractor shall establish temporary benchmarks outside the tunnels zone of influence, a minimum of 50-feet each side of centerline, before commencing construction. Temporary benchmarks shall be a maximum of 2,000-feet apart with a minimum of two benchmarks per tunnel run. The Contractor shall determine the final elevation of all original benchmarks shown on the Contract Drawings at the project completion.

3.08 LOCATION OF STRUCTURES AND UNDERGROUND PIPING

A. The location of new structures and underground utilities shall be based on the dimensions, coordinates, and requirements shown on the Drawings or specified.

B. If it is stated on the Drawings or specified that the location and/or elevation of the new structure or underground piping shall depend on the location of existing underground or otherwise hidden facilities, those existing underground or hidden facilities shall be located by the Contractor prior to his determination of the location and/or elevation of the new facilities. This requirement shall override any other specific location dimensions or coordinates shown on the Drawings for that structure or piping.

C. If the location or elevation determined by the Contractor, in accordance with the above requirements, appears to cause conflicts with existing structures or utilities or appears to potentially cause functional issues with either the existing or new structures or utilities, the Contractor shall notify the Engineer immediately.

D. In no case, shall coordinates or other location information be extracted or interpolated from the electronic CAD files that may be provided to the Contractor by the Owner or Engineer without the specific approval of the Engineer.

3.09 CURB AND GUTTER ELEVATIONS

A. In locations where the existing curb and gutter shall be removed as part of the Work, the Contractor shall be responsible for reconstructing the existing curb and gutter to match existing alignment, elevations and grades. The Contractor shall be responsible for collecting existing curb and gutter elevation information prior to commencing the Work.

3.10 BENCHMARKS/VERTICAL CONTROL

A. Benchmarks have been set for survey and construction reference purposes.

B. The Contractor shall protect and transfer these benchmarks as needed to complete the Work.

3.11 HORIZONTAL CONTROL

A. The centerline stationing provided is not based upon physical control points found or established as part of the design.

B. The Contractor shall establish horizontal control as necessary.

PART 4 SPECIAL PROVISIONS

4.01 REGISTERED SURVEYOR

A. The Contractor shall employ the services of a registered surveyor for the initial layout and staking of the project. The Registered Surveyor shall be utilized at any time when reestablishing control points, elevations and on any redesign or extension of the Work. All survey Work shall be as specified, shown on the drawings or as directed.

4.02 PRESSURE PIPE ELEVATIONS

A. Any deviation from the plan pipe elevations shall be brought to the attention of the Engineer, to permit the Engineer to evaluate the impact of the elevation modification upon air valve release placement.

B. The force main elevations are intended to provide controlled grades to permit the force main to expel air at air release valves. Deviation from the elevations provided may affect the performance of the force main, and any changes in grade should be reviewed by the Engineer.

4.03 CONSTRUCTION BENCHMARKS

A. In areas where vertical control benchmarks have not been provided, the Contractor shall set temporary benchmarks (hubs) at 200-foot intervals.

B. Any benchmarks lost during the work may be replaced if so directed by the Engineer.

C. The Contractor shall submit a bench circuit (forward and return), closing within 0.01’ to the engineer for the record.

D. The bench circuit shall be performed under the supervision of a surveyor registered in Ohio.

END OF SECTION

SECTION 01810
VIDEO RECORDING

PART 1 GENERAL

1.01 SCOPE

A. Under this Section the Contractor shall furnish all personnel, transportation, recording equipment, power, and materials to produce color video records of existing topography along all pipeline routes and designated haul roads, in designated residences, and as directed.

1.02 SCHEDULE OF WORK

A. Unless otherwise directed in writing by the Engineer, video recording shall be scheduled in conformance with the following:

1. No recording shall be started on any portion of the Work until that portion of the Work is under Contract unless otherwise directed by the Owner.
2. Recording shall not precede excavation for construction by more than three months.
3. Video recording shall be performed only when foliage is visible on trees, except as authorized by the Engineer.
4. Video recording shall not be performed when more than 10% of the ground is covered with snow or leaves, unless authorized by the Owner.

B. Before proceeding with the Work, the video recording Contractor shall consult with the Engineer concerning the following:

1. Scheduling recording to precede construction.

C. All recording shall be completed on a section of Contract before the Contractor starts excavation or places material or equipment in that section.

D. In areas where public utilities are to be relocated or replaced, a second video recording shall be made after the public utility has concluded their work but before the Contractor commences operations.

E. The Owner shall obtain permission for the recording crew to enter private property not included in an easement. The Contractor shall give the Owner sufficient prior notice to obtain the permission.

1.03 DEFINITIONS

A. Video Recording - Zone of Influence - Shall include producing video records as specified herein for the zone of influence. The zone of influence shall be defined as all surface area within street rights-of-way or easements in which project is to be installed or

within areas 50 feet on each side of a proposed utility centerline, whichever is greater, and additional features in contiguous areas as specified or directed.

B. Video Recording of Buildings - Entering - Shall include moving video equipment into buildings or residences (including attached or separate garages) designated by the Engineer for the purpose of recording existing conditions therein.

C. Video Recording of Building - Panels - Shall include video recording of designated panels of buildings. Panel as used herein shall mean the full surface of a room wall, ceiling, or floor or the outer side of a building not viewable in any zone of influence recording.

1.04 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

a. Provide a minimum of three copies of the video.

PART 2 PRODUCTS

2.01 VIDEO RECORDING

A. Displays - All video shall, by electronic means, display (visible on the playback viewer) continuously and simultaneously generated transparent digital information which shall include the date and time of recording, as well as the corresponding planned station numbers. The date information shall contain the month, day, and year. The time information shall consist of hours, minutes, and seconds, separated by punctuation marks. Below the stationing, periodic transparent alpha/numeric information shall appear. The information shall consist of the name of the project, name of area covered, direction of travel, viewing side, and any other pertinent data.

2.02 VIDEO OUTPUTTING

A. Video recording shall be a digital file format such as MPEG, MP3, MP4, Wave or WMV or other current standard file formats as approved by Engineer.

B. The electronic file organization shall reasonably match the project stationing with file names including the station number and street names.

C. The electronic files shall be stored on a single solid-state memory device, such as a DVD disc or jump/thumb drive, external hard drive. Solid state memory devices shall have a USB for connection to a computer. The memory volume on the storage device shall be adequate to store the electronic video files in an unzipped capacity along with any associated or embedded data files.

2.03 AUXILIARY LIGHTING

A. Auxiliary lighting shall be used wherever necessary to ensure clarity of picture.

PART 3 EXECUTION

3.01 PERSONNEL

A. The Work shall be performed by competent personnel with knowledge of the procedures and methods to produce satisfactory records as specified herein.

3.02 PRODUCTION

A. Recording shall be composed in such a manner that Filming shall, in general, proceed in the direction of the project stationing.

B. Recorded Contents:

1. All houses or buildings and other readily recognizable objects as required shall be identified visually in such a manner that they can be referenced to the stationing of the project. Objects selected shall be at intervals not exceeding 100 lineal feet and shall include all houses and buildings identified by house numbers.

2. Within the zone of influence, the recording shall include but not be limited to all sidewalks, driveways, ditches, parkways, lawns, inlets, culvert pipe ends, trees, shrubs, fences, houses, and buildings that could conceivably be affected by the Contractor's operations. The video shall call attention to existing cracks or uneven areas in walks and driveways, damaged lawns, trees or shrubbery, broken or missing inlet castings, deteriorated fences, and, where feasible, broken or plugged culvert pipes.

3. Within street rights-of-way, the recording shall include but not be limited to all pavement, curbs and inlets, mailboxes, traffic signs, and street signs. The video shall call attention to damaged mailboxes, signs, curbs and inlet castings. Damaged areas in pavements over proposed project or in pavements scheduled for resurfacing need not be referred to.

4. Video recording for designated residences shall include documentation of surface conditions inside and outside of the building prior to starting project construction.

C. Control of Picture Quality - The camera carrier shall travel at a low speed to ensure against blur or distortion of the recorded pictures. A maximum rate of 48-feet per minute is recommended.

3.03 OWNER REVIEW

A. As the video recording work progresses, the Contractor shall deliver completed sections to the Owner and Engineer. The Owner and Engineer will review the recordings and determine if they are acceptable for clarity and coverage. The recording may be rejected if the picture is of poor quality (i.e., blurred, distorted, too light, too dark, improper color), insufficient coverage, or does not meet specified requirements.

B. The area of rejected recording shall be rerecorded by the Contractor and reinserted in the electronic file in the proper sequence.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 02110
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes demolition of existing structures and removal of pavement, piping, and equipment necessary to clear space for new construction and/or to rehabilitate existing construction.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Information for the Record:

a. The Contractor shall submit, as specified, a copy of a signed permit from the owner of the property upon which the debris, removed under this Section, will be disposed.

b. Dust and noise control measures

c. Record documents, in accordance with the General Conditions, and photograph or video recording indicates the location of, but not limited to, the following existing, new, and abandoned:

1) Utilities.

2) Mechanical.

3) Electrical.

4) Structural.

5) Any embedded items.

d. Inventory and documentation list for removed and salvaged materials for the Owner.

1.03 QUALITY ASSURANCE

A. Contractor shall execute the Work in compliance with all federal, state, and local codes. Any removal or demolition shall not leave the Owner in violation of any such regulations or codes unless approved by the Owner and Engineer.

1.04 PROTECTION

A. Structures shall be removed in such a manner as not to damage any portions of the existing structure which are to remain in place.

PART 2 PRODUCTS

2.01 FILL MATERIAL

A. Fill material shall be in accordance with Section 02200.

PART 3 EXECUTION

3.01 COORDINATION

A. Demolition work extending beyond the limits as specified, shown on the Drawings, or as required, will be considered unauthorized. The Contractor, at no additional cost to the Owner, shall repair said damage to a condition equal to or better than existed prior to commencement of the Work.

B. Existing structures and equipment which are damaged in appearance or function by performance of demolition work shall be replaced or repaired, at Owner's discretion and to an approved condition, by the Contractor at no increase in Contract Price.

3.02 PAVEMENTS, SIDEWALKS, CURBING AND SIMILAR STRUCTURES

A. Removal of existing pavements, sidewalks, curbing, and similar structures shall end at an existing joint or a sawed joint per ODOT 202. Sawed joints shall be straight, neat, and free from chipped or damaged edges.

A. For removal of non-reinforced concrete, the minimum depth of saw cut shall be 3 inches.

B. For removal of reinforced concrete, the depth of saw cut shall be sufficient to cut the steel unless specified otherwise.

C. If the concrete is coated with a bituminous surface or other material, the depth shall be sufficient to cut into the concrete, not including the coating depth, as specified above.

3.03 EXCAVATION OF RIGID PAVEMENT

A. The Contractor shall excavate rigid pavement, consisting of concrete or concrete base with a wearing surface of brick or bituminous concrete per ODOT 202, wherever such excavation is required for the purposes of this Contract.

B. Pavement shall be excavated to neat lines and, unless otherwise specified in Part 4 of this Section, only to widths required for trenches for pipe laying and for construction of structures. Adequate provision shall be made to prevent settlement and breakage of pavement beyond the approved limits of excavation. Concrete pavement and sub-base shall be cut with a concrete saw in conformance with Subsection 3.02.

3.04 MANHOLES, CATCH BASINS, INLETS AND SIMILAR STRUCTURES

A. Existing manholes, catch basins, inlets, and similar structures designated to be removed shall be completely removed.

B. Manholes, catch basins, inlets, and similar structures designated to be abandoned shall be removed to an elevation of at least 3 feet below the finished subgrade or ground surface. The remaining void shall be filled with special backfill material compacted to 100% optimum density per ASTM D698 or controlled density fill, CDF if permitted by the Engineer. All sewer openings in manholes located on sewer lines that are not to be filled, shall be plugged with 8-inch minimum thickness masonry plug.

C. Sewers designated to remain in service and connected to structures indicated to be removed or abandoned shall be rebuilt through the area with new pipe. Sewer flow shall be maintained between removal and replacement operations. Abandoned sewers shall be sealed and made watertight with approved precast stoppers or masonry bulkheads.

D. All castings or hydrants salvaged from abandoned or removed structures shall remain the property of the Owner, if requested by the Owner, and shall be cleaned and transported by the Contractor to a site designated by the Owner or incorporated in the Work where called for on the Drawings, scheduled, or so directed. If Owner decides salvaged materials are not wanted, the Contractor shall dispose of them at no additional cost to the Owner.

3.05 RESERVED

3.06 GUARDRAIL AND FENCE

A. Where so required by the Drawings, existing guardrail and fence shall be carefully dismantled and stored for reuse or for salvage by the Owner.

B. Wood posts and other materials not considered salvageable by the Owner shall be disposed of by the Contractor.

3.07 RESERVED

3.08 RESERVED

3.09 PRIVATE SIGNS

A. Private and commercial signs shall be carefully removed and relocated as directed by the Owner.

3.10 DISPOSAL OF DEBRIS

A. All debris resulting from demolition operations; i.e., broken concrete, masonry, pipe, miscellaneous metal, trees and brush, equipment, etc., shall be trucked from the Work site by the Contractor and disposed of at spoil sites in a legal manner, in full compliance with applicable codes and ordinances.

B. The Contractor shall police the hauling of debris to ensure that all spillage from haul trucks is promptly and completely cleaned up.

3.11 BACKFILLING

A. All trenches, holes, and pits resulting from the removal and abandonment of any structure or obstruction shall be backfilled and compacted in accordance with the requirements of Section 02200.

3.12 RESERVED

3.13 USE OF EXPLOSIVES

A. The use of explosives for the Work of removal of structures and obstructions is PROHIBITED.

3.14 PIPING REMOVAL

A. At the location where pipe removal stops, the remaining pipe end shall be capped. The cap must be pressure tight and restrained from movement due to pressures inside the pipe.

B. Piping removal includes, but not limited to, all hangers, stands, and anchoring devices.

3.15 OPENINGS AND PATCHING

A. The Contractor shall fill all openings created by equipment, piping, and conduit removals.

B. The Contractor shall patch any marred surfaces created by equipment and piping removals.

C. All filling and patching work shall be performed in accordance with the specifications.

D. All anchor bolts shall be removed, and holes filled or cut off flush.

PART 4 SPECIAL PROVISIONS

4.01 SCHEDULE OF REMOVALS

A. The following list of items once removed shall remain the property of the Owner and shall be delivered to the Owner-designated location.

1. Flanged Piping
2. Castings

4.02 FORCE MAIN REMOVAL

A. As shown on the Drawings, existing force main, accessories, and appurtenances shall be removed within limits shown on the Drawings or as specified.

B. The removal shall include removal and disposal, or aggregate backfill, pipe bedding and control density backfill.

C. Existing pipe removed shall become the property of the Contractor and shall be properly disposed of in accordance with the requirements of this Section.

D. At locations where the pipe removal is terminated, a water-tight sewer plug shall be placed in the end of the pipe to remain.

4.03 FORCE MAIN ABANDONMENT

A. Grouting of abandoned force mains is not required.

4.04 VALVES, BOXES AND VALVE STRUCTURES ABANDONED

A. Manholes and valve box castings to be abandoned in place shall be removed to 18 inches below final grade and filled with low-strength mortar backfill in accordance to the bottom of the pavement typical section or to 12 inches below final grade in non-paved areas. The pavement section shall be removed and replace an additional 18 inches horizontally outside of the casting area. The void created by the removal of the casting, structure and valve box shall be backfilled to match the surrounding pavement section or as specified for non-pavement areas.

B. Valve boxes shown on the plans may also have existing manhole castings, frames, manhole structures around the existing valves. The abandonment of valves shall include the removal of all existing manhole casting, frame, and structure walls to be specified depths as associated with that particular valve.

C. Valve shall be abandoned in the off position when possible.

4.05 VALVES AND STRUCTURES REMOVED

A. Valves, boxes and structures to be removed shall be removed in their entirety or as approved otherwise by the Engineer.

END OF SECTION

SECTION 02200
EXCAVATION AND BACKFILL

PART 1 GENERAL

1.01 SCOPE

A. This Section includes all excavations and related Work for the construction of the designated structures, pipelines, and other incidental Work.

B. Excavation includes the Work of making all necessary excavations for the construction of all Contract Work; of furnishing, placing, and use of sheeting, shoring, and sheet piling necessary in excavating for and protecting the Work and workers; of doing all pumping and fluming necessary to keep the excavation free from water; of providing for uninterrupted flow of existing streams, treatment plant processes, drains and sewers; of damming and cofferdamming where necessary; of supporting and protecting existing structures, pipes, conduits, sewers, culverts of all types of materials of construction, of supporting and protecting railroad tracks, posts, poles, wires, fences, buildings, and other public and private property adjacent to the Work; of removing and replacing existing sewers, culverts, pipelines, and bulkheads where necessary; of removing after completion of the Work all sheeting and shoring not necessary to support the sides of excavations; of removing and disposing of all surplus excavated material or material under structures that does not meet the soil design bearing capacities; of doing all backfilling, of compacting backfill to limits specified or ordered by the Engineer; and restoring all property damaged as a result of the Work involved in this Contract.

C. The Work includes obtaining and transporting suitable fill material from off-site when on-site material is not available.

D. The Work includes transporting surplus excavated material not needed for backfill at the location where the excavation is made, to other parts of the Work where filling is required, or disposal of all surplus on other sites selected by the Owner.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Sieve Analysis (ASTM C136) - One test for each material source.

   b. Submit a moisture density curve (ASTM D698) for each type of material used for backfill. Test shall be referenced to appropriate sieve analysis test. The maximum dry weight and optimum moisture content shall be indicated.

   c. Controlled Density Fill Material - Design Mix and Certified Test Results.

d. Test results for conformance with specified "Compaction Requirements":

1) Retests shall be referenced to the corresponding failing test.

e. Stripped soil and topsoil test per ODOT 659.

2. Information for the Record:

a. When excess excavated material is disposed at locations off the Site, the Contractor shall obtain and submit written permission from the Owner of the property upon which the material is to be placed.

b. Details of the proposed method of installation and construction of dewatering wells.

c. Schedule of the proposed sequence of dewatering well construction.

d. Dewatering logs.

e. Submit method for abandoning dewatering well.

PART 2 PRODUCTS

2.01 TOPSOIL

A. Soil stripped from the Site shall consist of loose, friable, loamy topsoil without admixture of subsoil or refuse. It shall be reasonably free from peat, muck, roots, hard clay, coarse gravel, stones, weeds, tall grass, brush, sticks, litter, ground debris and wood products. The stockpiled soil shall be subject to the approval of the Engineer.

B. Topsoil provided shall be in accordance with ODOT 653 and be loose, friable, loamy soil without admixture of subsoil or refuse. In order for the topsoil to be considered loamy the fraction of topsoil, passing a No. 10 sieve, shall contain not more than 40% clay. Topsoil shall contain not less than 4% nor more than 20% organic matter as determined by loss on ignition of oven-dried samples to constant weight at 212 degrees F.

C. Excess material shall be removed from Site, unless directed otherwise by Owner or Engineer.

2.02 SELECTED BACKFILL

A. Selected backfill shall be clean excavated soil. It shall be free of rock and foreign debris of any kind and shall be tested in accordance with ASTM C136 sieve screen analysis and ASTM D2487 soil classification. The material's use as selected backfill shall be approved by the Engineer.

B. Engineer may waive material testing of selected backfill. Such waiver shall apply only to the designated location and the source of the selected backfill. Such waiver shall not apply to excavated soil from locations not so designated.

2.03 SPECIAL BACKFILL MATERIAL

A. Special backfill material shall conform to ODOT 304.

2.04 AGGREGATE BEDDING MATERIAL

A. Aggregate bedding material shall be well-graded durable crushed gravel, crushed stone or meeting the graduation requirements of ODOT Table 703.01-1.

B. Aggregate bedding material shall be as follows:

1. For PVC, HDPE or plastic pipe diameters 10 inches and less, bedding material shall be No. 8 (nominal size 3/8-inch to sieve No. 8).

2. For PVC, HDPE or plastic pipe diameters over 10 inches, bedding material shall be No. 67 (nominal size 3/4-inch to sieve No. 4) or No. 8 (nominal size 3/8-inch to sieve No. 8).

3. All other aggregate bedding shall be No. 8, No. 67 or No. 57 stone. No. 57 (nominal size 1-inch to sieve No. 4) shall not be used for bedding PVC, HDPE or plastic pipes.

2.05 LOW STRENGTH MORTAR BACKFILL (LSM)

A. Low strength mortar backfill shall be a cement base fill material that can be deposited in a fluid state. It shall be composed of portland cement and approved filler material, sand and water. The mixture and shall have a compressive strength of 100 psi minimum and 500 psi maximum:

B. LSM material shall be in accordance with ODOT Item 613, Type 1 or Type 2.

C. The Contractor shall select and submit for approval a mix design appropriate for the proposed work.

2.06 SLOPE AND CHANNEL PROTECTION

A. Riprap shall be in accordance with ODOT 601.04

B. Crushed aggregate slope protection shall be in accordance with ODOT 601.06.

C. Dumped rock fill shall be in accordance with ODOT 601.08.

D. Rock Channel protection shall be in accordance with ODOT 601.09.

PART 3 EXECUTION

3.01 COORDINATION

A. Construction Through Highways:

1. Permits - The Owner will obtain permits required for open cut construction through highways. Contractor shall be responsible for compliance with and furnishing any item required by permit such as Bond Security.

2. Notification - The Contractor shall give written notice to appropriate officials of the affected Department of Transportation, City, or County at least five days,

not including weekends and holidays, before starting construction under highways and as required under other roadways.

3. Contractor shall comply with standard permit conditions of controlling authority and special provisions noted in Part 4 of this Section.

B. Test Pits:

1. The Contractor shall perform exploratory test pits as may be necessary or ordered by Engineer in advance of excavation to determine the exact location and elevation of subsurface structures, pipelines, and conduits which are likely to be encountered and shall make acceptable provision for their protection, support, and maintenance in operation. Vacuum excavation (pot hole) may be used if adequate information can be obtained by such method. No additional payment shall be made for test pits.

2. Conflicts with existing utilities not located, as specified, far enough in advance of construction, shall not be considered as a basis for delay claims or additional payment.

3.02 REMOVING AND REPLACING TOPSOIL

A. Removal

1. Excavation for trenches in which pipelines, sewers, conduits and other utilities are to be installed: The Contractor may elect to strip soil and stockpile unless the Contract Documents direct stripping and stockpiling prior to excavation.

2. General excavation, other than trench excavation: The Contractor shall remove, and stockpile the top 12 inches of the existing soils from all areas of construction including, but not limited to, excavation and embankment areas, stockpile sites, construction yard, storage areas, etc.

B. Replacing stockpiled soil and topsoil

1. Trench excavation areas disturbed as a result of trenching operations and which are to be restored with grass or other plantings shall be free of peat, muck, roots, hard clay, coarse gravel, stones, weeks, tall grass, brush, sticks, litter, ground debris and wood products. The surface shall be mechanically conditioned after removal of debris. After surface is prepared, it shall be covered with topsoil or stockpiled soil material to a minimum depth of 4 inches. Topsoils and stockpiled soil material shall meet the requirements specified herein and be tested.

2. General excavation areas which are to be restored with grass or other plantings shall be free of peak, muck, roots, hard clay, coarse gravel, stones, weeks, tall grass, brush, sticks, litter, ground debris, wood products and construction debris including loose stone. The surface shall be mechanically conditioned after removal of debris. After surface is prepared it shall be covered with stockpiled soil and then have a minimum of 4 inches of topsoil placed.

C. The Work shall be in accordance with applicable portions of ODOT items 652 and 653.

3.03 GENERAL EXCAVATION

A. All necessary excavation shall be performed to accommodate the completion of all Contract Work.

B. The Drawings show the horizontal and the lower limits of structures, pipelines, sewers and other utilities. The methods and equipment used by the Contractor when approaching the bottom limits of excavation and when trimming the bottom of the excavation to a smooth surface shall be selected to prevent disturbing the soil below the bottom limits of excavation.

C. Excavation which is carried below the bottom limits shall be classified as Unauthorized Excavation, unless said excavation has been authorized by the Engineer prior to each occurrence.

D. Unauthorized excavation shall be filled with CDF material to the bottom limits. Under circumstances where structural integrity is not a factor, the Engineer may allow the filling of unauthorized excavation with pipe bedding material or special backfill material compacted to 100% density, as specified under compaction requirements.

E. Sheeting, Shoring, and Bracing:

1. The Contractor shall furnish and install adequate sheeting, shoring, and bracing to maintain safe working conditions, and to protect newly built work and all existing adjacent and neighboring structures and utilities from damage by settlement.

2. Sheeting, shoring and bracing shall be arranged so as not to place a strain on portions of completed Work until the construction has proceeded far enough to provide ample strength. Sheeting and bracing may be withdrawn and removed at the time of backfilling, but the Contractor shall be responsible for all damage to newly built Work and adjacent and neighboring structures and utilities.

3. Sheeting, shoring and bracing shall be removed or cut-off at the time of backfilling to avoid problems with finish grade or future excavation.

F. Construction Sheeting Left in Place:

1. The Contractor shall furnish, install, and leave in place, construction sheeting and bracing when specified or when indicated or shown on the Drawings.

2. Construction sheeting and bracing, placed by the Contractor to protect adjacent and neighboring structures and utilities, may be left in place if desired by the Contractor. All such sheeting and bracing left in place, shall be included in the cost for excavation.

3. Any construction sheeting and bracing which the Contractor has placed to facilitate his work may be ordered, in writing by the Engineer, to be left in place. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating an obligation on his part to issue such orders. Failure of the Engineer to order sheeting and bracing left in place shall not relieve the Contractor of his responsibility under the Contract.

G. Removal of Water:

1. The Contractor shall at all times during construction provide and maintain ample means and devices with which to remove promptly and dispose of properly all water entering the excavations or other parts of the Work and shall keep said excavations dry until the structures to be built or pipelines to be placed therein are completed. No water shall be allowed to rise over or come in contact with concrete or masonry until the concrete and mortar has attained a satisfactory set, except in cases where the concrete has been tremied into place with the approval of the Engineer. Water shall not be allowed to rise above the bottom of the bedding stone prior to placing pipe. In waterbearing sand, well points and/or sheeting shall be supplied, together with pumps and other appurtenances of ample capacity to keep the excavation free of water and in compliance with government regulations.
2. The Contractor shall dispose of water from the Work in a suitable manner without damage to adjacent property or structures and in compliance with all regulations.

3.04 TRENCH EXCAVATION

A. Excavation for trenches in which pipelines, sewers, conduits and other utilities are to be installed shall provide adequate space for workers to place and joint the pipe properly. The trench shall be kept to a minimum width. The width of trench at the top of the pipe shall comply with the limits specified or shown on the Drawings.

B. Excavation shall be to the depth necessary for placing aggregate bedding material under the pipeline, sewer, conduits and other utilities as shown on the Drawings. If over excavation occurs, the trench bottom shall be filled to grade with compacted aggregate bedding material.

C. The amount of trench open at any one time in advance of completed Work shall be limited to the minimum necessary for conducting laying operations.

D. In general, backfilling shall begin as soon as the pipeline, sewer, conduits and other utilities are in a condition to receive it and shall be carried to completion as rapidly as possible. New trenching shall not be started when earlier trenches need backfilling or the surfaces of streets or other areas need to be restored to a safe condition.

3.05 EXCAVATION OF UNSUITABLE MATERIAL

A. Unsuitable materials existing below the Contract bottom limits for excavation shall be removed as required by the Engineer. The Engineer may rely upon the independent laboratory retained on this Project when determining unsuitable soil conditions, removal and backfill. Such excavation shall be conducted at a time when the Engineer and independent laboratory are present and shall not exceed the vertical and lateral limits prescribed by both.

B. The voids left by removal of unsuitable material shall be filled with special backfill, pipe bedding material, or CDF material as listed in Part 4 or as prescribed by the independent laboratory and as approved and ordered by the Engineer. Special backfill or pipe

bedding shall be installed as described in this Section and in general shall be compacted to 100% density as specified under compaction requirements.

3.06 DISPOSAL OF UNSUITABLE AND SURPLUS MATERIAL

A. All excavated materials which are unsuitable for use in backfilling trenches or around structures, and materials excavated that are in excess of that required for backfilling and for constructing fills and embankments as shown on the Drawings, shall be disposed of by the Contractor at his expense and at sites provided by him as may be required, except that the Owner reserves the right to require the Contractor to deposit such surplus at locations designated by the Owner within a five-mile radius of the Work.

B. No surplus excavated material of any class shall be deposited in any stream or watercourse or be dumped on public property without the consent of the Owner. All spoil areas shall be left smooth, level, with drainage to a water course and proper erosion and runoff control shall be used.

3.07 BACKFILL AND COMPACTION

A. Pipe and Conduit Bedding - Unless otherwise directed, pipe, conduits and other utilities shall be installed in specified aggregate bedding material as shown on the Drawings and as specified.

B. Backfilling Under Existing Pipeline, Sewer, Conduits and Other Utilities - Where it is necessary to undercut or replace existing utility conduits and/or service lines, the excavation beneath such lines shall be backfilled the entire length with aggregate bedding material tamped in place in 6-inch layers to the required density. The aggregate bedding shall extend outward from the spring line of the conduit a distance of 2-feet on all sides and thence downward at its natural slope.

C. Backfilling with Selected Backfill - Unless otherwise specified or directed, material excavated in connection with the Work may be used for backfilling and other filling purposes, if it meets all requirements given elsewhere in this specification for selected backfill. No material shall be used for backfilling that contains stones, rock, or pieces of masonry greater than 12 inches, frozen earth, debris, earth with an exceptionally high void content, organic material, or marl. No large pieces of rock or masonry shall be deposited closer than 24 inches from the completed outside surface of any structure or pipe.

D. Backfill Immediately - All trenches and excavations shall be backfilled immediately after completion of construction therein, unless otherwise directed by the Engineer. Under no circumstances shall water be permitted to rise in unbackfilled excavation during construction or after pipe has been placed.

E. House Leads and water services shall not be backfilled until the pipe ends are referenced and the Engineer has measured the pipe for payment from mainline to termination and photographed as needed.

F. Backfilling around and over structures, pipelines, conduits and other utilities comprising the Work shall be carefully done by hand and tamped with suitable tools of approved

weight when within 2 feet of structures, pipeline, conduit and other utilities. Selected backfill or, where specified, shown on Drawings, or ordered by the Engineer, special backfill material shall be used in this area. The material shall be placed in uniform layers not exceeding 6 inches in depth up each side. Each layer shall be placed, then carefully and uniformly tamped to the specified density so as to eliminate the possibility of lateral displacement of pipe or structure.

G. Backfilling may be done by machinery after the backfill has been placed and compacted beyond 2 feet horizontally of structures, pipelines, conduits and other utilities and to a minimum depth of 1 foot above the tops of any buried structures, pipelines, conduits, and other utilities. The backfill material shall be deposited in horizontal layers, not thicker than one foot, and each layer shall be thoroughly compacted to the specified density by approved methods before a succeeding layer is placed. In no case, will backfill material from a bucket be allowed to fall directly on a structure or pipe and in all cases the bucket must be lowered so that the shock of the falling material will not cause damage.

H. Backfilling Under Pavement and Walks - Where existing or new pavement, driveway, parking lot, curb and gutter, or walk is over an excavation, special backfill material shall be used to backfill the entire excavation from the bedding to surface. The material shall be placed and compacted to the required density in accordance with one of the following methods:

1. The backfill material shall be deposited in 6-inch horizontal layers and each layer shall be thoroughly compacted to the proper density by approved compaction method before a succeeding layer is placed.

2. No method of compaction which alters the gradation of the special backfill material or prevents compaction testing by standard testing methods shall be used.

I. Backfilling with Controlled Density Fill Material (CDF) - Where called for on the Drawings, specified, or ordered, CDF material shall be used in lieu of special backfill or bedding material specified herein. Before placing CDF material, the Contractor shall take required measures to protect the Work against flotation.

J. Backfilling Under Structures - Where structural slabs, mats or footings are to be placed on a backfilled area, special backfill material shall be used unless otherwise noted on the Drawings. The backfill material shall be placed in 6-inch horizontal layers and each layer shall be thoroughly compacted to the specified density by approved methods before a succeeding layer is placed. Where backfill is to be placed on undisturbed side slopes steeper than one vertical to six horizontal, steps shall be formed into the slope before each layer of the backfill is placed. These steps shall be cut vertically at no more than 2-feet intervals and shall have a horizontal dimension of not less than 3-feet.

K. Prior to backfilling under structures the natural subgrade shall be evaluated at regular intervals in each direction by the independent testing laboratory to determine that the subgrade can obtain the design bearing capacity given by the “Structural Design Data” table on the Drawings. If the subgrade cannot obtain the design bearing capacity then

the testing laboratory shall submit a remedy to the Engineer for approval and for the Contractor to perform.

L. Clay Trench Bulkheads - Where trenches are dug through areas of lateral groundwater seepage or in areas below the groundwater table, the Contractor shall, if required by the Drawings, construct bulkheads within the trench at ordered intervals. Bulkheads shall consist of native clay soil or other fines.

3.08 COMPACTION REQUIREMENTS

A. In areas to be filled, after the top 12-inches of soil is stripped, then the undisturbed subgrade shall be compacted to not less than 100% of maximum dry density per ASTM D698 (Standard Proctor) prior to placing of fill.

B. Backfill placed under areas receiving concrete slabs, mats, footings, or within the interior of buildings shall be compacted to not less than 100% of maximum dry density per ASTM D698.

C. Backfill placed around structures where other structures, pipelines, or slabs are to be constructed shall be compacted to not less than 100% of maximum dry density per ASTM D698.

D. The material used to construct embankments and fills in locations other than under pavements, walks, structures, or slabs and around and over pipelines, shall be compacted to not less than 95% of maximum dry density per ASTM D698.

E. All other backfill, including backfill around and over pipelines, and backfill around structures not covered in Paragraphs B. and C. above, shall be compacted to not less than 95% of maximum dry density per ASTM D698.

F. The bottom of excavations upon which concrete slabs or structures are to be placed shall be compacted to obtain 100% maximum dry density per ASTM D698 in the top 12 inches.

G. All soil subgrade which will provide bearing support for pavements or curbs, shall be compacted to a width of 6 inches beyond the back of curb and to a depth of 12 inches below the bottom of excavation to a density of not less than 100% of maximum dry density per ASTM D698. All fill below the subgrade shall be compacted to not less than 98% of maximum dry density, unless specified otherwise.

H. Subgrade under the driveways and walks shall be compacted to a depth of 6 inches below the subgrade surface to density of not less than 100% of the maximum dry density determined by ASTM D698.

I. Subgrade under structures shall be compacted to a depth of 12 inches below bottom of excavation surface to a density of not less than 100% of the maximum dry density determined by ASTM D698.

3.09 COMPACTION TESTS

A. Trenches and excavation around structures shall be backfilled and consolidated in layers, as specified, to the existing ground surface. Initial test series for each type of

backfill material shall be continued until the method of consolidation employed has proven to attain the required compaction. Any change in the proven method of consolidations will require additional testing and field verification of compaction.

B. Subgrade below pavements, curbs, sidewalks, and structures shall be consolidated as specified. Compaction tests shall be performed to verify specified consolidation.

C. Subsequent tests or series of tests shall be in locations and at depths ordered by the Engineer.

3.10 RESERVED

3.11 RESERVED

3.12 RESERVED

PART 4 SPECIAL PROVISIONS

4.01 FIELD TESTING (MINIMUM REQUIREMENTS)

A. The laboratory shall perform the following field tests:

1. Trench Backfill - One test for every 200 cubic yards of backfill material.
2. Subgrade Compaction - One test for every 300 square yards of subgrade.
3. If directed by the Engineer, additional tests shall be performed for any of the above.

4.02 FREE BORES UNDER EXISTING UTILITIES

A. In locations where approved the Contractor may install new pipe by free bore methods by excavating under an existing utility.

B. The overburden material shall be removed from the utility and a minimum depth of soil may be removed under the utility.

C. The Contractor shall support the utility being crossed under from above grade as approved by the utility owner.

D. The new pipe shall be installed, bedded, and backfilled as soon as soil material is excavated.

E. Bedding material shall be carried to 12-inches above the utility being crossed.

END OF SECTION

SECTION 02552
PRECAST CONCRETE MANHOLES

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing precast concrete manholes, including drops and manhole stacks of types and at locations shown on the Drawings and scheduled.

B. This Section includes removing existing structures, additional excavation to widen and deepen trenches for manhole construction, furnishing and installing concrete of classes called for, portland cement mortar, reinforcing steel, precast concrete pipe integral base sections, bottom riser sections, transition sections, and riser sections, eccentric cones, flat slab tops and grade rings, flexible manhole connections, pipe for drop connections, manhole steps, manhole frames and covers, plugging lifting holes, pointing joints, joint wrap installing, forming channels through manhole bottoms, making watertight connections to new and existing sewers, and other work incidental to manhole construction and testing.

C. Additional product requirements are specified in Section 01350.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop drawings for Review:

   a. Manufacturer's Shop Drawings indicating physical dimensions, pipe openings, precast section arrangement, adjusting rings, castings, and joint details for each size and type of manhole components furnished for the project. Shop Drawing shall incorporate the planned elevations and details.

   b. Manufacturer's certification indicating that the manhole components and joints meet specifications for each production run for each size and type furnished.

2. Information for the Record:

   a. The Engineer may request test results to verify certification. Certification documents shall be according to the Source Quality Control of this Section.

PART 2 PRODUCTS

2.01 MATERIALS

A. Type of Manhole Sections:

1. Manhole Stacks - Manhole stacks shall mean 4-feet diameter manholes used for access to reinforced concrete manhole chambers and precast manhole riser tee sections.
2. Type I Manholes - Type I manholes shall mean 4-feet diameter manholes with precast integral base sections for sanitary sewers and either precast integral base sections or precast bottoms for storm sewers. Pipe connections to manholes shall be made with flexible water tight joints. Type I manholes are intended for installation of pipes 18-inch diameter and smaller unless noted otherwise.
3. Type II Manholes - Type II manholes shall mean manholes with 5-feet diameter precast integral base sections. Pipe connections to manholes shall be made with flexible water tight joints. Type II manholes are intended for installation of 21-inch through 30-inch diameter pipes unless noted otherwise.
4. Type III Manholes - Type III manholes shall mean manholes with precast integral base sections or precast bottoms that are larger than 5-feet diameter. The diameter of the bottom riser sections shall be as shown on the Drawings. Pipe connections to manholes shall be made with flexible water tight joints. Type III manholes are intended for installation of pipes where the additional wall area is needed for installation on flexible joints and of 36-inch through 48-inch diameter pipes unless noted otherwise.
5. Type IV Manholes - Type IV manholes shall mean manholes with cut-outs in the bottom riser sections installed on cast-in-place or precast concrete bases. The diameter of the bottom riser sections shall be as shown on the Drawings. Pipe connections above bottom riser section shall be made with flexible water tight joints. Type IV manholes are intended for installation on sewers 48-inch diameter and larger and on existing pipes where identified on Drawings.
6. Type S Manholes - S following manhole type shall mean the designated type manhole constructed with a precast flat slab top in lieu of a precast cone.

B. Precast concrete pipe manhole sections, integral base sections, transition sections, eccentric cones, flat slab tops, and adjusting rings shall conform to ASTM C 478. Reinforcing in transition sections shall be equal to that specified for wall sections of the larger diameter.

C. Joints shall be tongue and groove type with a gasketed seal type conforming to ASTM C443.

D. The standard length of riser sections shall be 48-inch. Lengths of 32-inch or 16-inch shall be used to meet required dimensions and as specified.

E. Openings for connecting pipes in riser sections, bottom riser sections, and integral base sections, and for access in flat slabs shall be pre-formed or cored by the manufacturer, except “cut-out” openings may be made in bottom riser sections for Type IV manholes. Cut-out openings shall be made immediately after the pipe is removed from the casting form. All cored openings for sewer pipe connections shall have flexible joints.

F. Precast integral base sections shall be of monolithic construction. Base flat slab floors or integral floors shall have a minimum thickness of 6-inch for risers up to and including 48-inch in diameter and 8-inch for larger diameters. A layer of reinforcement shall be placed above the midpoint, and shall have a minimum area of 0.12 square inch/linear feet in both directions.

G. Manhole sections shall be constructed with no pipe connection within 6 inches of a joint in the structure.

H. Manhole sections shall be clearly marked and identified with the manhole number, section placement order, casting date, trademark, name of the manufacturer, and location of the production plant.

2.02 ACCESSORIES

A. Manhole Steps - Manhole steps shall be of polypropylene plastic reinforced with a 1/2-inch No. 60 grade reinforcing rod. Steps shall be M. A. Industries Model PS-1, or equal.

1. Specified manhole steps shall be factory installed to provide a continuous ladder of 16-inch Center-to-Center rung spacing. Steps shall be placed in the forms and cast in pipe wall or placed immediately after the pipe is removed from casting and carefully mortared in place with non-shrinking mortar to ensure a watertight joint. Manhole step installation shall be in compliance with OSHA regulations. If the outer surface of the pipe wall is pierced the patch shall be completely covered with a bituminous sealer.

B. Manhole frames and covers shall be as shown on the Drawings and in conformance with requirements of Section 05540.

1. Where pressure tight manhole frames and covers are called for, threaded inserts shall be cast in eccentric cones or flat slab tops and holes formed or cored in adjusting rings to match bolt size and spacing specified for manhole casting.

C. Mortar:

1. Mortar used for the structures herein specified shall conform to ASTM C270 Type S, containing no masonry cement. The mortar shall be composed of one-part portland cement to two parts sand by volume.

2. Non-shrinking Mortar - Materials for non-shrinking mortar shall be Sauereisen F-100, Five-Star, or equal.

D. Cast-in-Place Concrete:

1. All cast-in-place concrete used for concrete bases and for forming channels in manhole bottoms shall be Class A as specified in Section 03300.

2. All concrete used for supporting precast concrete manhole bases shall be Class B as specified in Section 03300.

E. Reinforcing Steel - Reinforcing steel used in cast-in-place concrete shall meet the requirements of Section 03200.

F. Flexible Joints - Joints for precast pipe openings shall be “A-LOK X-CEL” as manufactured by A-LOK Products, Inc., “Kor-n-seal” as manufactured by National Pollution Control Systems, Inc., or equal in accordance with ASTM C923.

G. Pipe for Manhole Drops - Pipe for manhole drops shall conform to specifications of Section 02550 or Section 15210 for the required size and type shown on the Drawings.

H. Joint Wrap - Polyolefin backed exterior joint wrap used to cover the exterior side of joints shall be ConSeal CS212; Riser Wrap by Pipeline Seal & Insulator, Inc. or equal. Minimum width shall be 12 inches. Joint wrap shall include the use of brush or roller applied adhesive surface primer formulated for use with joint wrap. Seal shall meet the requirements of ASTM E1745, C-877, and ASTM C990.

I. Chimney seal shall be applied to the exterior of all manholes and shall cover the joint at iron casting, adjusting ring and lap over manhole riser/top section. Seal shall be HDPE heat shrink as manufactured by Pipeline Seal & Insulator, Inc. (Riser-Wrap) and CCI Pipeline System (Wrapid Seal), or equal.

J. Chimney seals which are installed on the interior of manholes will not be acceptable.

PART 3 EXECUTION

3.01 COORDINATION

A. Location and type of manholes installed shall be as shown on the Drawings or directed.

B. Construction shall be in conformance with details shown on the Drawings and as specified.

C. Excavation for manhole construction shall be prepared as directed in applicable paragraphs of Section 02200.

3.02 INSTALLATION OF INTEGRAL BASE SECTIONS

A. The manhole base may be placed on 6 inches compacted granular bedding material.

3.03 RESERVED

3.04 RESERVED

3.05 PRECAST CONCRETE RISER SECTIONS

A. The shortest length of riser section to be incorporated into the manhole shall be installed immediately below the eccentric cone section or the flat slab top.

B. Riser section joints shall be pointed and lifting holes filled with non-shrinking mortar.

C. Riser section exterior joints shall be wrapped and sealed with joint wrap as specified herein. Concrete shall be primed a minimum of two times. The first coat shall be

allowed to fill concrete depressions and bug holes. Contractor shall follow manufacturer recommendations.

D. Contractor shall protect joint wrap from damage during back filling and other related work.

3.06 INSTALLATION OF MANHOLE FRAMES

A. Manhole frames and covers shall be installed to grades shown on the Drawings or as directed.

B. Adjustment of manhole castings shall be made using specified precast grade rings and portland cement mortar joints or preferred bitumen seals.

C. Each manhole casting shall be anchored in place using four 5/8-inch stainless steel bolts with nuts as detailed on the Drawings or directed.

D. The maximum depth of adjustment below any manhole casting shall be 16 inches and the minimum depth of adjustment shall be 4 inches.

E. In concrete pavement, separate frame from pavement with 1/2-inch thick premolded mastic joint material extending from the base of the frame to the top of the frame.

F. Manhole castings located in pavement areas shall be installed with the top of the casting 1/4 inch below the finished grade of the adjacent pavement surface.

3.07 CHIMNEY SEAL

A. Installation of chimney seal shall be after casting has been adjusted to final grade. Chimney seal shall cover all joints at manhole top including, but not limited to, iron casting, adjusting rings and manhole riser.

B. Chimney seal shall be installed per manufacturer recommendations. Chimney seal shall provide a water tight seal.

3.08 RESERVED

PART 4 SPECIAL PROVISIONS

END OF SECTION

SECTION 02555
PRESSURE PIPE

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing pressure pipe of the materials, class, size, and length as shown on the Drawings, specified, or directed.

B. Pressure pipelines constructed under this Section shall include but not be limited to water mains and sewer force mains.

C. This Section shall include furnishing and installing all required pipe, fittings, specials, adaptors, closure pieces, tees, bends, joint restraints, granular pipe bedding material, concrete used for encasement or bedding, removing and relaying existing pressure pipe as required, providing temporary services and temporary blocking or harnessing, making connections to new and existing pressure pipe, installing temporary bulkheads and plugs, testing pipe, cleaning and sterilizing water mains, and other work incidental to the pressure pipe installation, unless specifically included under other Items.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Manufacturer's Shop Drawing indicating physical dimensions, joint details, fittings, and special details for each size, type, and class of pipe furnished for the project. Shop Drawings shall also note salient features of a specific pipe, i.e., concrete strength and reinforcing details.

2. Information for the Record:

   a. Manufacturer's certification indicating that the pipe and joints meet Specifications for each production run for each size, type, and class of pipe furnished.

1.03 PRODUCT HANDLING

A. Care shall be taken in handling and transporting to avoid damaging pipes and their coatings. Loading and unloading shall be accomplished with the pipe under control at all times and under no circumstances shall the pipe be dropped. Pipe shall be securely wedged and restrained during transportation and supported on blocks when stored in the shop or field.

PART 2 PRODUCTS

2.01 PRESSURE PIPE SPECIFICATIONS

A. Ductile Iron Pressure Pipe (DIP):

1. Ductile Iron Pressure Pipe shall conform to ANSI A21.51 or AWWA C151 and shall be pressure class 350 psi for sizes 12-inch and below, and pressure class 300 psi for larger sizes unless otherwise specified herein.

2. Pipe buried underground, unless otherwise specified, shall be jointed with rubber gasket (push-on) type joints and shall meet the requirements of AWWA C111 for push-on joints. The gasket shall be a single molded rubber ring fitted into a specially shaped recess in the bell forming a pressure tight seal. The spigot end of each pipe shall be marked to indicate when the pipe is “home.”

3. Ductile Iron pipe shall be used for all water mains larger than 16-inches in diameter up to 24-inches in diameter.

4. Internal restrained bell joints, wherever shown or required, shall be mechanical joint with retainer glands, US Pipe TR Flex Joint System, US Pipe Field LOK Gasket System, or equal.

5. Interior Coating

   a. Water Mains

      1) Unless otherwise specified, pipe interiors shall be covered with a standard thickness cement lining meeting ANSI A21.4 and AWWA C104.

      2) A seal coat of petroleum asphaltic material shall be applied in conformance with the above Specifications. Pipe used for compressed air shall not receive a concrete lining.

   b. Force Mains

      1) Pipe interiors shall be lined on the interior of the pipe with Protecto 401 ceramic epoxy coating or approved equal.

      2) Pipes lined with ceramic epoxy coatings shall be labeled “for sewer only.”

      3) Epoxy ceramic coatings are not recommended for sewers where chemical injection is planned.

      4) Lined pipes shall be handled from the exterior of the pipe only. Minor damage to the epoxy coating may be repaired in the field in accordance with the liner manufacturer.

      5) Major damage to the liner that cannot be repaired in the field shall result in the pipe segment being rejected and returned to the factory for recoating.

6) Lined pipe using Field Lok or internal joint restraints shall not be homed to the bell shoulder to avoid damage to the liner.

6. Exterior Coating - All buried ductile iron pipe shall be coated on the outside with a standard petroleum asphaltic coating, 1 mil thick, meeting AWWA C110, unless otherwise specified. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun, and shall be strongly adherent to the pipe. The coating materials, after drying 48 hours, shall impart no objectionable color, odor, or taste to water standing in contact with the coating for a minimum of 48 hours.

7. Where approved, the petroleum asphaltic material specified for interior lining may be used for exterior coating of pipe buried underground.

8. Bronze wedges shall be used at all push-on joints (two per joint). The wedge shall be driven into the push-on joint to provide electrical conductivity between pipes

B. Polyvinyl Chloride Pipe (PVC):

1. Small Diameter Piping – 3-inches and smaller

a. Pressure pipes and fittings 3 inches or smaller in diameter shall be PVC material and shall consist of Class 12454-B rigid PVC compound in conformance with ASTM D1784. Pipe shall be ASTM D1785 Schedule 80 or ASTM D2241, SDR 21 with hydrostatic design stress of 2,000 psi. All joints for ASTM 1785 pipe, unless otherwise shown on the Drawings, shall be solvent welded in conformance with ASTM D2855. Joint solvent shall be as recommended by the pipe manufacturer and approved for the material to be conveyed.

b. Joints for ASTM D2241 pipe shall be push-on gasketted. Joint restraint for ASTM D2241 pipe shall be provided where specified or shown on the Drawings and shall be United Series 1300 or 1350, or equal. The fittings for ASTM D1785 pipe shall be Schedule 80 and shall conform to ASTM D2467. Fittings for ASTM D2241 pipe shall be ductile cast iron and shall conform to ANSI 21.10/AWWA C110 with mechanical joint.

2. Medium Diameter – 4-inches to 16-inches

a. PVC pipe 4 inches to 12 inches in diameter shall meet the requirements of AWWA C900 or AWWA C909, and unless otherwise specified, shall be Pressure Class 235 (C909), or have a standard pipe dimension ratio (D.R.) of 18 (C900).

b. PVC pipe 14-inch diameter and larger shall meet the requirements of AWWA C905 and unless otherwise specified shall have a standard thermoplastic pipe dimension ratio (D.R.) of 18 or less.

c. Pipe OD shall be equivalent to ductile iron pipe OD for the same nominal pipe size.

d. Pipe shall have integral bell push-on type joints meeting the requirements of ASTM D3139.

e. Joints for pipe shall be push-on gasket style. Gaskets shall meet the requirements of ASTM F477 for high-head (50 feet of head or higher) applications.

f. Restrained Joints, where required or shown, shall meet the requirements of the UNI-Bell Plastic Pipe Association Performance Standard UNI-B-13, similar to EBAA Iron Sales, Inc., Series 2000 PV for mechanical joints and Series 1500 for push-on joints.

C. RESERVED

2.02 PRESSURE PIPE FITTINGS

A. Ductile Iron Pipe Fittings:

1. All Ductile Iron Pipe, PVC or PVCO pressure pipe shall utilize Ductile Iron Pipe fittings with mechanical joints as specified in this section.

2. Mechanical joint fittings shall be ductile iron and conform to ANSI A21.10 or AWWA C110 and ANSI A21.53 or AWWA C153. All fittings shall have a pressure rating of 250 psi for all pipe sizes unless otherwise specified.

3. Fittings shall have mechanical joints with retainer glands unless otherwise specified or shown. Retainer glands shall be ductile iron. The restraining mechanism shall impart multiple wedging actions against the pipe. Restraining devices shall be of heat treated ductile iron. Twist-off nuts shall be used to ensure proper actuation of the restraining device. The mechanical joint retainer gland shall be Ebaa Iron, Inc., Series 1100 Megalug, or equal.

4. Mechanical joints

   a. Mechanical Joints shall conform to ANSI A21.11 (AWWA C111), except as specified herein.

   b. The mechanical joint retainer gland shall be Ebaa Iron, Inc., Series 1100 Megalug, or equal

   c. Mechanical couplings, if required or permitted, shall be Dresser Style 38, or equal.

   d. Fittings shall be lined as specified for ductile iron pipe for the services noted in the schedule.

5. Bell Restraints

   a. For new PVC Pipe Bell restraints shall be EBAA Iron Series 2800 Restrain Harnesses or approved equal.

   b. For new Ductile Iron Pipe bell restraints shall be EBAA Iron Series 1700 MEGA Lug Harnesses or approved equal.

c. Split ring harnesses may be used on existing pipes where joint restraints are to be added, but split ring type harnesses are not permitted on new pipe installations.

2.03 ACCESSORIES

A. Nuts and bolts for buried pipe shall be as follows:

1. Nuts and bolts used in wall castings shall be of stainless steel Type 316.

2. Nuts and bolts encased in grout on concrete pressure pipe shall conform to recommendations of the pipe manufacturer.

3. Nuts and bolts used on buried pressure pipe and fittings in contact with earth shall be Cor-Blue coated low alloy steel and have a minimum yield strength of 45,000 psi complying with ANSI A21.11 and AWWA C111.

4. All other nuts and bolts shall be low carbon steel in conformance with the chemical and mechanical requirements of ASTM A307, Grade B. Higher strength bolts will be acceptable.

B. Tracing Wire shall be installed on all pipe.

1. Direct Burial No. 12 AWG Solid (0.0808-inch diameter), 21% conductivity copper-clad annealed high carbon steel high strength tracer wire, 1150-pound average tensile break load, 45 mil, high molecular weight, high density polyethylene jacket complying with ASTM D1248, 30 volt rating. SoloShot™ extra high strength No. 1245 as manufactured by Copperhead Industries, LLC, or equal. Wire shall be secured to the pipe with tape at intervals not to exceed 10 feet.

a. Tracer wire installed on pipe by horizontal directional drilling shall be continuous without any splices.

b. Heat shrink splices are permissible only on tracer wire at pipe connection.

2. Tracer wires shall terminate inside all structures including but not limited to, air relief structures, valve box assemblies, indicated on plans. Tracer wire shall extend 4-feet above the opening on structures.

3. Tracer wire shall be tested for continuity after installation and considered acceptable when a continuous read is obtained between terminals.

C. Utility Markers and Locator stations shall be installed as noted in Part 4 and on the drawings.

1. Utility Markers shall be flexible above ground, impact resistant, UV stabilized fiberglass Reinforce composite material. Utility markers shall be a minimum of 3-3/4 inches wide and 66 inches long. Color shall be integral to the material and selected by the Owner.

2. Locator stations shall be impact resistant, UV stabilized, and fiberglass reinforced composite material, 3 inches in diameter. Locator stations shall have

a polycarbonate cap assembly with brass or stainless-steel terminal board for tracer wire. The cap assembly color shall be selected by the Owner.

3. Utility markers and locator stations shall have a 3-inch-wide by 13-inch-long label readable from 100 feet. Label color shall be selected by the Owner. The wording of the label shall be as specified in Part 4.

4. A polypropylene identification tape marked “buried sewer” shall be installed 24 inches above all water mains installed by open-cut methods. The tape shall be blue.

2.04 POLYETHYLENE ENCASEMENT FOR DUCTILE IRON PIPE & FITTINGS

A. Buried ductile iron pipe and fittings shall be encased in a loose wrapping of polyethylene film at the time of installation. The polyethylene material and method of installation shall meet the requirements of AWWA C105/A21.5.

2.05 SOURCES QUALITY CONTROL

A. Pipe Manufacturer’s Certification:

1. The pipe manufacturer’s certificate shall state that the materials have been sampled and tested in accordance with the provision for and meet the requirements of the designated specification and shall be signed by an authorized agent of the seller or the manufacturer.

2. A test results report shall accompany the manufacturer’s certificate, if requested by the Engineer. The report shall compare test results to Specification requirements.

PART 3 EXECUTION

3.01 COORDINATION

A. Construction in Highway Properties

1. Construction in highway properties shall conform to the requirements of Section 02200.

3.02 PREPARATION OF TRENCH

A. Trench excavation shall conform to requirements of Section 02200.

B. Unless otherwise specified or called for on the Drawings, the width of trench at the top of pipe 24 inches in diameter or less shall not exceed the outside diameter of the pipe or encasement, plus 9 inches on each side of the pipe measured to the face of the trench or to the back of the sheeting when used. For pipe having a diameter greater than 24 inches, the width of trenches at the top of the pipe shall not exceed the outside diameter of the pipe or encasement, plus 15 inches on each side of the pipe measured as specified above.

C. Unless otherwise directed or called for on the Drawings, all sewer trenches shall be excavated below the proposed pipe invert as required to accommodate the depths of pipe bedding material as scheduled on the Drawings.

3.03 PIPE INSTALLATION

A. All pipe fittings and specials shall be laid in accordance with the manufacturer's instructions, with AWWA C600, and as supplemented herein.

B. Precautions shall be taken during construction to protect the pipe interiors, fittings, and valves against contamination. Pipe interiors shall be thoroughly cleaned of dirt and foreign matter before laying, by brushing, swabbing or other method approved by the Engineer, and means shall be provided to prevent entry of dirt during the progress of installation. Groundwater shall be kept out of the pipe at all times.

C. Bedding and Backfilling:

1. Bedding and backfilling shall be in conformance with Section 02200.

2. At joints, enough depth and width shall be provided to permit working entirely around the pipe as needed to make the joints in the proper manner.

D. Handling and Cutting:

1. Suitable tools and appliances for cutting, handling, and laying of the pipes and special castings shall be used and care shall be taken to prevent damage to pipe coatings.

2. Where new or existing pipe requires cutting in the field it shall be done in a manner to leave a smooth end at right angles to the pipe centerline. The finished cut must be approved by the Engineer.

E. Pipe Laying:

1. Pipe and appurtenances shall be installed true to line, grade, and location; with joints centered, spigots home; pipe properly supported and restrained against movement; and all valve stems plumb.

2. All elbows, tees, plugs, etc., shall be properly anchored, blocked, or otherwise restrained to prevent movement of the pipe in the joints due to internal or external pressure.

3. The open ends of all pipes and special castings shall be plugged or otherwise closed with a watertight plug to the approval of the Engineer before leaving the Work for the night, and at other times of interruption of the Work. All pipe ends which are to be permanently closed shall be plugged or capped and restrained against internal pressure.

F. Pipe Jointing:

1. Gaskets - Just prior to joining the pipes, the surfaces of the joint rings shall be wiped clean and the joint rings and rubber gaskets shall be liberally lubricated with an approved type of vegetable oil soap. The spigot end, with the gasket placed in the groove, shall be entered into the bell of the pipe already laid,

making sure that both pipes are properly aligned. Before the joint is fully "home," the position of the gasket in the joint shall be determined by means of a suitable feeler gauge supplied by the pipe manufacturer. If the gasket is found not to be in proper position, the pipes shall be separated and the damaged gasket replaced. The pipe is then forced "home" firmly and fully. In its final position, the joint between the pipes shall not be deflected more than 1/2 inch at any point.

G. Anchoring Pipe:

1. Disjointing hydrostatic pressure at bends, plugs, tees, and wyes shall be counteracted by thrust blocks, restrained joints, or reinforced concrete anchorage as directed on the Drawings or specified.

2. Thrust blocks shall be installed only where directed or specifically called for on the Drawings, unless otherwise specified. Installation shall be in conformance with Drawings.

3. Approved joint restraints shall be installed in locations shown or scheduled on the Drawings.

4. Reinforced concrete joint anchorage shall be installed in conformance with the Drawings.

3.04 PIPE PROTECTION

A. Detectable marking tape shall be installed in the trench of each non-metallic pipe. The tape shall be installed directly above the force main at the depth recommended by the manufacturer. The tape shall extend the full length of the force main, and shall be imprinted with a continuous warning message repeated at least every 36 inches. The warning message shall state that a sewer line is buried below. The tape shall consist of one layer of aluminum foil laminated between two layers of inert plastic film. The lamination bond shall be strong enough that the layers cannot be separated by hand. The tape shall be inductively located and conductively traceable using a standard pipe and cable locating device.

B. Utility markers and locator stations shall be installed with 42 inches to 48 inches above ground.

3.05 FIELD INSPECTION

A. All pipe sections, specials, and jointing materials shall be carefully examined for defects and no piece shall be laid that is known to be defective. Any defective piece discovered installed shall be removed and replaced with a sound one in a manner satisfactory to the Engineer at the Contractor's expense.

B. Defective material shall be marked with lumber crayon and removed from the job site before the end of the following day.

3.06 PRESSURE AND LEAKAGE TESTS

A. The Contractor shall furnish the pump, pipe connections, taps, gauges, auxiliary water container, bulkheads, plugs, and other necessary equipment and make pressure and leakage tests of all lines unless otherwise directed by the Engineer.

B. Tests shall be conducted on all pipelines or valved sections thereof as directed by the Engineer. Testing of pipelines laid in embankments or bedded in concrete shall be done prior to backfilling or placing concrete cover unless otherwise permitted by the Engineer. Tests on lines anchored or blocked by concrete shall not be conducted until the concrete has taken permanent set. A maximum of 1,000 feet of pipe may be included in a test section. All valves shall be tested for leakage.

C. The line or section thereof to be tested shall be filled slowly with water to expel all air. Hydrostatic pressure shall be applied by pumping water from an auxiliary supply. The test pressure shall be maintained two hours minimum and additional time as required for thorough inspection to find any leaks or defects in the force main and appurtenances. The test pressure shall be 100 pounds per square-inch. Should the pipe section fail to pass the tests, the Contractor shall find and correct failures and repeat the tests until satisfactory results are obtained.

D. Leakage tests shall be made simultaneously with or following completion of pressure tests of all lines or valved sections thereof. Leakage is defined as the quantity of water added to the pipe under test to maintain the required test pressure for a specified time.

E. Pressure testing shall be performed in accordance with AWWA C600 and C605.

3.07 RESERVED

PART 4 SPECIAL PROVISIONS

4.01 UTILITY MARKERS

A. Utility Markers or Location Station shall be installed at the following locations:

1. Pipeline at all bends and valves.
2. At 200-foot intervals in ODOT L/A R/W.

B. Utility Markers and Locator Stations labels shall have the following wording on the labels. “SANITARY“

4.02 PIPING SCHEDULE

A. The following letter designations are used in the Piping Schedule:

Material Designation:

DIP	-	Ductile Iron Pipe
PVC	-	Polyvinyl Chloride

B. Schedule:

Service	Size	Pressure Class Thickness Class	Material	Remarks
Force Main	16-inch	PC235	PVC C905	Pipe Installed in Open-Cut
Force Main	16-inch	DR18	PVC905 RJIB	Section 02955, 4.01 Pipe Installed in Bored Casings

C. Schedules are not guaranteed to be complete. All piping shown on the Drawings or specified shall be furnished and installed by the Contractor whether or not listed in the above schedule.

D. This section applies to buried pipe or pipe installed in bored casings only. See Section 15210 for flanged pipe inside structures.

E. See Section 02790 for pipe material requirements for pressure pipe installed by trenchless methods.

4.03 PERMANENT AND TEMPORARY BLOWOFFS/TAPS

A. The Contractor shall provide all blowoffs and taps as necessary to properly exhaust air from test sections, flush and test the new pressure pipe system.

4.04 PRESSURE PIPE ELEVATIONS

A. Elevations shown on the plans shall be checked as specified in this Section.

B. Any deviation in the pipe elevations shall be brought to the Engineer's attention to permit the Engineer to evaluate the impact upon air release mechanism placements.

END OF SECTION

SECTION 02557
VALVES

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing valves, valve boxes, floor boxes, extension stems, and appurtenances as specified, shown on the drawing.

B. Valves in hydrant assemblies are included in this Item.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:
2. Drawings for Review:
   a. Manufacturer's assembly drawings and parts list including model number and materials of construction.
3. Information for the Record:
   a. A certificate of compliance with AWWA C509, or AWWA C504 shall be submitted, if required by the Engineer.
   b. Certification of NSF approval.

PART 2 PRODUCTS

2.01 RESERVED

2.02 RESERVED

2.03 RESERVED

2.04 PLUG VALVES

A. Valve Bodies and covers shall be Cast Iron ASTM A126 Class B or ASTM A536 Grade 65-45-12. Ports shall be rectangular and 100% Port. The valve port area shall meet or exceed standard pipe area per ASME/ANSI B36. 10M. Round ports are not acceptable.

1. Bearings shall be sleeve type and made of sintered, oil impregnated permanently lubricated type 316 stainless steel for sizes 4-18"
2. Bearings shall be ASTM A473 Grade CF8M for sizes 20-36".

3. In valves larger than 36”, the upper and lower plug journals shall be fitted with ASTM A 240 type 316 stainless sleeves with body bearings of ASTM B30, Alloy C95400 aluminum bronze.

B. Plugs shall be solid one piece, Cast Iron ASTM A126 Class B or Ductile Iron ASTM A536 Grad 65-45-12. The plug shall have a cylindrical seating surface eccentrically offset from the center of the shaft. Plug shall not contact the seat until at least 90% closed. Resilient plug facing shall be Chloroprene (CR). Spherical shaped plugs are not acceptable.

C. Iron parts shall be painted before leaving the shop with two coats of acceptable high grade bituminous paint or epoxy paint

D. Seats shall be 1/8” thick welded overlay of not less than 95% pure nickel. Seat shall be at least ½” wide, 1/8” thick through entire width and raised. The raised surface shall be completely covered with nickel to ensure that the resilient plug face contacts only the nickel seat.

E. Adjustable packing shall be Acrylonitrile-Butadiene (NBR) multiple V-ring type with a packing gland follower. Packing gland shall permit inspection, adjustment, or complete replacement of packing without disturbing any part of the valve or actuator assembly, expect the gland follower. Non-adjustable packing or packing requiring actuator removal to replace the packing, is not acceptable. Both the packing and bearings in the upper and lower journals shall be protected by Buna-N shaft seals located on the valve shaft to minimize the entrance of grit into the bearing journal and shaft seal areas.

F. Pressure ratings shall be 175 psi on valve sizes through 12” and 150 psi for 14” and larger. Every valve shall be given a certified hydrostatic shell test and seat test, with test reports being available upon request.

G. All valves larger than 6” shall be installed with worm gear actuators. All gearing shall be enclosed in a cast iron housing, with outboard seals to protect the bearings and other internal components. The actuator shaft and gear quadrant shall be supported on permanently lubricated bronze bearings.

H. Buried actuators shall be 90% grease filled. Input shaft and fasteners shall be stainless steel. Actuator mounting brackets shall be totally enclosed. Actuators shall be provided in accordance with the drawings and the schedule included in this section.

I. End connections shall meet or exceed the latest revisions of AWWA C517. End Connections shall be mechanical joints in accordance with AWWA C111.

J. Valves shall be clearly marked with the seat end.

K. All valve bolts shall be 316 stainless steel.

L. Plug valves in wastewater applications shall be mounted with the plug in the horizontal position to prevent the accumulation of debris in the bottom of the valve.

M. Plug Valves shall be Dezurick PEF Full Port eccentric plug valves, Val-Matic 100% Port Plug Valve or approved equal.

N. Valves and actuators shall have seals on all shafts and gaskets on covers to prevent leakage of liquid out of or the entry of dirt or liquid into the valve.

O. For buried or submerged service, actuator and mounting bracket shall be completely enclosed to prevent entry of dirt or liquid.

P. Buried valves shall be provided with 2-inch square operating nuts.

2.05 RESERVED

2.06 ACCESSORIES

A. Valve Boxes:

1. All buried valves shall be provided with valve boxes. Valve boxes shall be standard, three-piece screw type, cast iron adjustable boxes, with tops of boxes set flush to finished grade. Valve boxes shall not be less than 5 inches in diameter and shall have a minimum thickness at any point of 3/16 inch. The cover shall have cast thereon an appropriate name for the kind of service for which the valve is used.

2. A valve box shall be provided for each curb stop. At least three keys shall be furnished to operate curb stops.

3. All parts of valve boxes, bases, and covers shall be coated by dipping in bituminous varnish.

4. Extension stems shall be provided for buried valves when the operating nut is 3 feet or more below finished grade. Extension stem shall extend operating nut to within 16 inches of the ground surface, shall be provided with spacers which will center the stem in the valve box, and shall be equipped with 2-inch square wrench nut. Extension stems shall meet the requirements of this Section.

B. Extension Stems and Stem Guides:

1. Unless otherwise specified, each extension stem shall be made of cold-rolled steel material and the same size as the valve stem of the valve it operates. Stem guides shall be made of cast iron and fully adjustable. The guide block shall be bronze brushed where it contacts the extension stem. Stem guides shall be as manufactured by the Eddy Valve Co., Rodney Hunt, or equal.

2. All valves which are to be operated by tee-wrench shall have 2-inch square operating nut at the top of the extension stem.

3. Stems for operation of plug valves shall not be less than 1-1/4-inch diameter Schedule 80 galvanized steel pipe with intermediate steady guides. Weld socket for 2-inch valve nuts to bottom of extension stems and pin sockets to nuts with stainless steel plated 3/8-inch bolts. Provide a permanent lever or a 2-inch square operating nut at top of stems, in accordance with requirements of Drawings.

PART 3 EXECUTION

3.01 INSTALLATION

A. Accessories:

1. Valve Boxes shall be installed in a plumb position and in alignment with the operating nut.
2. Extensions stems and stem guides shall be in alignment with operating nut and prevent binding and stresses on connecting pins.
3. When there is a change to the grade elevation, valve boxes new and existing shall be adjusted to the new grade elevation.

3.02 RESERVED

PART 4 SPECIAL PROVISIONS

4.01 VALVES IN STRUCTURES

A. This section applies to buried valves specified with Mechanical Joint connections.

B. See Schedule in Section 15250 for valves installed inside structures.

4.02 EXTENSION STEMS

A. Extension Stems shall be provided for all valves located more than 5 ft. below final grade.

4.03 VALVE OPENING DIRECTION

A. Valves shall open in accordance with the City's Specifications.

B. The Contractor shall note that not all valves required for this work open in the same direction.

END OF SECTION

SECTION 02600
PAVEMENTS, CURBING AND WALKS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the construction of sidewalks, curbing pavements, and berms of various designated types as shown or scheduled on the Drawings, specified or directed.

B. This Section includes preparation of the base and subgrade construction of walks, curbs, pavements and base courses, adjustment of manhole castings, and valve boxes to conform to new pavement courses, and other work and materials incidental to the construction of pavements, curbing and walks.

C. Existing curbs and walks of stone or concrete shall be replaced using concrete.

D. This Section includes temporary and restoration of permanent pavement markings as they exist at the time of bidding unless otherwise shown on the Drawings, specified or directed.

1.02 OWNER'S STANDARDS AND SPECIFICATIONS

A. Sidewalks, curbs, driveways, parking areas, and street pavement and berms disturbed by construction shall be restored in accordance with the Owner's present standards and specifications.

1.03 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Manufacturers' and suppliers' material certificates.

   b. A sieve analysis (ASTM C136) shall be furnished for each material source.

2. Information for the Record:

   a. Delivery tickets from the asphalt and aggregate suppliers shall be given to the inspector at the unloading site. Tickets shall include (as a minimum) name of source, date, type of material, and weight.

   b. Test results and certificates.

PART 2 PRODUCTS

2.01 AGGREGATE BASE AND SURFACE

A. The aggregate shall meet the requirements of ODOT Item 304 and Item 411, respectively.

2.02 RESERVED

2.03 TACK COAT

A. The tack coat shall meet the requirements of ODOT Item 407.

B. The tack coat material shall be RS-1 or SS-1, SH-1h, or CSS-1h, and shall meet the requirements of ODOT Item 702.04.

2.04 RESERVED

2.05 ASPHALT CONCRETE BASE, LEVELING AND SURFACE COURSES

A. Bituminous Material - The asphalt cement shall meet the specified performance grade (design temperature) and shall meet the requirements of ODOT Item 702.01.

B. Aggregate - The aggregate shall meet the requirements of ODOT Items 301.02 and 703.04 for asphalt concrete base and ODOT Item 703.05 for asphalt concrete.

C. Design Mix - All bituminous mixes shall meet the requirements of ODOT Item 401.

1. Bituminous aggregate base mix shall meet the requirements of ODOT Item 301.
2. Asphalt concrete mix for leveling course shall meet the requirements of ODOT Item 448.
3. Asphalt concrete mix for surface course and overlays shall meet the requirements of ODOT Item 448.

2.06 CONCRETE (CAST-IN-PLACE)

A. All concrete used for pavement, curbing driveways and sidewalk shall be as specified in ODOT Item 499 and 452.

B. Reinforcing steel and dowel bars shall be as specified in ODOT Items 709.09, 709.10, 709.12, and 709.13

C. Other materials required for placing concrete shall be as follows:

1. Rubber-Asphalt Joint Sealer:
   a. Hot Applied Sealer - ODOT Item 705.04.
2. Preformed Elastic Joint Sealer - ODOT Item 705.11.

3. Preformed Filler - ODOT Item 705.03:
   a. Fiber Filler - ASTM D1751 (AASHTO M213).
   b. Sponge Filler - ASTM D1752, Type I (AASHTO M153, Type I.
4. Curing Materials:
   a. Burlap Cloth - ODOT Item 705.5 (AASHTO M182, Class 2).
   b. Sheet Materials - ODOT Item 705.06.
   c. Transparent Membrane - ODOT Item 705.07 (ASTM C309 Type I Class B).
   d. White Membrane - ASTM C309 Type II Class B as modified by ODOT Item 705.07.

2.07 PAVEMENT MARKING

A. Contractor shall provide temporary and permanent pavement markings equal to those markings that existed on the paved surfaces prior to commencement of the Work unless otherwise shown on the Drawings, specified in Part 4, or directed.

B. Pavement markings shall be in accordance with the requirements of ODOT Section 640.

C. Pavement markings shall match existing or adjoining pavement markings.

D. Pavement markings partially disturbed by construction shall be replaced entirely.

PART 3 EXECUTION

3.01 COORDINATION

A. All soil subgrade under pavements, driveways, curbs, curb and gutter, and walks shall be compacted in accordance with Section 02200.

B. All service boxes, manholes, inlets and other structures shall be adjusted or reconstructed to the required grades in both new and resurfacing pavement areas.

3.02 PAVEMENT INSTALLATION

A. All construction shall be in conformance with applicable portions of ODOT Specifications, except as otherwise specified or called for herein.

B. Unless otherwise directed by Engineer all aggregate bases which are to receive bituminous courses shall be primed as specified.

C. A tack coat at a rate as specified shall be applied to all existing pavements which are to be overlaid, and between subsequent courses when directed by the Engineer.

3.03 TRANSITION JOINTS FOR BITUMINOUS CONCRETE PAVEMENT OVERLAY

A. Types of Transition Joints:

1. Transition joints shall be either butt type or feathered type as directed by the Engineer.

2. Butt joints shall be used on State and Federal roads and main thoroughfares and feathered joints used elsewhere unless otherwise specified.

3. Butt Joints:

   a. When a butt joint is called for on the Drawings or specified, the old surface shall be cut back for at least 3 feet to a depth of at least 1 inch for the full width of the joint and pavement installed.

   b. A bituminous seal shall be placed on the finished surface at the junction of the new and old pavements.

4. Feathered Joint:

   a. Feathered joints shall be constructed by manually raking the paving material to a smooth transition from the full depth material to the existing pavement surface.

   b. Existing pavement surface shall be bond-coated to include the transition area.

   c. Feathering shall be done by a workman skilled in the operation and shall be approved by the Resident Project Representative.

3.04 CURBING

A. Curbing shall be constructed in conformance with applicable portions of ODOT Item 609 and the ODOT Standard Construction Drawings.

B. Place 1-inch dowelled expansion joints at inlets and at spring lines of street and driveway returns. If intersecting streets and driveways are more than 300-feet apart, place expansion joints at 300-feet intervals.

C. Contraction joints shall be placed at approximately 10-feet intervals.

3.05 CONCRETE SIDEWALK

A. Sidewalk shall be constructed in conformance with applicable portions of ODOT Item 608.

B. Unless otherwise indicated on the Drawings, concrete sidewalks shall be a minimum of 4-feet-0-inch wide and 4-inch thickness of concrete. Concrete walk removed and replaced shall be equal to the section removed.

C. The surface of the walks shall be divided into equally spaced blocks at approximately 5-feet intervals. Expansion joint filler 1/2-inch thick shall be installed between the walk and any fixed structure, at all changes in direction or shape and at intervals of 20-feet maximum. The expansion joint filler shall be 1-inch thick where the walk is installed against the back of curb. The filler shall be recessed 1/2-inch from top of finished surface.

D. Surface of new sidewalks shall be broomed to slightly roughen surface. On sections of sidewalk to be replaced, the surface texture shall match the adjoining.

3.06 CONCRETE DRIVEWAYS

A. Concrete driveways shall be constructed in conformance with applicable portions of ODOT Item 452.

B. Dowelled contraction joints shall be placed at a maximum spacing of 20-feet. Lesser spacing shall be used on irregular areas as directed by the Engineer.

C. Expansion joint filler 1/2-inch thick shall be installed at intervals of 24-feet maximum. One-inch expansion joint filler shall be installed between the driveway and any fixed structure.

3.07 BITUMINOUS AND AGGREGATE DRIVEWAYS

A. Bituminous driveways and parking lots shall be constructed as shown on the Drawings and indicated in Part 4 using materials specified for asphalt concrete pavements. Placement shall be in accordance with ODOT Item 401.

B. Aggregate driveways and parking lots shall be constructed as shown on the Drawings using base aggregate meeting the requirements of ODOT Item 411.

C. Replacement of bituminous or aggregate driveways and parking lots shall conform to Section 01565 and this Section but in no case, be inferior to that being replaced.

3.08 MILLED ASPHALT BASE

A. Where shown on the Drawings, existing asphalt concrete pavement shall be milled or pulverized, then spread, graded, and compacted as the base for a new paved roadway surface. The full depth of the existing asphalt pavement shall be milled, but care shall be taken to prevent unsuitable subgrade materials from mixing with the milled asphalt.

B. The milled asphalt pavement shall be free of contamination and uniform in composition. The gradation and physical characteristics of the material shall be similar to ODOT Item 304 - Aggregate Base, except variations will be allowed to the extent that the material will compact to the satisfaction of the Engineer. A maximum of five percent larger than 2 inches in size will be tolerated provided it can be incorporated into the Work with satisfactory results.

C. To improve stability, the milled asphalt may be mixed with asphalt cement or asphalt emulsion at a rate and by a method approved by the Engineer. If ordered by the Engineer, water shall be applied to aid in compaction and prevent segregation of the material. The water shall be added in a manner that will not soften the subgrade.

3.09 INSPECTION

A. Laboratory services shall be in accordance with the requirements of Section 01410 and shall include:

1. A compaction test on the subgrade, aggregate base, and each layer of asphalt shall be performed for every 300 square yards of material placed.

2. Asphalt Concrete:

a. Quality Control Testing - A sample of the mix shall be taken for each 200-cubic yard of bituminous material or fraction thereof delivered to the project. An extraction test AASHTO T164-70 and a mechanical analysis AASHTO T30-70 shall be performed on the mix samples.

3. Cast-in-Place Concrete:

a. The following tests shall be performed by an independent testing laboratory acceptable to the Engineer during progress of the work:

1) Compression Tests Cylinders – Strength test shall consist of three cylinders molded and cured. Cast three cylinders for each 50 cubic yards, or fraction thereof, for each class of concrete placed on any one day, but at least three for each day. Test one cylinder at seven days and two at 28 days in accordance with ASTM C39.

2) Slump Tests – ASTM C143. Slump shall be measured for first batch of each concrete class delivered in morning and afternoon, for each strength tests, and whenever consistency of concrete appears to vary.

3) Air Entrainment – ASTM C173 or C231. Perform one test for every second ready mix truck load.

4) Temperature – ASTM C1064. Perform with each slump test.

3.10 PROTECTION

A. No heavy construction vehicle shall operate on any pavement, curbing or walk after it has been installed.

B. Traffic shall be prohibited on newly installed asphalt pavement until it has cooled sufficiently to avoid marking.

C. Asphalt Pavements:

1. Bituminous mixtures shall be transported and placed in accordance with ODOT Item 401

D. Concrete Pavements, Curbing and Walks:

1. Concrete shall be mixed, transported, placed, and finished in accordance with the temperature and environmental requirements of ODOT Item 451 or 452 depending on the pavement type being placed

2. No concrete shall be mixed, transported, placed, or finished when the temperature of the base, subgrade, or air is below 40 degrees F or whenever, in the opinion of the Engineer, the temperature may fall below 40 degrees F within 24 hours after the concrete has been placed.

3. The Contractor shall take such precautions as are necessary to protect the concrete from rain.

4. The Contractor shall protect the concrete from freezing for no less than seven days or until such time that specimen beams have attained a modulus of rupture of at least 600 psi.

PART 4 SPECIAL PROVISIONS

Not Used.

END OF SECTION

SECTION 02710
FENCING

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the furnishing of all materials, equipment, labor, and supervision necessary for the installation of new fencing as shown on the Drawings and to replace fencing damaged during construction in accordance with the Contract Documents.

B. All Work performed under this Section shall comply and be in accordance with all approved trade practices and manufacturers' recommendations.

C. The new fence is expected to match existing materials as closely as possible.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for review:

a. Manufacturer's product literature.

b. Materials of Construction.

1.03 PROJECT HANDLING

A. Materials, including but not limited to post, barb wire, and fence fabric, shall be handled and stored in accordance with the manufacturer's recommendations and in such a manner as to prevent any damage to the finish coating.

PART 2 PRODUCTS

2.01 FENCE FABRIC

A. Fence fabric shall match the existing fence fabric.

2.02 FENCE POST AND RAILS

A. Line posts shall match the existing line posts.

B. Tension wire and rails shall match existing wire and rails.

2.03 ACCESSORIES

A. All accessories shall match existing accessories.

PART 3 EXECUTION

3.01 COORDINATION

A. Permanent fencing may be installed for convenience of the Contractor prior to completion of Work.

1. Contractor shall be responsible for maintenance and repairs to keep the fence system like new during construction. The fencing system is subject to the Owner and Engineers approval at project completion and the entire system or any part there off may be required to be replaced.

3.02 PREPARATION

A. Final grading shall be completed prior to the installation of the permanent fence system.

3.03 INSTALLATION

A. The Contractor shall erect the fence, gates, and fence posts level and plumb as required, in accordance with manufacturer's recommendations and as shown on the Drawings.

B. Line posts shall be spaced at intervals not exceeding 10-feet.

C. Fence fabric shall be stretched taut, securely fastened to the posts, tension wire and top rail to match the existing construction and as specified and shown on the Drawings.

PART 4 SPECIAL PROVISIONS

Not Used.

END OF SECTION

SECTION 02800
SODDING, SEEDING AND MULCHING

PART 1 GENERAL

1.01 SCOPE

A. This Section includes fine grading, placing sod, and seeding and mulching areas designated on the Drawings, specified, or ordered.

B. The Work consists of fine grading; furnishing and placing topsoil; sod seed, mulching material; and fertilizer; and watering seeded or sodded areas until growth is established.

C. The Contractor shall restore all grass areas damaged by his operations in construction of facilities included in the Contract.

D. Unless otherwise specified herein or directed, Work shall be in conformance with ODOT Item 659 Seeding and Mulching, and Item 660 Sodding.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Manufacturer's project information for materials.

2. Information for the Record:

   a. Submit to Resident Project Representative:

      1) Invoices showing the weight, brand, and composite analysis of all fertilizer used on the Project.

      2) Bag tickets showing weight and composition of all seed used on the Project.

PART 2 PRODUCTS

2.01 SOD

A. Sod shall conform to ODOT Item 660.02, unless otherwise specified in Part 4.

2.02 SEED

A. Seed mixtures shall be in conformance with the requirements of ODOT Item 659.07 and ODOT Item 659.09 Class 1, unless otherwise specified in Part 4.

2.03 FERTILIZER

A. Commercial fertilizers shall be from a dealer or manufacturer whose brands and grades are registered or licensed by the State of Ohio, Department of Agriculture. The content of nutrients shall be 12-12-12, unless otherwise approved by the Engineer.

2.04 MULCHING MATERIAL

A. Mulching material shall be straw, wood fiber, or compost reasonably free of weed seed, and other foreign materials. Mulch shall meet the requirements of ODOT Item 659.13, and either Item 659.14, 659.15, or 659.16.

2.05 MATTING MATERIAL

A. Matting material shall be in conformance with the requirements of ODOT Item 712.11 Type A or B.

2.06 TOPSOIL

A. Topsoil furnished by the Contractor shall be as specified in Section 02200.

PART 3 EXECUTION

3.01 FURNISHING AND PLACING TOPSOIL

A. Areas from which the top layer of soil has been removed or disturbed shall be recovered with a minimum of 4 inches of topsoil placed in conformance with ODOT Item 659.11.

3.02 PREPARATION

A. The operation of finish grading and sowing shall not be performed when the ground is frozen or muddy.

B. Areas to be Sodded:

1. Preparation of areas to be sodded shall be in conformance with ODOT Item 660.04.

C. Areas to be Seeded:

1. Unless otherwise shown on the Drawings or specified in Part 4, all areas of disturbed soils on the Site shall be seeded.

2. The area to be seeded shall be prepared in accordance with ODOT 659.

3. Fertilizer shall be applied at a standard dry application rate of 10 pounds per 1000 square feet. Either dry or liquid fertilizer may be used and shall be distributed in an even pattern over the specified area, then thoroughly disked, harrowed, or raked into the soil to a depth of not less than 1 inch.

3.03 INSTALLATION

A. Sodding:

1. Sod shall be placed in conformance with ODOT Items 660.05 and 660.06.

2. No sod shall be placed when the temperature is below 32 degrees F. No frozen sod shall be placed nor shall any sod be placed upon frozen soil. When sod is placed between the dates of June 1 and October 15, it shall be covered immediately with a straw mulch 1-inch thick, loose measurement.

B. Seeding:

1. The seed shall be mixed thoroughly and sown evenly at a rate specified in ODOT Item 659.09. The seed mixture may be sown dry or hydraulically unless directed otherwise in Part 4 of this Section.

2. The seed mixture shall be applied when the soil is in a workable condition and shall be raked into a depth of approximately 1/4 inch.

3. Seed shall be sown only between May 1 and October 15, unless otherwise permitted by the Engineer.

C. Mulching:

1. Within 24 hours after an area has been seeded, it shall be mulched in conformance with one of the following specified methods as designated in Part 4.

2. Mulch:

a. Mulching with straw shall be in conformance with ODOT Item 659.14, except that in front of residences, the mulching material shall be kept in place by an approved non-tracking adhesive or other approved method in lieu of the specified asphalt emulsion. Mulching with wood fiber shall be in accordance with ODOT Item 659.15 and mulching with compost shall be in accordance with ODOT Item 659.16.

b. Matting shall be used as mulch on slopes greater than 3:1 and shall be placed in conformance with the applicable portions of ODOT Item 671.

D. Seeded and sodded areas shall be watered and maintained as specified below until they are established.

1. The seed bed shall be thoroughly watered, as soon as the seed is mulched.

2. Water shall be applied by a hydro-seeder or water tank under pressure with a nozzle producing a spray that will not dislodge the mulching material.

3. Water applications shall be made at rates and at frequencies necessary to establish the growth of grass to its full density and to a minimum height of 2 inches.

4. The rate application shall be 120 gallons per 1,000 square feet.

5. The Contractor shall keep all sodded areas, including the subgrade, thoroughly moist for two weeks after sodding. After the two-week period, the Contractor shall water the sod as necessary to maintain its healthy condition until accepted by the Owner.
6. Matting areas shall be maintained until all Work on the Contract has been completed and accepted.
7. Seeded and sodded areas shall be maintained by the Contractor until acceptance by the Owner. The Contractor shall repair and restore any damaged areas. Repair of the damaged area shall be performed using the same materials and procedures as used for the original installation of the area.
8. The Contractor shall clean all surfaces coated with hydro-seeding overspray. Contractor shall be responsible for surface staining or damage caused by hydro-seeding and restoration damage or staining.

PART 4 SPECIAL PROVISIONS

Not used.

END OF SECTION

SECTION 02955
CARRIER PIPE IN BORED CASINGS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing all materials, equipment, and labor to construct carrier pipe in bored steel casing pipe in locations and between limits as shown on the Drawings, specified, or required. The type, material, class, and size of casing pipe and carrier pipe installed shall be as specified herein, shown on the Drawings, and designated in the Bid.

B. This Section shall include excavation and disposal of material of any nature encountered including rock, furnishing and installing boring pits, casing pipe, carrier pipe, blocking, grout fill, control of water; sheeting, shoring, and bracing; and other incidental work.

C. The Contractor will be held responsible for any settlement of street surfaces, or damage to pavement, sidewalk, curbing, or public utilities caused by the construction and shall repair or have repaired any damage caused thereby.

1.02 OSHA REQUIREMENTS

A. Methods and procedures shall conform to OSHA Standards 1926.800 Tunnels and Shafts.

1.03 RESERVED

1.04 CONSTRUCTION UNDER HIGHWAYS

A. The work shall be performed in accordance with the permitting requirements of ODOT District 2.

1.05 SUBMITTALS

A. For Engineer’s Approval:

1. Manufacturer’s Shop Drawings:
   a. Specified carrier pipe and joints.
2. Suppliers and Test Certificates:
   a. Specified pipe.
   b. Casing pipe.
3. Drawings showing location and design of boring pits.
4. Plans and description of the boring arrangement to be used.

1.06 PROTECTION

A. All operations shall be conducted in such a manner that will not interfere with, interrupt, or endanger the operation of traffic; nor damage, destroy, or endanger the integrity of railroad pavements or private or public facilities in the area.

1.07 DRAINAGE

A. The Contractor shall furnish, install, and maintain all facilities for collecting, conveying, and disposing of water in conduits and boring pits until the completion of the Work. The Contractor shall have on hand at all times sufficient machinery for all emergencies that are likely to arise on Work of this character and such machinery shall be kept in good working order. Effective and continuous control of water during the grouting operations will be required.

PART 2 PRODUCTS

2.01 MATERIALS

A. Casing Pipe:

1. Casings shall be welded steel pipe meeting ASTM A139, Grade B.
2. Nominal pipe diameter shown on the Drawings or specified shall be minimum. A larger diameter may be used subject to approval by the Engineer.
3. Pipe wall thickness shall be minimum shown on the Drawings or specified but in no instance, less than 0.500 inch.
4. Pipe ends shall be beveled for field butt welding.

B. Carrier Pipe approved for installation in bored casing shall be the type and class specified, shown on the Drawings, or designated in the Bid.

C. Casing Spacers

1. The carrier pipe shall be supported using stainless steel casing spacers as manufactured by BWM, CCI, Advanced Products & Systems, Inc. (APS, Pipeline Systems or approved equal. The casing spacers shall be designed for use with the specified carrier pipe material.
2. The carrier pipe shall be provided with internal joint restraints as specified.

PART 3 EXECUTION

3.01 INSTALLING CASING PIPE

A. The casing shall be installed by pushing the pipe horizontally through the ground with a boring auger rotating within the pipe to remove the spoil. The front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger and cutting head from leading the pipe so that there will be no unsupported excavation ahead of the pipe. The arrangement shall be removable from within the pipe in the event an obstruction is encountered. The face of the cutting head shall be arranged to

provide reasonable obstruction to the free flow of soft or poor material. The use of water or other liquids to facilitate casing emplacement and spoil removal is prohibited.

B. Bored installations shall have a bored hole essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (plus coating) by more than approximately 1 inch, grouting or other methods approved by the Engineer shall be employed to fill such voids.

C. Before pushing the casing pipe, joints shall be welded full circumference as required to provide a minimum joint strength equal to the pipe strength.

D. If an obstruction is encountered during installation to stop the forward action of the pipe, and it becomes evident that it is impossible to advance the pipe, operations shall cease and the pipe shall be abandoned in place and filled completely with grout and a parallel casing installed or another approved method employed to complete the installation.

3.02 INSTALLING CARRIER PIPE

A. After encasement pipe is installed, stainless steel or polyethylene casing spacers specifically designed for centering a carrier pipe within a casing pipe, shall be banded to each length of carrier pipe as shown on the Plans to prevent displacement and the pipe pulled into place.

3.03 LINE AND GRADE

A. The line and grade shall be checked in accordance with Section 01800.

B. Should the pipe or the tunnel liner deviate more than 0.06-feet from the proposed grade or 0.25-feet from the proposed line, the Contractor shall notify the Resident Project Representative and immediately make adjustments necessary to bring the installation back to the proposed location.

C. The Owner may require removal and replacement of pipe installed more than 0.25-feet off proposed grade and 0.5-feet off the proposed alignment.

PART 4 SPECIAL PROVISIONS

4.01 CARRIER PIPE IN BORED CASING

A. PVC PIPE (C900/RJ)

1. PVC pipe to be used as a carrier pipe in bored casings shall have restrained joints and meet AWWA C900/C905, DR-18.

2. PVC pipe joints shall be restrained by non-metallic couplings. The pipe ends and coupling shall be grooved; restraint shall be provided by a nylon spline inserted in the grooves between the pipe and coupling. The pipe joint shall be made watertight by a flexible elastomeric seal (O-ring) in compression between the pipe and the coupling.

3. The pipe shall be Certa-Lok C900/RJ by Certainteed or C900/905 RJ/RJIB by North American Specialty Products or approved equal.

END OF SECTION

SECTION 05540
IRON CASTINGS

PART 1 GENERAL

1.01 SCOPE

A. This Section includes manhole covers and frames, inlet grates and frames, stop plank grooves, and other iron castings shown on Drawings.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Product literature that shall be included; General Specifications, Surface Coating, Anchor Bolts, Machine Bearing Surface.

   b. Independent Shop Drawings shall be submitted for the frame and the cover.

   c. A submittal of a casting schedule that clearly notes either the structure number or in what circumstances the casting is intended to be installed, shall be included, i.e., roadway.

   d. All dimensions for both the frame and the cover/grate shall be included.

2. Information for the Record:

   a. Material certification.

   b. Proof-load test data.

   c. Manufacturer's installation instructions.

   d. Manufacturing Capabilities and Quality Control Measures.

1.03 PRODUCT HANDLING

A. Castings shall be delivered in sufficient time to permit proper placement in pavement and slabs.

B. Castings shall be stored in such a way as to prevent warping prior to installation.

C. Additional product handling requirements are specified in Section 01350.

PART 2 PRODUCTS

2.01 MANHOLE COVER AND FRAME

A. All castings shall be rated for heavy duty service.

2.02 INLET GRATE AND FRAME

A. Castings shall be suitable for heavy duty service.

B. Unless indicated otherwise, inlet grate and frame shall be East Jordan No. 7045.

2.03 RESERVED

2.04 PERFORMANCE REQUIREMENTS

A. Castings shall be gray iron conforming to ASTM A48, Class 35.

2.05 FABRICATION

A. Castings shall be free from pouring faults, sponginess, cracks, blowholes, blisters, shrinkage strains, and other defects. Plugging of defective castings is not permitted.

B. Castings shall be true to pattern in form and dimension. Weight of castings shall not vary by more than 5% from published weight. Contractor shall submit invoices showing actual weight of casting as certified by manufacturer.

C. Castings shall have machined bearing surfaces.

D. All castings shall be coated with a non-toxic, nonflammable, water-based, asphalt paint.

E. Lettering shall be cast on covers. Unless indicated otherwise, the manufacturer's name shall be cast in cover.

F. Covers shall be furnished with bolts, locks, hinges, perforations, lifting rings, and pick holes as specified, shown on Drawings, or as directed.

PART 3 EXECUTION

3.01 PREPARATION

A. Contractor shall examine surfaces to receive castings and shall report unacceptable conditions to Engineer before proceeding with the Work.

3.02 ERECTION AND INSTALLATION

A. Castings shall be accurately set, aligned, and anchored as shown on Drawings.

B. Castings shall be installed in accordance with manufacturer's instructions or shown on the drawings. If any discrepancies exist, then the more stringent requirements shall take precedence.

PART 4 SPECIAL PROVISIONS

4.01 CONCRETE COLLARS

A. Concrete collars shall be provided for all manholes and valve boxes located in paved areas.

4.02 STANDARD SANITARY SEWER MANHOLE

A. Sanitary Sewer manhole castings shall be provided in accordance with the City of Wapakoneta standard manhole castings, unless otherwise shown on the Drawings.

END OF SECTION

SECTION 09900
PAINTING

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and application of protective coatings to all wood, concrete, and metal surfaces as specified or as shown on the Drawings.

B. Included in this Section is surface preparation, shop application inspection, and field touch up work as required to provide a complete protective coating system.

C. In general, the Work shall include the field painting of the following:

1. All exposed interior cast-in-place concrete (except floors) above ground floor.
2. All exposed concrete blocks and hollow core precast slabs.
3. All exposed plaster.
4. All exposed wood.
5. All exposed pipe insulation.
6. All exposed piping, including fittings, valves, couplings, flanges, and other in-line accessories.
7. All machinery, pumps, and equipment.
8. All metal surfaces except the following:
   a. Bronze surfaces.
   b. Stainless steel surfaces.
   c. Aluminum or galvanized steel not requiring color coding or otherwise specified to be coated.

D. Additional product requirements are specified in Section 01350.

E. A Coating Schedule appears in Part 4 of this Section.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:
   a. Coating manufacturer's product data and technical literature including:
      1) Catalog number.
      2) General classification.
      3) Coating material analysis.

4) Detailed surface preparation guidelines.

5) Mixing, thinning, and application instructions for each material.

6) Induction time, pot life, viscosity, and drying and curing times for acceptable ranges of temperature and humidity.

b. Abrasive manufacturer's information including:

1) Name, address, and phone number of manufacturer and local supplier.

2) Bulk density.

3) Mohs ranking.

4) Sieve analysis.

5) Chemical analysis including impurities.

6) Free silica content.

7) Grain shape (roundness).

c. Submittals of coatings by a manufacturer not named in these specifications shall include performance criteria on abrasion, adhesion, exterior exposure, hardness, humidity exposure, salt spray (fog), impact, immersion, etc., as applicable, per the appropriate ASTM standards. If requested by the Engineer, the Contractor shall submit manufacturers complete formula for the coatings which are proposed to be furnished. The Engineer may also require the submission, at the Contractor's expense, of test reports from private laboratories showing results of comparable tests on the coatings proposed and the coatings specified.

d. Details of application equipment and procedures.

e. Samples of manufacturer's standard colors.

2. Information for the Record:

a. Certification that materials meet or exceed Specifications and that coating systems are suitable for intended use.

b. Certification that coating systems are compatible with substrate, specified surface preparation, prime coats, sealants and existing finishes.

c. Safety Data Sheets (SDS) for coating materials, thinners, diluents, abrasives, cleansers, and other materials.

d. Schedule of coating work showing each phase and step of Work.

1.03 QUALITY ASSURANCE

A. Standards - Surface preparation, coating, and patching work performed under this Section shall conform to the applicable provisions and recommendations of the following standards.

1. SSPC Steel Structures Painting Manual, Volume 1, “Good Painting Practice.”
2. SSPC Steel Structures Painting Manual, Volume 2, “Systems and Specifications.”
3. SSPC Vis. 1 and 2, visual standards and written guidelines.
4. NACE Coatings and Linings Handbook.
5. Applicable NACE standards and recommended practices including RP0178 and RP0184.

B. Field Mock-ups - Where specified in the Coating Schedule, a field mock-up shall be done prior to performing the required Work.

1. Field mock-ups shall be a minimum of 4 square feet in area, in a location chosen by the Owner or his representative.
2. The mock-ups will serve as a standard of acceptance for applicable coating work under this Contract.
3. The coating manufacturer’s representative will be available to advise the Contractor.
4. Step-down mock-ups, showing the prepared substrate, primer, intermediate, and finish coats, as applicable, shall be used. Where the substrate is a ferrous metal, the portion remaining exposed shall be protected with a clear varnish.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Delivery, storage, and handling shall be in accordance with Section 01350.

B. Include the following information on container labels or packing slips:

1. Manufacturer’s name.
2. Name or title of material.
3. Batch numbers.
4. Stock number and date of manufacture.
5. Shelf life or expiration date.
6. Contents by volume of pigment, binder, and vehicle.
7. Thinning instructions when recommended.
8. Application instructions.
9. Color name and number.
10. Safety Data Sheets (SDS).

C. Provide controlled storage for coating materials and abrasives. Store coating materials in environmentally controlled enclosure with minimum ambient temperature of 55 degrees F. Store abrasives in dry area.

D. Maintain inventory of coating materials, solvents, and cleaners.

1.05 SCHEDULING AND SEQUENCING

A. Notify Engineer two weeks in advance of surface preparation and coating application.

B. Work systematically in accordance with submitted schedule.

C. Sequence and coordinate abrasive blasting and coating application with Work of other sections. Do not interrupt plant process or interfere with Owner's operations.

D. Coordinate coating work with installation of sealants specified in Section 07900.

E. Furnish specified testing and inspection equipment to Owner a minimum of two weeks prior to beginning surface preparation and coating work.

1.06 MANUFACTURER'S RECOMMENDATIONS

A. Apply coatings in strict compliance with manufacturer's recommendations and instructions as to environmental conditions, surface preparation, mixing, application, and curing. Where Specifications are more stringent than manufacturer's recommendations, Specifications shall prevail.

B. Resolve conflicts between Specifications and manufacturer's recommendations and instructions by obtaining written agreement between Engineer and coating manufacturer prior to beginning Work.

1.07 DESCRIPTION

A. Shop Painting - Shop painting shall be performed to the extent and as required under Section 01350 and the various individual sections of the specifications. All metal surfaces shall be given a protective shop coat of primer compatible with the field coating. Shop primer color shall be beige where available. If a prime coat has not been applied in the shop, then a prime coat shall be applied in the field after proper surface preparation and prior to the application of the finish coats.

B. Compatibility - The Contractor shall ensure the primer or finish coating applied in the shop is compatible with the specified field coatings. If the coatings are incompatible, the shop coatings shall be removed by abrasive blasting and coatings applied in conformance with this Section.

PART 2 PRODUCTS

2.01 MATERIALS

A. The products shall be as specified in the Coating Schedule. Materials selected for each coating system shall be the product of one manufacturer. The Contractor shall be responsible for the compatibility of all components of each coating system including primer, thinner, and solvents.

2.02 COATING SCHEDULE

A. The Coating Schedule included in Part 4 of this Section identifies the areas to be painted, the required materials, and number of coats required.

PART 3 EXECUTION

3.01 ENVIRONMENTAL REQUIREMENTS

A. Environmental Conditions:

1. Perform Work of this Section under the following environmental conditions.

   a. Abrasive blast only when surface contamination can be prevented. Abrasive blast only when surface temperature is more than 5 degrees F above dew point and relative humidity is less than 85%.

   b. No coating shall be applied when the air temperature, as measured in the shade, is below 40 degrees F or above 90 degrees F. No coating shall be applied when the temperature of the surface to be painted is below 35 degrees F or as recommended by the paint manufacturer, whichever is greater. Coatings shall not be applied to wet or damp surfaces, when the relative humidity exceeds 85%, or when the surface to be painted is less than 5 degrees F above the dew point.

2. Coating work may proceed during inclement weather in environmentally controlled enclosures. Environment within enclosure shall comply with Specifications and manufacturer's recommendations. Provide adequate ventilation and illumination. Minimum illumination shall be 150-foot candles.

B. Interior Painting may be done only when the building has been thoroughly dried, by natural or artificial heat, and when the Work area is properly heated and ventilated, clean, and as nearly dust free as possible. Room temperature shall be maintained within the manufacturer's recommendations during application and until coatings are dry.

C. Dust - Coating shall not be applied in areas where dust is being generated.

3.02 PROTECTION

A. During the construction period, all electrical and mechanical equipment and other equipment and apparatus shall be protected from paint drippings by means of tarpaulins, burlap, wooden housings, or other protection.

B. Finished work of other trades, surfaces not being painted concurrently or not to be painted, and factory finished lockers, toilet partitions, etc., that will not require field painting shall be protected at all times from paint spots and damage to the finish.

C. Perform cleaning and coating operation in manner which prevents dust and contaminants from falling in newly applied coating.

D. Protect portions of Work which are partially or entirely completed and which are adjacent to surfaces being prepared by abrasive blasting.

E. Protect completed Work from solvents, contaminants, or other substances which may damage coating.

F. Prominently display "Wet Paint" signs in sufficient number to protect newly applied coating.

3.03 PREPARATION OF SURFACES

A. General - All surfaces, of whatever material, which are to be painted shall be thoroughly cleaned of dirt, grease, rust scale, or other injurious substance, and, at the time of application of the coating, shall be clean and dry.

B. Metal Surfaces:

1. Remove weld spatter and other projections. Grind sharp edges to a minimum radius of 1/8-inch. Grind rough welds smooth. Grinding shall be in accordance with SSPC Surface Preparation Commentary. Surfaces shall be smooth and contoured in compliance with SSPC-SP 12.

2. Surfaces which have not been shop coated shall be abrasive blasted prior to any prime coats. Abrasive blasting shall be done in accordance with the Coating Schedule.

3. Shop primed surfaces shall receive a field sweep blast prior to the application of subsequent coats.

4. Abrasions or defects on shop coated surfaces shall be spot primed.

5. Surfaces which are to receive a high heat coating shall be Near White Blast Cleaned (SSPC, SP-10) and painted within eight hours; or, if recommended by the manufacturer of the approved high heat coating, the surfaces may be thoroughly cleaned to bare metal and given wash coats or a cold phosphatizing treatment as recommended by the manufacturer and as approved by the Engineer.

C. Clean up all debris from the surface preparation operation.

3.04 ABRASIVE BLASTING

A. Abrasives shall be expendable coal slag or aluminum oxide, free of silica, or a steel shot/grit mixture. Maintain abrasives free from dust, salts, and other impurities. Select the type and size of abrasive to yield a surface as specified in the Coatings Schedule.

B. Provide moisture and oil separators or traps of adequate size in compressed air system to provide dry and clean air supply. Drain traps automatically during blasting operation. Remove oil and moisture accumulated in air receiver by regular purging.

C. Remove weld splatter, slivers, laminations, and underlying mill scale which become visible after abrasive blasting, by grinding in accordance SSPC SP-3 and NACE RP0178. Follow grinding by final abrasive blast.

D. Surfaces which cannot be properly cleaned by abrasive blasting because of their location may be prepared by power tool cleaning in accordance with SSPC SP-11 (Power Tool Clean to Bare Metal) in lieu of abrasive blasting, subject to Engineer’s approval.

E. After surface preparation but prior to priming inspect surface for corrosion. Remove corrosion products which become visible when viewed without magnification by re-blasting.

F. Remove dust and blasting residue by blowing with clean, dry air, and vacuum cleaning with clean tools.

3.05 MIXING AND THINNING

A. All mixing shall be performed by mechanical paint shakers or mixers in strict accordance with the manufacturer's printed instructions.

B. Do not use coating material which has livered, gelled, or otherwise deteriorated during storage. Thixotropic materials which obtain normal consistency when stirred are acceptable. Where a skin has formed in container, cut skin loose from sides of container and discard prior to mixing.

C. Each component of multi-component materials shall be mixed individually before use. The material shall be mixed in a manner which will insure the break-up of all lumps, complete dispersion of pigment, and a uniform composition. Materials shall be inspected after mixing for uniformity and to verify that no unmixed pigment remains at the bottom of the container.

D. The individual parts shall be mixed together in the proportions recommended by the manufacturer. The materials shall be mixed thoroughly before use and shall be agitated often enough during application to ensure a uniform composition.

E. Mixed coatings shall be strained after mixing unless the application equipment is provided with strainers. Strainers shall be of a type to remove skins and undesirable matter without removing pigment.

F. Thinner shall not be added unless required for proper application. Thinning shall be in strict accordance with the manufacturer's recommendations.

G. Mixed coatings shall have pot life stated on label and indicated in approved Shop Drawing. When pot life limit is reached, discard material, clean equipment, and mix and induct new material.

H. Store materials not in actual use in tightly covered containers. Maintain containers and equipment used in storage, mixing, and application in clean condition, free of foreign materials and residue.

3.06 COATING APPLICATION

A. Apply prime coat within eight hours of completion of surface preparation. If surface is degraded, contaminated, or wet by rain or moisture subsequent to surface preparation and prior to coating, restore surface in accordance with Specifications.

B. Prior to applying each coat, remove dust with industrial vacuum cleaner using new filters, clean tools, and clean hopper. Remove residue or foreign matter on coating before applying additional coats by pressure rinsing with 1800-2000 psi water, when required by Engineer's representative.

C. Apply coatings in accordance with applicable provisions of SSPC Paint Application Specification PA 1. Use equipment best suited for the coating material.

D. Cloudiness, spotting, laps, brush marks, roller marks, runs, sags, drips, ropiness, voids, discontinuities, pinholes, and other surface imperfections are unacceptable.

E. When spray application is approved by Engineer. Spare fittings, gun tips, gun parts, and other spray equipment shall be acceptable to Engineer.

F. Stripe coat edges, welds, corners, crevices, and other surfaces difficult to coat before applying full coat in accordance with SSPC-PA 1.

G. Coverage shall be in conformance with the manufacturer's instructions. The dry mil thickness of coatings shall be as specified in the Coating Schedule.

3.07 APPLICATION BY SPRAYING

A. Application of coatings by spraying may be permitted in locations and on surfaces approved by the Engineer. The Contractor must submit for approval a written request giving the proposed locations and the coating manufacturer's instructions for spray application. Applicator and equipment must conform to the following paragraphs:

1. Spraying shall conform to the manufacturer's recommendations.

2. Equipment:

a. The spray equipment used shall be suitable for the intended purpose, capable of properly atomizing the coating, and equipped with suitable pressure regulators and gages. The equipment shall be in good working order.

b. Spray equipment shall be kept sufficiently clean so that dirt, dried coating, and other foreign substances are not deposited with the coating.

c. All solvents used in cleaning the equipment shall be completely removed before use.

d. The equipment manufacturer's instructions for proper use shall be strictly followed.

3. Air Spray:

a. Air caps, nozzles, and needles shall be those recommended by the manufacturers of the coating system and spray equipment being used.

b. Moisture and oil separators or traps shall be used in the compressed air system to provide a dry and clean air supply. The traps or separators must be of adequate size and must be drained periodically during the coating application.

4. Airless Spray:

a. Fluid tips shall be of the proper orifice size and fan angle, and the fluid control gun of proper construction, as recommended by the manufacturer of the coating system and the spray equipment being used.

3.08 CURING

A. Each coat shall be in a proper state of cure or dryness prior to the placement of the succeeding coat. Coating shall be considered sufficiently dry for recoating when an additional coat can be applied without the development of any detrimental film irregularities such as lifting, wrinkling, or loss of adhesion of the undercoat. Where an overcoat will not properly adhere to an overly cured undercoat, it shall be applied within the time period recommended by the manufacturer.

B. The curing times for the coatings shall conform to the coating manufacturer's recommendations considering ambient temperature and relative humidity.

3.09 FIELD QUALITY CONTROL

A. Thickness - The Contractor shall furnish the Engineer a suitable thickness detector of a type recommended by the coating manufacturer. Dry film measurements shall be taken in accordance with SSPC-PA 2.

B. The color of the prime coat shall be beige when available. It shall be inspected before application of intermediate or finish coats.

C. Intermediate Coats shall be the approximate shade of final coat; however, each coat shall be of a slightly different tint. Each coat shall be inspected and approved before the next coat may be applied; otherwise, credit will not be given and the Work shall be recoated.

3.10 PATCHING AND REPAIRS

A. All defective coatings shall be removed or repaired as the Engineer may direct. Surfaces with defective shop primer shall be repaired per the manufacturer's recommendations of the system in the Coating Schedule.

B. Before final approval of the Work all damaged coating surfaces (field or factory applied) shall be cleaned and repainted or touched up as directed.

3.11 CLEANING

A. Remove coating and splatter inadvertently placed on items not scheduled to be coated. Remove splatter by washing or scraping, taking care not to scratch or otherwise damage finished surfaces.

B. Remove and dispose spent abrasives, discarded coating materials, rubbish containers, rags, and other debris at the end of each work day.

3.12 MARRED EXISTING FINISHES

A. Existing buildings, pipelines, plumbing, etc., marred during construction by the Contractor shall be repainted to match the existing coating. Repainting shall be carried far enough to match the newly painted area with the existing coating.

B. Surface preparation, primer, and finish coats shall be in accordance with the Coating Schedule.

PART 4 SPECIAL PROVISIONS

4.01 COLORS

A. The colors used shall be selected by the Owner and the Engineer, from the manufacturer's standard colors.

B. All pipelines and associated equipment shall be color coded and banded as follows.

C. Banding shall consist of 3-inch wide painted bands at 30-inch center to center.

D. Color Schedule:

Item	Color
Raw Sewage Piping in Valve Chamber	Light Gray

4.02 COATING SCHEDULE

A. The following coating schedules is not guaranteed to be complete. The coating systems manufacturers are listed in no particular order, any of the four listed systems, or equal may be used.

Wastewater					
		Carboline	**Tnemec**	**AkzoNobel (International, Devoe, Glidden Professional)**	**Sherwin Williams**
B.	Exterior nongalvanized, ferrous metal surfaces not submerged: Project Specific Components: Valve Chamber Piping				
	1. Subject to splash or spills or atmospheric:				
	Surface Preparation:	SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils	SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5- 2.0 mils	SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils	SSPC-SP 6 (NACE 3) Commercial Blast Cleaning, surface profile 1.5-2.0 mils
	Primer:	1 coat, Carbozinc 859 (3.0-5.0 mils DFT)	1 coat, 90-97 Tneme-Zinc, (DFT 2.5-3.5 mils).	1 coat, CathaCoat 313 (DFT 2.0-4.0 mils)	1 coat, Corothane I Galvapac (DFT 2.0-4.0 mils)
	Intermediate:	1 coat, Carboguard 60 (4.0-6.0 mils DFT)	1 coat, 27 Typoxy, (DFT 2.5-4.0 mils).	1 coat, Devran 224HS (DFT 4.0-8.0 mils)	1 coat, Macropoxy 646 (DFT 3.0-5.0 mils).
	Final:	1 coat, Carbothane 134HG (2.0-2.5 mils DFT)	1 coat, 72/73 Endura-Shield (DFT 2.5-5.0 mils).	1 coat, Devthane 359 (DFT 3.0-5.0 mils)	1 coat, Hi-Solids Polyurethane (DFT 3.0-5.0 mils).

END OF SECTION

SECTION 15210
PIPING

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the furnishing and installing of all pipelines 4-inch diameter and larger shown on the Drawings or as required to complete the Work.

B. Piping less than 4-inch diameter, will be included under other Sections unless otherwise specified.

C. Material to be furnished and installed, but not limited to:

1. All pipe, fittings, specials, bends, beveled pipe, adapters, bulkheads, stoppers, plugs, joint restraints, joints and jointing materials.
2. Pipe supports other than those specified in Section 15010.
3. Install temporary plugs and/or stoppers and harnessing.

D. The Contractor shall make adequate field measurements before new piping is fabricated.

E. All wall, floor, and roof penetrations and any building modifications which are required for the installation of the Work under this Section shall be included in this Section.

F. Instruments which are to be located in pipelines 4-inch in diameter and larger shall be furnished under Division 16 and installed under this Section.

1.02 QUALITY CONTROL

A. Field Inspection:

1. All pipe sections, specials, and jointing materials shall be carefully examined for defects and no piece shall be laid that is known to be defective. Any defective piece discovered installed shall be removed and replaced with a sound one in a manner satisfactory to the Resident Project Representative at the Contractor's expense.
2. Defective material shall be marked with lumber crayon and removed from the job site before the end of the following day.

B. Field Testing:

1. All materials, process of manufacturing, and finished pipe shall be subject to inspection and approval.
2. The Resident Project Representative may select one sample of pipe on the job site of each production run of each size and type of pipe to be tested by the laboratory. The Contractor shall furnish the first test piece or pipe core and any additional samples required because of failures. Should the sample fail to meet

specifications, retests shall be conducted by the laboratory in conformance with the specifications.

1.03 SUBMITTALS

A. Submit shop drawings in accordance with Section 01300 showing: layout plan and dimensions, schedule of pipe fittings and specials, materials and class for each size and type of pipe, joint details, and any special provisions required for assembly.

B. Drawings shall show the position and elevation of valves, pumps, and/or other equipment served by the various pipe systems.

C. If directed by the Engineer, each certificate shall be accompanied by a report showing test results compared to specification requirements.

PART 2 PRODUCTS

2.01 PROCESS AND PRESSURE PIPE

A. Ductile Iron Pressure Pipe (DIP):

1. Ductile Iron Pressure Pipe (DIP) shall conform to ANSI A21.51 or AWWA C151 and shall be pressure class 350 psi for sizes 12-inch and below, and pressure class 300 psi for larger sizes unless otherwise specified herein.

2. Flanged fittings shall be ductile iron and conform to ANSI A21.15 or AWWA C115. All fittings shall have a pressure rating of 250 psi for all pipe sizes unless otherwise specified.

3. Ductile Iron pipe inside buildings or structures shall be joined with flanged, or mechanical joints as shown on the Drawings, or as indicated in the pipe schedule. All mechanical joints shall have retainer glands. Flanges shall comply with ANSI 21.15 or AWWA C115 and shall be ANSI 125-pound drilling, unless otherwise specified. Flanged joints shall have full face 1/8-inch rubber gaskets or of thickness and type approved by the Engineer. The pipe shall not be threaded or flanged in the field. Flanges shall be firmly bolted with machine, stud, or tap bolts of the proper size and number. Within buildings the bolts and nuts shall be of the best quality mild steel, with true threads, meeting the requirements of ANSI B16.1.

4. Flange adapters for plain end pipe (not fittings), where specified, shown on Drawings, or approved by Engineer shall be a restrained flange adapter. The restraining mechanism shall be multiple gripping wedges set against the pipe wall. Twist off nuts shall be used to ensure proper actuation of the restraining device. The restrained flange adapter shall be Series 2100 Megaflange by Ebaa Iron, Inc., or equal.

5. Couplings, if required or permitted, shall be Dresser Style 38, Rockwell, or equal. Restrained coupling shall be Dresser Style 167 Lock Coupling, Rockwell, or equal.

2.02 PROCESS AND PRESSURE PIPE NUTS AND BOLTS

A. Nuts and bolts used on buried pressure pipe and fittings in contact with earth shall be Cor-Blue coated low alloy steel and have a minimum yield strength of 45,000 psi complying with ANSI A21.11 and AWWA C111.

B. Nuts and bolts encased in grout on concrete pressure pipe shall conform to recommendations of the pipe manufacturer.

C. All other nuts and bolts shall be low carbon steel in conformance with the chemical and mechanical requirements of ASTM A307, Grade B. Higher strength bolts will be acceptable.

2.03 PIPE HANGERS AND SUPPORTS

A. Pipe hangers and supports shall be as specified in Section 15010.

2.04 COATINGS AND LININGS OF PROCESS AND PRESSURE PIPE

A. Coatings and linings where required shall conform to the following requirements unless otherwise indicated in Part 4 of this Section or on the Drawings.

B. Ductile Iron Pipe:

1. Ductile iron pipe, and fittings unless otherwise specified, shall be lined on the interior with a standard thickness cement lining meeting ANSI A21.4 and AWWA C104. A seal coat of bituminous material shall be applied in conformance with the above Specifications. Piping used for compressed air shall not receive a cement lining.

2. All pipe used within buildings and structures and which are to receive field coats of paint shall not be coated with any black bituminous paint. Such pipe, after proper cleaning, shall be painted with one coat of primer paint that is compatible with the field coats. Painting specifications shall be followed for cleaning and painting.

2.05 RESERVED

2.06 WALL PIPE AND SLEEVES

A. Type A Wall Pipe:

1. Cast iron wall pipe shall be used where noted on the Drawings.

2. Wall pipe shall be cast in place with joints as indicated on the Drawings.

3. Where wall pipe is flush with wall, bolt holes shall be tapped for studs.

B. Type B Sleeve:

1. Type B sleeves are for use in exterior walls.

2. Type B sleeves consist of casting in place a cast iron sleeve two sizes larger than the service pipe with couplings on both ends of the sleeve.

3. Service pipe shall be caulked in place with oakum. The oakum shall be covered with a minimum of 1-inch of lead wool on both ends.

C. Type C Sleeve:

1. Type C sleeves are used in exterior walls and other walls as designated on the Drawings.

2. Type C shall be a modular mechanical type seal of interlocking synthetic rubber links.

3. Unless otherwise indicated, the seal shall be suitable for corrosive service in a temperature range of minus 40 degrees F to 250 degrees F. The pressure plates shall be of delrin plastic for good resistance to organic compounds. The bolts and nuts shall be of 18-8 stainless steel. The sealing elements shall be of EPDM rubber which has high resistance to most organic and inorganic materials.

D. Type D Floor Sleeve:

1. Type D sleeves are used for pipes passing through floors.

2. Type D sleeves consist of casting in place a Schedule 40 steel sleeve with four anchors in the floor slab. The sleeve shall be one size larger than the service pipe or 1-inch larger than the flange on the service pipe. The sleeve shall extend 1-inch above the finish floor surface.

E. Type E Sleeve:

1. Type E wall sleeves shall be used where noted on the Drawings.

2. Type E sleeves consist of casting in place a mechanical joint, cast iron wall sleeves meeting the requirements of AWWA C110 and C111.

3. Each Type E sleeve shall be sealed using plain rubber gaskets, follower glands, and mechanical joint studs meeting the requirements of AWWA C111 on both ends.

F. Type F Sleeve:

1. Type F sleeves shall be used for passing through existing masonry walls.

2. Type F sleeves shall be constructed as detailed on the Drawings using 15-pound felt paper and sealant.

G. Type G Sleeve:

1. Type G sleeves used for passing through gastight floors shall be similar to Type C sleeves with the addition of non-shrink grout as shown on the Drawings.

H. Type H Sleeve:

1. Type H sleeves shall be similar to Type G sleeves and used for passing through gastight walls.

2. Type H sleeves shall be as detailed on the Drawings.

I. All wall pipes and sleeves shall be coated or lined in accordance with the appropriate materials for its service.

2.07 EXPANSION JOINTS

A. Expansion joints as specified below shall be installed as per Section 15010.

B. Expansion joint construction shall include a neoprene inner tube extending through the bore to the outside edge of both flanges. The inner tube shall be covered with a flexible multiple layer fabric carcass of high strength rubber impregnated synthetic fibers with steel wire or reinforcement rings integral with the fabric to assure sufficient rigidity for vacuum service and high pressure. An outer cover coated with Hypalon paint shall cover the carcass and provide full protection against ozone and weathering.

C. Flange faces shall be neoprene covered and drilled to match drilling in mating flanges. Flange faces shall also be backed by split steel flange retaining rings.

D. All expansion joints shall be suitable for service temperatures of 225 degrees F.

E. All expansion joints used for vacuum service shall be capable of withstanding a 30-inch Hg vacuum.

F. Expansion joints shall have recommended working pressures compatible with the service for which they are installed.

G. All expansion joints shall be equipped with control units to restrict excess axial compression and elongation. Control units shall consist of plates bolted to pipe flanges on each end of the expansion joint and long control bolts extending between pipe flanges.

H. Expansion joints on pipes used for digester gas service shall be the open arch type.

I. Expansion joints on sludge piping shall be of filled arch construction to prevent solids accumulation at the joint.

J. Expansion joints on pipes used for fuel oil and digester gas service shall have Buna-N tubes.

K. For those locations where expansion joints are used to replace valves, spool pieces, or other short sections, standard single arch expansion joints may be of insufficient length. At these locations double, triple, and quad arch expansion joints shall be used as required.

L. Expansion joints shall be Mercer Rubber Company Style 500-700 or equal.

PART 3 EXECUTION

3.01 PRODUCT HANDLING

A. Care shall be taken in handling and transporting to avoid damaging pipes and their coatings. Loading and unloading shall be accomplished with the pipe under control at all

times and under no circumstances shall the pipe be dropped. Pipe shall be securely wedged and restrained during transportation and supported on blocks when stored in the shop or field.

B. Store all pipe on a flat surface so as to support the barrel evenly. It is not recommended that pipe be stacked higher than 4-feet. Plastic pipe, if stored outside, shall be covered with an opaque material to protect it from the sun's rays.

3.02 PIPE INSTALLATION

A. General:

1. All pipe shall be laid to lines and grades in conformance with Section 01800.
2. Wherever piping passes through walls or floors, a wall casting pipe or sleeve of the type indicated on the Drawings shall be installed. Escutcheons shall be provided for pipe passing through finished walls, floors, or ceilings.
3. Pipe Anchoring:
   a. Approved joint restraints shall be installed for the distance from each side of each bend, valve, plug, tee, or wye in locations shown or scheduled on the Drawings.

B. Connections to Existing Pipes

1. Unless otherwise specified, shown on the Drawings, or directed, connections to existing sewers shall be made in conformance with the jointing materials manufacturer's recommendations and as directed by the Resident Project Representative.
2. Where new piping is to be connected into an existing joint, said joint shall be cleaned sufficiently to result in a liquid- or gastight seal. If applicable, a new gasket shall be supplied and installed.

C. Process and Pressure Pipe:

1. Pipe and appurtenances shall be installed true to line, grade, and location; with joints centered, spigots home; pipe properly supported and restrained against movement; and all valve stems plumb.
2. All elbows, tees, plugs, etc., shall be properly anchored, blocked, or otherwise restrained to prevent movement of the pipe in the joints due to internal or external pressure.
3. The open ends of all pipes and special castings shall be plugged or otherwise closed with a watertight plug to the approval of the Resident Project Representative before leaving the Work for the night, and at other times of interruption of the Work. All pipe ends which are to be permanently closed shall be plugged or capped and restrained against internal pressure.
4. Where new or existing pipe requires cutting in the field it shall be done in a manner to leave a smooth end at right angles to the pipe centerline. The finished cut must be approved by the Resident Project Representative.

5. Joints:

a. Gaskets - Just prior to joining the pipes, the surfaces of the joint rings shall be wiped clean and the joint rings and rubber gaskets shall be liberally lubricated with an approved type of vegetable oil soap. The spigot end, with the gasket placed in the groove, shall be entered into the bell of the pipe already laid, making sure that both pipes are properly aligned. Before the joint is fully "home," the position of the gasket in the joint shall be determined by means of a suitable feeler gauge supplied by the pipe manufacturer. If the gasket is found not to be in proper position, the pipes shall be separated and the damaged gasket replaced. The pipe is then forced "home" firmly and fully. In its final position, the joint between the pipes shall not be deflected more than 1/2-inch at any point.

3.03 SLEEVES AND WALL PIPE

A. Type A wall pipes shall be provided for all pipes passing through the exterior walls unless other sleeve types or wall pipes are designated on the Drawings. Type C sleeves shall be provided in interior walls unless designated otherwise on the Drawings.

B. At all points where piping passes through floors, Type D sleeves shall be provided, unless otherwise designated on the Drawings.

C. Other sleeve types and wall pipe shall be provided as indicated on the Drawings.

D. All wall pipes and sleeves shall be coated or lined in accordance with the appropriate materials for its service.

3.04 PRESSURE AND LEAKAGE TESTS FOR PROCESS AND PRESSURE PIPE

A. The Contractor shall furnish the pump, pipe connections, taps, gauges, auxiliary water container, bulkheads, plugs, and other necessary equipment and make pressure and leakage tests of all lines including the joint between existing and new pipes unless otherwise directed by the Engineer.

B. Tests shall be conducted on all pipelines or valved sections thereof as directed by the Resident Project Representative. Testing of pipelines laid in excavation or bedded in concrete shall be done prior to backfilling or placing concrete cover, except restrained sections of pipe which shall be backfilling prior to testing, unless otherwise permitted by the Engineer. Tests on lines anchored or blocked by concrete shall not be conducted until the concrete has taken permanent set.

C. The line or section thereof to be tested shall be filled slowly with water to expel all air. Hydrostatic pressure shall be applied by pumping water from an auxiliary supply. The test pressure shall be maintained two hours minimum and additional time as required for thorough inspection to find any leaks or defects in the force main and appurtenances. Unless indicated otherwise in Part 4, the test pressure shall be 100 pounds per square inch or 50% above the normal operating pressure, whichever is

greater. Should the pipe section fail to pass the tests, the Contractor shall find and correct failures and repeat the tests until satisfactory results are obtained.

D. Leakage tests shall be made simultaneously with or following completion of pressure tests of all lines or valved sections thereof. Leakage is defined as the quantity of water added to the pipe under test to maintain the required test pressure for a specified time. The leakage test pressure shall be not less than the maximum operating pressure of the section under test. The duration of the leakage test shall be not less than two hours. Allowable leakage for buried piping shall not exceed 9 gallons per inch of pipe diameter per mile of pipe in 24 hours. For piping not buried, any leakage during the test is unacceptable.

E. Testing of lines governed by other authorities, i.e. natural gas, shall be witnessed and approved by the authority.

3.05 RESERVED

3.06 INSTRUMENTATION CONNECTIONS

A. The Contractor shall make all necessary allowances for and install all controls and instrumentation furnished under any Contract Division and which require in-line connection to process and pressure piping.

B. The Contractor shall provide all necessary mounting bosses, pipe and boss taps, plugs, tees, and any miscellaneous appurtenances to allow connection of Instrumentation and Controls and their associated piping to process and pressure piping.

C. Thermowells complete with all appurtenances listed in Division 16 shall be furnished and installed under that Division. Thermowells complete with all appurtenances which are not included in the list in Division 16 and are to be installed in piping under this Section, shall be furnished and installed under this Section.

D. Instrumentation and Controls are furnished and specified under various Sections including Section 16902. Any schedules shown in Section 16902 are not guaranteed to be complete.

PART 4 SPECIAL PROVISIONS

4.01 LEAKAGE TESTING

A. The leakage testing requirements of this section are waived. A visual inspection of the piping placed into service shall be performed to test the pipe for leakage

4.02 PIPE LAYOUTS

A. The final pipe layouts shall be prepared based upon piping measurements, field confirmed by the Contractor and submitted for approval by the Engineer in the form of a shop drawing.

4.03 PIPING SCHEDULE

A. The following letter designations are used in the Piping Schedule:

Material Designation:

DIP - Ductile Iron Pipe
VCP - Vitrified Clay Pipe
PVC - Polyvinyl Chloride
PPVC - Perforated Polyvinyl Chloride
FRP - Fiberglass
Steel - Steel
SWS - Spiral Welded Steel
CPP - Concrete Pressure Pipe
RCP - Reinforced Concrete Pipe
CPT - Corrugated Polyethylene Tubing

B. Schedule:

Service	Size	Material	Remarks
Sanitary Sewage	8-inch	DIP	Valve Chamber & Bypass

C. Schedules are not guaranteed to be complete. All piping shown on the Drawings or specified shall be furnished and installed by the Contractor whether or not listed in the above schedule.

D. See Section 02555 for buried pipe.

END OF SECTION

SECTION 15211
SMALL PIPING AND VALVES

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing all pipelines and valves less than 4-inch in diameter as shown on the Drawings or as required for a complete piping system for each service or combination of services except the piping and valves included in Section 15400 and Section 15500.

B. Each piping system shall be adequate to conduct and control the flow of process water, plant water, non-potable water, instrument air, compressed air, vacuum, natural gas, sewage gas, propane, fuel oil, chemicals, sewage, sludge, sampling or other uses as specified or shown on the Drawings.

C. This Section includes, but is not limited to:

1. All pipe, fittings, and connections for water supply to equipment and waste to drains.
2. Valves less than 4-inch in diameter, control devices, pipe hangers, anchors, supports, and sleeves for the piping systems covered under this Section.
3. Hose bibbs, sill cocks, and hydrants.
4. Non-potable water supply, drain lines, and connections to boilers, pump priming systems, pump gland seals, valve operating cylinders, or other equipment requiring these services.
5. Compressed air piping, valves, connections to valve operators, and other equipment requiring compressed air.
6. Compressed air, non-potable water, natural gas, propane, vacuum, deionized water, and other services as required for laboratory service.

D. The Contractor shall remove all existing pipelines and valves less than 4-inch in diameter that are indicated on the Drawings to be removed except as specified elsewhere. Removals shall be done in accordance with the requirements of Section 02110.

E. The Contractor shall furnish, install, and remove all temporary piping and valves that are required to maintain processes in operation during construction.

F. All wall, floor, and roof penetration and any building modifications which are required for the installation of the Work under this Section shall be included in this Section.

G. Instruments which are to be located in pipelines to be furnished under Division 16 shall be installed under this Section.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Drawings shall include plan dimensions to and elevations of sleeves, inserts, and anchors, the size and location of each run of pipe, and the location of valves and unions.

   b. Manufacturer's literature, catalog data, specifications, and illustrations shall be bound in a brochure which includes a complete bill of materials.

2. Information for the Record:

   a. Operation and maintenance manuals.

PART 2 PRODUCTS

2.01 PIPING MATERIALS

A. Stainless Steel Pipe:

1. Stainless steel pipe less than 4-inch in diameter shall be designed and fabricated in accordance with ASTM A312. The interior surface of the pipe shall be smooth with no protrusions, stiffeners, or bracing. The pipe and fittings shall be constructed of 304L stainless steel, or as specified on the Drawings.

2. Stainless steel pipe shall be minimum Schedule 40S, unless otherwise noted on the Drawings.

3. Fittings shall conform to ASTM A403 and shall have the same wall thickness and structural properties as the pipe. All bends shall be long radius smooth type. Mitered bends will not be acceptable.

4. Flanges where required shall be ASTM A182-F304L flanges with full facing gaskets and centering rings. Flange bolts shall be stainless steel.

5. Wherever possible, butt weld fittings shall be used for field welding. All welds shall be made by a certified welder and shall conform to procedures for which the welder has been certified. The Contractor shall submit certification statements for the welders and the methods employed. Belled end fittings may be used in lieu of butt weld fittings on air lines.

6. All welds shall have full penetration and be smooth and without protrusions on the interior of the pipe. Weld metal shall be equal to or greater than the parent metal. Any cracks or blow holes appearing on the surface of a welding bead shall be ground away before depositing the next bead.

7. All stainless-steel surfaces shall be passivated by the following procedures:

   a. All outside weld areas shall be wire brushed to remove weld splatter. Brushes shall be stainless steel and used only on stainless steel.

b. All stainless-steel assemblies and parts shall be completely immersed in a pickling solution of 6% nitric acid and 3% hydrofluoric acid at 140 degrees F for a minimum of 15 minutes. Parts shall be free of iron particles or other foreign material after this procedure.

c. Previously pickled parts shall be neutralized by immersion in a trisodium phosphate rinse.

B. PVC Pipe and fittings shall be composed of Class 12454-B rigid PVC compound in conformance with ASTM D1784 (formerly classified Type I, Grade 1). Pipe shall be Schedule 80 with a design stress of 2000 psi in conformance with ASTM D1785. All joints, unless otherwise shown on the Drawings, shall be solvent welded in conformance with ASTM D2855. Joint solvent shall be as recommended by the pipe manufacturer and shall comply with ASTM D2564. In pressure or vacuum lines and in gravity drains 1-inch diameter and less, the fittings shall be Schedule 80 and shall conform to ASTM D2467. For gravity drains greater than 1-inch diameter, the fittings shall conform to the requirements of ASTM D2665. PVC pipe shall be used for acid-resistant services and all lines carrying chlorine solution, sodium hypochlorite, De-ionized (DI) water and other chemicals unless otherwise shown on the Drawings or specified.

C. CPVC Pipe shall be composed of Class CPVC 23447-B plastic as defined in ASTM D1784 (formerly classified Type IV, Grade 1). Pipe shall be Schedule 80 chlorinated polyvinyl chloride pipe in accordance with ASTM F441. Fittings shall be schedule 80 and shall conform to ASTM F439. All joints, unless otherwise shown on the Drawings, shall be solvent welded in conformance with ASTM D2896. Joint solvent shall be as recommended by pipe manufacturer and shall comply with ASTM F493. CPVC pipe shall be used where designated in Part 4 or on the Drawings.

2.02 VALVES

A. Unless otherwise specified or shown on drawings, valves installed in pipelines 3-1/2-inch diameter and smaller for process water lines shall be gate valves; for compressed air and vacuum, globe valves; for natural and sewage gas lines, lubricated plug or eccentric nonlubricated plug valves; and for gas lines less than 2-inch diameter tapered nonlubricated plug cocks; for fuel oil, ball valves; for sludge, eccentric nonlubricated plug valves. Valves for other types of services when required will be specified under that Section.

B. Gate Valves shall be 150-pound, all bronze, rising stem, solid wedge disc furnished with screwed or flanged ends as required. Gate valves shall be Crane No. 431, Jenkins No. 47-U, Powell No. 514/515, or equal.

C. Quick Opening Gate Valves shall be used at locations as shown on the Drawings. Quick opening gate valve shall be Crane 432 or equal.

D. Globe Valves shall be 150-pound, all bronze body with renewable plug-type disc of 500 Brinell Hardness Stainless Steel. The seat ring shall be screwed-in and of the same material as the disc. Globe valves shall be Powell No. 2600, Crane No. 14-1/2P, Jenkins No. 2032, or equal.

E. Ball Valves through 2-inch shall be screwed end bronze, two-piece, 125 psi, Teflon seats, bronze trim, and blowout-proof stem, Nibco No. T-580-BR-Y-20, or equal.

2.03 SLEEVES

A. Type B Sleeve:

1. Type B sleeves are for use in exterior walls.
2. Type B sleeves consist of casting in place a black wrought iron sleeve two sizes larger than the service pipe with couplings on both ends of the sleeve.
3. Service pipe shall be caulked in place with oakum. The oakum shall be covered with a minimum of 1-inch of lead wool on both ends.

B. Type C Sleeve:

1. Type C sleeves are used in exterior walls and other walls as designated on the Drawings.
2. Type C shall be a modular mechanical type seal of interlocking synthetic rubber links by Link-Seal, or equal.
3. Unless otherwise indicated, the seal shall be suitable for corrosive service in a temperature range of minus 40 degrees F to 250 degrees F. The pressure plates shall be of Delrin plastic for good resistance to organic compounds. The bolts and nuts shall be of 18-8 stainless steel. The sealing elements shall be of EPDM rubber which has high resistance to most organic and inorganic materials.

C. Type D Floor Sleeve - Type D sleeves consist of casting in place a steel sleeve with four anchors in the floor slab. The sleeve shall be one size larger than the service pipe or 1-inch larger than the flange on the service pipe. The sleeve shall extend 1-inch above the finish floor surface.

D. Type E Sleeve:

1. Type E wall sleeves shall be used where noted on the Drawings.
2. Type E sleeves consist of casting in place mechanical joint, cast iron wall sleeves meeting the requirements of AWWA C110 and C111.
3. Each Type E sleeve shall be sealed using plain rubber gaskets, follower glands, and mechanical joint studs meeting all requirements of AWWA C111 on both ends.

E. Type F Sleeve:

1. Type F sleeves shall be used for passing through masonry walls, except as otherwise noted on the Drawings.
2. Type F sleeves shall be constructed as detailed on the Drawings using 15-pound. felt paper and sealant.

F. Type G Sleeve - Type G sleeves used for passing through gastight floors shall be similar to Type C sleeves with the addition of non-shrinking grout as shown on the Drawings.

PART 3 EXECUTION

3.01 INSTALLATION

A. Cutting of all pipe shall be done with sharp tools. The ends of each pipe shall be reamed until all burrs or fins are removed. Full tapered threads shall be used throughout and threaded joints shall turn up perfectly tight without the use of filling substances. A standard pipe joint paste or tape suitable to use of pipe shall be used on the male threads only, and none shall be allowed to accumulate on the inside of the pipes. All connections between pipe, pipe hangers, and equipment shall be made with an approved dielectric insulating material. Dielectric unions or insulated couplings shall be installed between any dissimilar metallic piping materials or at connections between dissimilar metallic pipes and equipment, tanks, etc.

B. Pipe joints shall conform to respective industry standards.

C. Expansion and contraction of the piping system shall be provided for by the use of swing joints, right angle loops, or approved expansion joints. Branch connections shall have three elbow spring pieces to allow for movement. Unless specified in Part 4, the piping system shall provide for the expansion as required in Section 15010. An expansion joint is also required at all building isolation or expansion joints.

D. Interior and exterior pipelines shall be installed and graded in accordance with State and/or Local Codes. Interior pipes shall run at right angles or parallel to building walls, placed as close as practicable to the ceiling and/or walls, and supported according to Section 15010. Drain valves shall be installed at all low points.

E. Pipe groups shall be run parallel with pipes of other trades, and wherever practicable, all piping shall be supported on common group hangers unless pitch of pipe as hereinbefore mentioned is required.

F. The piping shall be installed in a workmanlike manner and shall avoid interference with columns, beams, equipment, and other piping or fixed construction. A minimum of 7-feet of headroom shall be maintained at any point including stairs.

G. Type C wall sleeves shall be provided for all pipes passing through exterior walls unless other sleeve types are noted on the Drawings. Type C sleeves shall also be provided in interior walls where indicated on the Drawings, Type D floor sleeves shall be used where piping passes through floor. Other sleeve types shall be used where shown on the Drawings.

H. Unless shown otherwise on the Drawings, all buried pipe carrying liquids shall be installed with a minimum cover of 48-inches.

I. Buried pressure piping which carries gases shall be installed with a minimum cover of 3-feet.

J. When new piping crosses existing utilities and other obstructions which force a change in elevation or horizontal alignment, the Contractor shall install the new piping at a deeper elevation or new alignment to avoid the obstructions unless otherwise instructed by the Engineer. Such changes in elevation or alignment shall be made either by installing fittings or by deflecting joints in accordance with the pipe manufacturer's recommendations. Such Work shall be performed at no additional cost to the Owner. To the extent possible, pressure and process piping shall be installed at a constant grade. All changes in grade shall be approved by the Engineer.

K. Where PVC piping is laid in a trench, the bottom of the trench shall be well graded and compacted to insure even bearing for the full length of the pipe and the pipe shall be snaked at approximate 50-foot intervals to provide for expansion or contraction. Prior to testing the pipe, the pipe shall be center loaded with backfill between joints before testing to prevent the pipe from arching or whipping under pressure. During backfill the line shall be pressurized to 25 psi to minimize impact damage.

L. All valves shall be installed with their stems horizontal or above. As far as possible, all valves of the same type shall be of the same manufacturer.

M. Solenoid operated valves shall be installed in horizontal lines with the solenoid mounted vertically and upright.

N. The T-drill method for manufacturing tees in continuous copper tubing is not acceptable.

3.02 EQUIPMENT CONNECTIONS

A. The Contractor shall make all connections where required between the various piping systems and all pieces of equipment. This shall include adapters, traps, backwater valves, or other fittings required when not furnished with the equipment.

B. Unions - Provide a union or flange in piping connections to each valve, device, or item of equipment, and elsewhere as required to makeup or disconnect piping. Each union shall be so installed as to permit the removal of parts and equipment for inspection and cleaning, and shall be installed in a position which will permit the valve device or part to be removed without disconnection of any piping except unions. Union and flange shall be installed in such a position as will be accessible for disconnection items which are to be screwed. All ground joint unions on copper lines shall be cast brass or bronze. Wrought copper unions are not to be used. All unions, where possible, shall be brass to MPT type.

3.03 INSTRUMENTATION CONNECTIONS

A. The Contractor shall make all necessary allowances for and install all controls and instrumentation furnished under any Contract Division and which require in-line connection to process and pressure piping.

B. The Contractor shall provide all necessary mounting bosses, pipe and boss taps, plugs, tees, and any miscellaneous appurtenances to allow connection of Instrumentation and Controls and their associated piping to process and pressure piping.

C. Instrumentation and Controls are furnished and specified under various Sections including Section 16902. Any schedules shown in Section 16902 are not guaranteed to be complete.

PART 4 SPECIAL PROVISIONS

Not Used.

END OF SECTION

SECTION 15250
VALVES

PART 1 GENERAL

1.01 SCOPE

A. This Section includes the furnishing and installing valves, flap gates, and shear gates 4-inch and larger.

B. Floor stands, floor boxes; valve boxes; gears, manual, hydraulic, and electric operators; extension stems; stem guides and supports; brackets; gaskets; bolts and nuts; and other accessories shall be provided as necessary to complete the Work.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. The Contractor shall indicate all variances from the requirements of the Contract Documents.

   b. Scaled dimensional drawings.

   c. Wiring schematics with termination point identification.

   d. Piping schematics.

   e. Materials of construction.

   f. Manufacturer's catalog data.

   g. General Arrangement Drawings.

   h. Motor information per Section 11050.

2. Information for the Record:

   a. Operation and maintenance manual.

PART 2 PRODUCTS

2.01 GENERAL

A. All valves and appurtenances shall be of standard make approved by the Engineer and shall have the name, monogram, or initials of the manufacturer cast thereon. They shall be built and equipped for the type of operation shown on the Drawings, specified herein, or as directed by the Engineer.

B. Opening Direction - Unless otherwise specified in Part 4, valves with screw stems shall open by turning counterclockwise, the direction being indicated by an arrow cast where easily visible to operator.

C. Connections - Valves shall be provided with hubs, spigots, flanges, mechanical groove-type, screw, or other connections compatible with the pipe in which they are installed or scheduled in Part 4.

D. Unless otherwise specified, a stuffing box packed with O-ring seals shall be used to seal the stem of the valve. The seal system used shall be replaceable without removing bonnet or rotating element. Gaskets shall be of either Buna or a rubber composition.

E. Bolts and nuts on buried valves shall be a low alloy steel cathodic to the valve body and having a minimum yield strength of 45,000 psi. All other nuts and bolts shall be low carbon steel conforming with the mechanical and chemical requirements of ASTM A307, Grade B.

2.02 RESERVED

2.03 RESERVED

2.04 RESERVED

2.05 RESERVED

2.06 RESERVED

2.07 COMBINATION WASTEWATER AIR/VACUUM RELIEF VALVES

A. Combination wastewater air / vacuum relief valves shall perform the following functions:

1. Exhaust large quantities of air from the force main during filling of the piping.
2. Allow air to enter the force main thereby preventing a vacuum condition in the force main.
3. Provide continuous valve operation by allowing accumulated air in force main to escape during force main operation.

B. Combination wastewater air / vacuum relief valves shall be manufactured and tested in accordance with AWWA C512 and shall be designed for wastewater service.

C. Combination wastewater air / vacuum relief valves shall be designed for operating pressures up to 150 psi.

D. Inlet and outlet orifices shall be a minimum of 2-inches in diameter.

E. Combination wastewater air / vacuum relief valves with inlets 4-inches and diameter and smaller shall have NPT inlets and outlet. The body inlet connections shall be hex for wrench tightening. The valve body shall have a 2-inch NTP cleanout and 1-inch minimum NTP drain connection 3 additional pipe plugged locations for cleaning access.

F. Acceptable Models

1. Combination wastewater air / vacuum relief valves shall be Valmatic Series 800 Single Body Design or approved equal.

2. In order to achieve consideration as an approved equal material the air release and vacuum considerations shall be equal to the specified unit.

a. Valmatic 802A-M (2-inch inlet and outlet)

b. Exhaust Flow Rate = 270 SCFM with Change in Pressure of 2 psi

c. Vacuum Flow Rate = 270 SCFM with Change in Pressure of 5 psi

d. A 1/8-inch minimum orifice is required for exhausting accumulated air in the force main.

G. Materials of Construction

1. The valve body shall be constructed of ASTM A126 Class B Cast Iron.

H. Structure

1. Contractor shall provide precast concrete structures as specified in Section 02552 and shown on the drawings.

I. Accessories

1. Each air/vacuum relief valve shall be furnished with an isolation valve on the connection the force main.

2. The isolation valve shall be a ball valves of the sizes shown on the plans. The ball valve shall be screwed end stainless steel, two piece, Teflon seats, and blowout-proof stem, Nibco No. T-580-S6-R-66-LL, or equal. Isolation valves 3 inches and larger shall be gate valves meeting the requirements or this Section.

2.08 SHOP PAINTING

A. All iron parts shall be painted before leaving the shop.

B. Unless otherwise specified, all internal ferrous surfaces of each valve except finished or bearing surfaces shall be shop painted with two coats of an asphalt varnish.

C. Unless otherwise specified, all exterior ferrous surfaces of each valve except finished or bearing surfaces shall be shop painted with two coats of a universally compatible primer or in the case of valves buried or submerged, with two coats of an asphalt varnish.

2.09 SOURCE QUALITY CONTROL

A. Each check, gate, butterfly, and ball valve shall be submitted to operation and hydrostatic tests at the manufacturer's plant as specified in applicable AWWA Standards.

B. Other valves shall be tested in conformance with applicable specifications in Part 4 of this Section.

C. Other valves shall be tested in conformance with applicable specifications in Part 4 of this Section.

PART 3 EXECUTION

3.01 INSTALLATION

A. All valves shall be carefully installed in their respective positions free from distortion and stress. Connecting joints shall conform to applicable requirements of Section 15210.

B. Stem guides shall be accurately aligned.

C. Double disc gate valves shall not be installed with the bonnet more than 90 degrees from an upright position.

D. Accessories:

1. Valve Boxes shall be installed in a plumb position and in alignment with the operating nut.

2. Extensions stems and stem guides shall be in alignment with operating nut and prevent binding and stresses on connecting pins.

3. When there is a change to the grade elevation, valve boxes new and existing shall be adjusted to the new grade elevation.

3.02 COMBINATION WASTEWATER AIR/VACUUM RELIEF VALVES

A. Air valves shall be placed at the location and elevations shown on the plans unless otherwise directed by the Engineer.

B. The Contractor shall notify the Engineer of changed conditions that require the pipe elevation to be changed, possibly requiring the location of the value to be adjusted.

3.03 TESTING

A. All valves shall be tested in place by the Contractor as far as practicable under the conditions for the pipelines in which they are placed, and defects revealed in valves or connections under test shall be corrected at the expense of the Contractor to the satisfaction of the Project Field Representative.

PART 4 SPECIAL PROVISIONS

4.01 VALVE SCHEDULE

A. The following letter designations are used in the Valve Schedule:

Type Designation	Connection Designation	Operator Designation
CV - Check Valve	F - Flanged	FB -Floor Box
GV - Gate Valve	W - Wafer	HW - Handwheel
PV - Plug Valve	MJ - Mechanical Joint	C - Chain
A – Air Valve	PE - Plain End	M - Motor
		L - Lever
		VB - Valve Box
		FS - Floor Stand

Use Designation	Service Designation
RW - Raw Wastewater	O-C - Open-Close
	M - Modulation

B. The Schedule is as follows:

Valve Number	Size (in.)	Type	Connection	Operator	Use	Service	Location
ARV	2	A	Threaded	N/A	RW	O-C	Manhole

C. Schedules are not guaranteed to be complete. All valves shown on the Drawings or specified shall be furnished and installed by the Contractor whether or not listed in the above schedule.

4.02 BURIED VALVES

A. Buried valves are located on proposed buried pressure pipes as specified in Section 02557.

END OF SECTION