

OFFICIAL CONTRACT DOCUMENTS

CONTRACT DOCUMENTS and SPECIFICATIONS

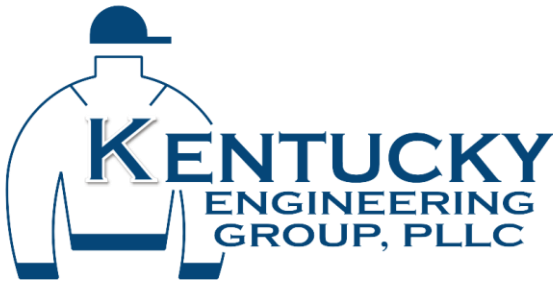
EAST-WEST INTERCONNECT PROJECT – PHASE 2

Contract No. 7

**WATER TREATMENT PLANT
IMPROVEMENTS**

GRAYSON COUNTY WATER DISTRICT

Leitchfield, Grayson County, Kentucky



Kentucky Engineering Group, PLLC

P.O. Box 1034

Versailles, Kentucky 40383



December, 2022

KEG Project No. 20016

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for the
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DECEMBER 2022

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ADVERTISEMENT FOR BIDS

Grayson County Water District
21 Shull White Road
Leitchfield, Kentucky 42754

Sealed Bids for the construction of the **East-West Interconnect Project – Phase 2 - Contract No. 7 - Water Treatment Plant Improvements** consisting of one (1) new dual carbon adsorption vessel system, three (3) new high service pumps, security fence, associated piping, valves, electrical, instrumentation and all related appurtenances as shown on the DRAWINGS and described in the SPECIFICATIONS will be received by Grayson County Water District at the District Office at 21 Shull White Rd, Leitchfield, Kentucky 42754 until **11:00 a.m. (CST - Local Time) Wednesday, February 1, 2023**, and then at said office publicly opened and read aloud.

Bids will be received for a single prime Contract. Bids shall be on a lump sum price basis as indicated in the Bid Form.

The Contract Documents may be examined at the following locations:

KENTUCKY ENGINEERING GROUP, PLLC., 101 High Street, Versailles, Kentucky 40383
Phone: 859.251.4127

GRAYSON COUNTY WATER DISTRICT, 21 Shull White Rd, Leitchfield, Kentucky 42754
Phone: 270.259.2917

Issuing office for the Bidding Documents is: LYNN IMAGING -328 Old Vine Street, Lexington, KY 40507, Phone: 859-255-1021, Website: www.lynnimaging.com. Printed copies of the Contract Documents may be obtained upon receipt of a non-refundable amount of \$300.00 for each complete set of documents. Included with the printed copy contract documents is an electronic download (as portable document format PDF).

All bids must be made on required Bid Form and must be fully completed and executed with original signatures and corporate seals. All bidders must be listed as plan holder by the plan distributor.

The contract is being funded by Kentucky Infrastructure Authority, SRF loan and/or USDA-Rural Development.

The Contract Time allotted for the substantial completion of this Contract is (270) consecutive calendar days with final completion within (300) consecutive calendar days.

Bidders must comply with President's Executive Orders No. 11246 and No. 11375 and any amendments or supplements to those Executive Orders. Attention of bidders is particularly called to the requirements as to conditions of employment to be observed under the contract, Section 3, Segregated Facility, Section 109 and E.O. 11246.

Bidders must certify they do not and will not maintain or provide for their employees any facilities that are segregated or based on race, color, creed or national origin. Bidders must comply with 41 CFR 60-4 in regard to affirmative action and to insure equal opportunity to females and minorities, and all that are applicable. Minorities and small businesses are encouraged to submit bids on this project.

Bidders must comply with Title VI of the Civil Rights Act of 1964 Anti-Kickback Act, and the Contract Work Hours Standard Act.

The procurement and performance of this contract are subject to the requirements of the Davis-Bacon Act.

Successful Bidder shall make positive efforts to use small, minority, women owned and disadvantaged businesses.

Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies to American Iron and Steel requirement to this project. All listed iron and steel products used in this project must be produced in the United States. The term "iron and steel products" means the following products made primarily of iron and steel: lines or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials. The de minimis and minor components waiver {all project specific waivers as applicable} apply to this contract.

Grayson County Water District, reserves the right to waive any bidding informalities and to reject any or all bids, for any reason. The right is reserved by the Owner, in the exercise of its sole judgment to reject any or all Bids, and to re-advertise and award the Contract in the regular manner or to waive any informalities, irregularities, mistakes, errors, or omissions in any Bid received and to accept any Bid deemed to be responsive to this invitation and favorable to interests of the Owner.

The sealed bid for this project shall be clearly marked on the outside of the envelope: "Sealed Bid for **East-West Interconnect - Phase 2 - Contract No. 7 - Water Treatment Plant Improvements Project**" for the Grayson County Water District. The bid may be mailed to: Grayson County Water District, 21 Shull White Road, Leitchfield, Kentucky 42754. A certified check or Bid Bond payable to Grayson County Water District, in the amount of five (5) percent of the Bid shall accompany the Bid.

The contract award will be made in writing to the lowest responsive and responsible bidder.

Nancy Cain, Chairperson

Date: January 2023

Grayson County Water District

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ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. The term "Bidder" means one who submits a Bid directly to Owner, as distinct from a subbidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible, and responsive Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes the Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents must be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid. Bids from anyone not on the Engineer's Plan Holders List will not be opened.
- 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, Bidder shall submit with its Bid written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and the additional information listed in the Bid Form.
- 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.

4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. If there are reports and/or additional information concerning site conditions available, they will be included as Appendices to the Bidding Documents.
2. Geotechnical Report: If a Geotechnical Report is available, it will be included as an appendix to the Bidding Documents. The Geotechnical Report describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations.

The Conditions in the Geotechnical Report are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the said Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the Report, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are reported.

Nothing in the report is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.

- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous 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 included but not limited to the AIS requirements as mandated and any subsequent statutes mandating domestic preference which apply to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials
- 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 Bidding Documents, 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 Bidding Documents, 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 – PRE-BID CONFERENCE

6.01 No pre-bid conference is scheduled for this project.

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 via email to rcarr@kyengr.com. 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 received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, 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 five (5) 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 91 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 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 Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Supplemental General Conditions and referred to in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids in the case of a proposed substitute and 5 days prior in the case of a proposed "or-equal". Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. Substitutes and "or-equal" materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General conditions 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.

- 11.03 If an award is made, Contractor shall be allowed to submit proposed substitutes and “or-equals” in accordance with the General Conditions.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 If required by the bid documents, the Bidder shall submit to Owner a list of the Subcontractors or Suppliers proposed for the major portions of 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.
- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, 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.
- 12.03 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.
- 12.04 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SGC 7.06.

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 and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, 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.

- 13.03 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 official address of the firm shall be shown.
- 13.04 A Bid by an individual shall show the Bidder's name and official address.
- 13.05 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 official address of the joint venture shall be shown.
- 13.06 All names shall be printed in ink below the signatures.
- 13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.09 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. 11.8. The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of any cash allowances named in the Contract Documents as provided in Paragraph 11.02 of the General Conditions.
- The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of any cash allowances named in the Contract Documents as provided in Paragraph 11.02 of the General Conditions.
- 13.10 Each Bid must be submitted on the prescribed form and accompanied by the submittals listed in the Bid Form.

ARTICLE 14 – BASIS OF BID

14.01 Lump Sum

- A. Bidders shall submit a Bid on a lump sum basis set forth in the Bid Form.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one 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."

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

ARTICLE 23 – NOT USED

ARTICLE 24 – POWER OF ATTORNEY

- 24.01 Attorneys-in-fact who sign Bid Bonds or Contract Bonds must file with each bond a certified and effective dated copy of their power of attorney.

ARTICLE 25 – LAWS AND REGULATIONS

- 25.01 The Bidder's attention is directed to the fact that all applicable State Laws, municipal ordinance, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

ARTICLE 26 – SAFETY STANDARDS AND ACCIDENT PREVENTION

- 26.01 With respect to all Work performed under this contract, the Contractor shall:

- A. Comply with the safety standards provisions of applicable laws, building and construction codes and the "Manual of Accident Prevention in Construction" published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1518 as published in the "Federal Register", Volume 36, No. 75, Saturday, April 17, 1971.
- B. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.
- C. Maintain at his/her office or other well-known place at the job site, all articles necessary for giving first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or doctor's care of persons (including employees), who may be injured on the job site before the employer has made a standing arrangement for removal of injured persons to a hospital or a doctor's care.

ARTICLE 27 – WAGE RATE REQUIREMENTS

- 27.01 If the contract price is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFD 5.5(b) apply.

"General Decision Number: KY20230061 01/06/2023

Superseded General Decision Number: KY20220061

State: Kentucky

Construction Type: Heavy

Counties: Breckinridge, Caldwell, Carlisle, Crittenden, Fulton, Grayson, Hickman, Hopkins, Livingston, Muhlenberg, Ohio and Todd Counties in Kentucky.

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none">. Executive Order 14026 generally applies to the contract.. The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none">. Executive Order 13658 generally applies to the contract.. The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 01/06/2023

ENGI0181-009 07/01/2021

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 34.80	17.85
GROUP 2.....	\$ 31.94	17.85
GROUP 3.....	\$ 32.39	17.85
GROUP 4.....	\$ 31.62	17.85

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - Backhoe/Excavator/Trackhoe; Bulldozer; Crane; Drill; Grader/Blade; Loader; Mechanic; Scraper

GROUP 2 - Bobcat/Skid Steer/Skid Loader; Forklift; Tractor (50 H.P. or over)

GROUP 3 - Articulating Truck Operator

GROUP 4 - Oiler; Tractor (under 50 H.P.)

Operators on cranes with booms 150 feet and over (including jib) shall receive \$1.00 above Group 1 rate; 250 feet and over including jib shall receive \$1.50 above Class 1 rate. Combination Rate: All crane operators operating cranes, where the length of the boom in combination with the length of the piling leads equal or exceeds 150 feet, shall receive \$1.00 above the Group 1 rate.

Employees assigned to work below ground level are to be paid 10% above basic wage rate. This does not apply to open cut work.

IRON0782-010 08/01/2022

	Rates	Fringes
IRONWORKER (Reinforcing & Structural)		
Projects over \$20,000,000.00.....	\$ 31.87	23.22
Projects under \$20,000,000.00.....	\$ 30.28	23.22

LAB00189-001 07/01/2022

	Rates	Fringes
LABORER		
Concrete Saw (Hand Held/Walk Behind).....	\$ 24.01	17.12

LAB00561-003 07/01/2022

	Rates	Fringes
LABORER		
Form Worker.....	\$ 24.66	17.10

LAB01214-001 07/01/2022

	Rates	Fringes
LABORER		
Backfiller, Carpenter Tender, Common or General, Concrete Worker, Dumpman, Fence Erection.....	\$ 23.76	17.12
Pipelayer & Tamper (Hand Held/Walk Behind).....	\$ 24.01	17.12

UAVG-KY-0001 01/01/2020

	Rates	Fringes
LABORER: Grade Checker.....	\$ 24.08	14.93

SUKY2011-017 06/25/2014

Rates	Fringes
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CEMENT MASON/CONCRETE FINISHER...\$ 20.96	10.53
ELECTRICIAN.....\$ 32.35	2.18
LABORER: Flagger.....\$ 18.31	8.89
OPERATOR: Boring Machine.....\$ 25.35	13.00

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

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

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISIO"

BID FORM

East-West Interconnect Project – Phase 2
CONTRACT NO. 7 – WATER TREATMENT PLANT IMPROVEMENTS PROJECT
Grayson County Water District

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Grayson County Water District

21 Shull White Rd

Leitchfield. Kentucky 42754

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:

<u>Addendum No.</u>	<u>Addendum, Date</u>
ONE	JANUARY 27, 2023
_____	_____
_____	_____
_____	_____

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 execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following lump sum price:

- Notes
1. Bids shall include sales tax, where required, and all other applicable taxes and fees
 2. All specific cash allowances are included in the price(s) set forth and have been computed in accordance with Paragraph 11.02 of the General Conditions.

AWARD OF THIS CONTRACT will be based on the lowest responsible, responsive Bidder on the total of the BASE BID CONTRACT PRICE.

BASE BID CONTRACT PRICE:

ONE MILLION SIX HUNDRED THIRTY-ONE

(Use Words)

THOUSAND SEVEN HUNDRED EIGHTY

\$ 1,631,780⁰⁰

(Figures)

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete within 420 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 450 calendar days after the date when the Contract Times commence to run. **The first one hundred 180 days of the contract time shall be utilized as a submittal review period. Onsite mobilization is allowed, however, no construction activities related to submittals under review will be allowed until said submittal review has been completed. Contractor shall notify Engineer concerning mobilization and intended construction activity start dates**
- 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. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. List of Project References;
 - E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
 - F. Required Bidder Qualification Statement with supporting data; and
 - G. Manufacturer's Certification Letter (Attachment 15 SRF Supplemental General Conditions) on any approved "or equal" or substitute request to ensure compliance with AIS requirements and any subsequent statutes mandating domestic preference.

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.

NOTE(S) TO USER:

Careful attention to proper use of terms defined in the Instructions to Bidders, the General Conditions, and Supplementary Conditions is most important.

ARTICLE 9 – BID SUBMITTAL

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

_____ SCOTT & RITTER, INC.
By:  _____
[Signature]

[Printed name] _____ LARKIN RITTER, CHIEF EXECUTIVE OFFICER
(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] _____ TOMMY BLACKFORD

Title: _____ CONTRACTS ADMINISTRATOR

Submittal Date: _____ FEBRUARY 1, 2023

Address for giving notices:
_____ SCOTT & RITTER, INC.
_____ P.O. BOX 749
_____ BOWLING GREEN, KY 42102-0749

Telephone Number: _____ (270) 781-9988

Fax Number: _____ (270) 782-3267

Contact Name and e-mail address: _____ ADAM RITTER
_____ ARITTER@SCOTTANDRITTER.COM

Bidder's License No.: _____ 00889
(where applicable)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

PROPOSED SUBCONTRACTORS AND SUPPLIERS

Each bidder shall enter, in the spaces provided, the names of major subcontractors and suppliers he proposes to employ and the classification or type of work that they will perform. Upon award of contract, the named subcontractors and suppliers shall be employed to perform the work, unless changes are specifically authorized by the Engineer.

A major subcontractor is defined as a subcontractor whose subcontract constitutes approximately three (3) per cent or more of the total contract amount.

Failure to furnish all information requested in this Questionnaire may be cause for rejection of the Bid.

LIST OF SUBCONTRACTORS

<u>SUBCONTRACTOR'S /ADDRESS</u>	<u>WORK DESCRIPTION/TOTAL VALUE</u>
CALGON / PELTON	Carbon Adsorption Vessel
STRAEFFER - CHANDLER, IN	High Service Pumps
DJM ELECTRIC - BOWLING GREEN, KY	Electrical

Scott & Ritter

PROPOSED SUBCONTRACTORS AND SUPPLIERS

Each bidder shall enter, in the spaces provided, the names of major subcontractors and suppliers he proposes to employ and the classification or type of work that they will perform. Upon award of contract, the named subcontractors and suppliers shall be employed to perform the work, unless changes are specifically authorized by the Engineer.

A major subcontractor is defined as a subcontractor whose subcontract constitutes approximately three (3) per cent or more of the total contract amount.

Failure to furnish all information requested in this Questionnaire may be cause for rejection of the Bid.

LIST OF SUBCONTRACTORS

SUBCONTRACTOR'S /ADDRESS

WORK DESCRIPTION/TOTAL VALUE

Carbon Adsorption Vessel

High Service Pumps

Electrical

QUALIFICATIONS STATEMENT

THE INFORMATION SUPPLIED IN THIS DOCUMENT IS CONFIDENTIAL TO THE EXTENT
PERMITTED BY LAWS AND REGULATIONS

1. SUBMITTED BY:

Official Name of Firm: SCOTT & RITTER, INC.

Address: 2385 BARREN RIVER ROAD (42101)

P.O. BOX 749

BOWLING GREEN, KY 42102-0749

2. SUBMITTED TO: GRAYSON COUNTY WATER DISTRICT

3. SUBMITTED FOR: CONTRACT NO. 7 - WATER TREATMENT PLANT IMPROVEMENTS

Owner: Grayson County Water District

Project Name: Water Treatment Plant Improvements

TYPE OF WORK: Consisting of one (1) new dual carbon adsorption vessel system, three (3) new high service pumps, security fence, associated piping, valves, electrical, instrumentation and all related appurtenances.

CONTRACTOR'S CONTACT INFORMATION

Contact Person: ADAM RITTER

Title: PROJECT MANAGER

Phone: (270) 781-9988

Email: ARITTER@SCOTTANDRITTER.COM

4. AFFILIATED COMPANIES:

Name: N/A

Address: _____

5. TYPE OF ORGANIZATION:

SOLE PROPRIETORSHIP

Name of Owner: N/A

Doing Business As: _____

Date of Organization: _____

PARTNERSHIP

Date of Organization: N/A

Type of Partnership: _____

Name of General Partner(s): _____

CORPORATION

State of Organization: KENTUCKY

Date of Organization: SEPTEMBER 24, 1982

Executive Officers:

~~- President:~~ C.E.O. LARKIN RITTER

- Vice President(s): DAVID BAYLES

- Treasurer: N/A

- Secretary: LUKE RITTER

LIMITED LIABILITY COMPANY

State of Organization: N/A

Date of Organization: _____

Members: _____

N/A

JOINT VENTURE

Sate of Organization: N/A

Date of Organization:

Form of Organization:

Joint Venture Managing Partner

- Name: N/A

- Address:

Joint Venture Managing Partner

- Name: N/A

- Address:

Joint Venture Managing Partner

- Name: N/A

- Address:

6. LICENSING

Jurisdiction: KENTUCKY

Type of License: CERTIFICATE OF ELIGIBILITY

License Number: 00889

Jurisdiction: TENNESSEE

Type of License: CONTRACTOR'S LICENSE

License Number: 22087

7. CERTIFICATIONS

CERTIFIED BY:

Disadvantage Business Enterprise: N/A

Minority Business Enterprise: N/A

Woman Owned Enterprise: N/A

Small Business Enterprise: N/A

Other (_____): N/A

8. BONDING INFORMATION

Bonding Company: WESTERN SURETY COMPANY

Address: 151 N. FRANKLIN STREET

CHICAGO, IL 60606

Bonding Agent: CENTER OF INSURANCE

Address: 1240 FAIRWAY STREET

BOWLING GREEN, KY 42103

Contact Name: BRUCE BARRICK

Phone: (270) 781-6200

Aggregate Bonding Capacity: \$40,000,000+

Available Bonding Capacity as of date of this submittal: \$30,161,700.67

9. FINANCIAL INFORMATION

Financial Institution: INDEPENDENCE BANK

Address: 1950 SCOTTSVILLE ROAD

BOWLING GREEN, KY 42104

Account Manager: KELLY JACKSON

Phone: (270) 781-1776

INCLUDE AS AN ATTACHMENT AN AUDITED BALANCE SHEET FOR EACH OF THE LAST 3 YEARS

10. CONSTRUCTION EXPERIENCE:

SCOTT & RITTER, INC. VIEWS FINANCIAL RECORDS AS HIGHLY CONFIDENTIAL. IF DETERMINED THE LOW BIDDER, SCOTT & RITTER, INC. WILL MAKE FINANCIAL RECORDS AVAILABLE TO THE OWNER AT THE OWNER'S REQUEST.

Current Experience:

List on **Schedule A** all uncompleted projects currently under contract (If Joint Venture list each participant's projects separately).

Previous Experience:

List on **Schedule B** all projects completed within the last 5 Years (If Joint Venture list each participant's projects separately).

Has firm listed in Section 1 ever failed to complete a construction contract awarded to it?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Has any Corporate Officer, Partner, Joint Venture participant or Proprietor ever failed to complete a construction contract awarded to them in their name or when acting as a principal of another entity?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1 or any of its officers (or any of its partners if a partnership or any of the individual entities if a joint venture)?

YES NO

If YES, attach as an Attachment details including Project Owner's contact information.

11. SAFETY PROGRAM:

Name of Contractor's Safety Officer: DAVID BAYLES

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 500- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

SEE ATTACHED OSHA 300/300A LOGS

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all OSHA Citations & Notifications of Penalty (monetary or other) received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

NONE

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) list of all safety citations or violations under any state all received within the last 5 years (indicate disposition as applicable) - IF NONE SO STATE.

NONE

Provide the following for the firm listed in Section V (and for each proposed Subcontractor furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) the following (attach additional sheets as necessary):

Workers' compensation Experience Modification Rate (EMR) for the last 5 years:

YEAR	<u>2022</u>	EMR	<u>0.75</u>
YEAR	<u>2021</u>	EMR	<u>0.69</u>
YEAR	<u>2020</u>	EMR	<u>0.67</u>
YEAR	<u>2019</u>	EMR	<u>0.75</u>
YEAR	<u>2018</u>	EMR	<u>0.90</u>

Total Recordable Frequency Rate (TRFR) for the last 5 years:

YEAR	<u>2022</u>	TRFR	<u>2.676</u>
YEAR	<u>2021</u>	TRFR	<u>4.164</u>
YEAR	<u>2020</u>	TRFR	<u>4.175</u>
YEAR	<u>2019</u>	TRFR	<u>5.641</u>
YEAR	<u>2018</u>	TRFR	<u>7.316</u>

Total number of man-hours worked for the last 5 Years:

YEAR	<u>2022</u>	TOTAL NUMBER OF MAN-HOURS	<u>149,447</u>
YEAR	<u>2021</u>	TOTAL NUMBER OF MAN-HOURS	<u>144,066</u>
YEAR	<u>2020</u>	TOTAL NUMBER OF MAN-HOURS	<u>143,682</u>
YEAR	<u>2019</u>	TOTAL NUMBER OF MAN-HOURS	<u>141,805</u>
YEAR	<u>2018</u>	TOTAL NUMBER OF MAN-HOURS	<u>109,340</u>

Provide Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) Days Away From Work, Days of Restricted Work Activity or Job Transfer (DART) incidence rate for the particular industry or type of Work to be performed by Contractor and each of Contractor's proposed Subcontractors and Suppliers) for the last 5 years:


YEAR	<u>2022</u>	DART	<u>2.676</u>
YEAR	<u>2021</u>	DART	<u>2.776</u>
YEAR	<u>2020</u>	DART	<u>1.391</u>
YEAR	<u>2019</u>	DART	<u>5.641</u>
YEAR	<u>2018</u>	DART	<u>7.316</u>

12. EQUIPMENT:

MAJOR EQUIPMENT:

List on **Schedule C** all pieces of major equipment available for use on Owner's Project.

I HEREBY CERTIFY THAT THE INFORMATION SUBMITTED HEREWITH, INCLUDING ANY ATTACHMENTS, IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NAME OF ORGANIZATION: SCOTT & RITTER, INC.
BY: 
TITLE: CHIEF EXECUTIVE OFFICER
DATED: FEBRUARY 1, 2023

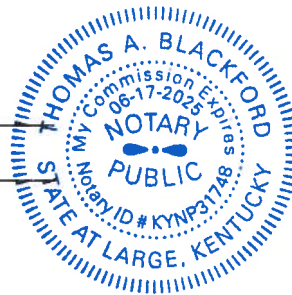
NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS 1ST DAY OF FEBRUARY, 2023

Thomas A. Blackford
NOTARY PUBLIC - STATE OF KENTUCKY

MY COMMISSION EXPIRES: 6/17/25



REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.
5. Evidence of authority for individuals listed in Section 7 to bind organization to an agreement.
6. Resumes of officers and key individuals (including Safety Officer) of firm named in Section 1.
7. Required safety program submittals listed in Section 13.
8. Additional items as pertinent.

SCHEDULE A

CURRENT EXPERIENCE

Project Name	Owner's Contact Person Name: Address: Telephone:	Design Engineer Name: Company: Telephone:	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
SEE	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SEE ATTACHED "CONTRACTS ON-HAND"

**SCOTT & RITTER, INC.
CONTRACTS ON-HAND**

JOB	LOCATION	CONTRACT AMT	% COMPLETE	BALANCE TO BILL	ANTICIPATED COMPLETION	BONDED	TYPE OF WORK	OWNER / ENGINEER
BOATLANDING RD CONVENIENCE STORE	BOWLING GREEN, KY	\$173,327.40	94%	\$10,022.00	DECEMBER 2022	NO	SITework / UTILITIES	SUNBELT CONSTRUCTION, INC. / ARNOLD CONSULTING ENGINEERING SERVICES, INC
KDOT CALL NO. 107 HOPKINS COUNTY UTILITY RELOCATION	MADISONVILLE, KY	\$2,394,563.45	105%	\$119,811.94	FEBRUARY 2023	NO	WATER / SEWER	SCOTT'S CONTRACTING & STONE, LLC / KENTUCKY DEPT. OF TRANSPORTATION
TYSON FOODS PLUMBING EXCAVATION	BOWLING GREEN, KY	\$640,725.00	95%	\$32,036.25	FEBRUARY 2023	NO	EXCAVATION	GREEN MECHANICAL / EXCEL ENGINEERING
CONTRACT 219 - JOHN ASHTON PUMP STATION IMPROVEMENTS	CLARKSVILLE, TN	\$155,821.00	65%	\$53,830.08	MARCH 2023	YES	PUMP STATION UPGRADES	EAST MONTGOMERY UTILITY DISTRICT / JAMES C. HAILEY & COMPANY
SIMPSON CO ELEMENTARY SCHOOL ADDITION	FRANKLIN, KY	\$240,125.00	93%	\$17,100.00	MARCH 2023	NO	EARTHWORK	ALLIANCE CORPORATION / ASSOCIATED ENGINEERS, INC.
WHITESVILLE WWTP IMPROVEMENTS	WHITESVILLE, KY	\$685,947.50	96%	\$32,638.00	MARCH 2023	YES	WWTP REHABILITATION	CITY OF WHITESVILLE, KY / WATER MANAGEMENT SERVICES, LLC
BGMU WATER METER TRANSFER & PIPE REPLACE	BOWLING GREEN, KY	\$551,300.00	53%	\$257,405.00	MARCH 2023	YES	WATER METER UPGRADES	BOWLING GREEN MUNICIPAL UTILITIES / BOWLING GREEN MUNICIPAL UTILITIES
TYSON FOODS SITE UTILITIES	BOWLING GREEN, KY	\$1,428,375.19	97%	\$38,097.25	MARCH 2023	NO	UTILITIES	SCOTT'S CONTRACTING & STONE, LLC / EXCEL ENGINEERING, INC.
SOUTH WARREN HS HITTING FACILITY, BP 015 - SITE EXC. & UTILITIES	BOWLING GREEN, KY	\$555,265.00	90%	\$54,601.50	MARCH 2023	YES	SITE EXCAVATION / DRAINAGE	WARREN CO BOARD OF EDUCATION ARNOLD CONSULTING ENGINEERING SERVICES, INC
NEPTUNE WAY STORM SEWER REMEDIATION	BOWLING GREEN, KY	\$176,058.72	0%	\$176,058.72	MARCH 2023	YES	STORM SEWER REPAIR	WARREN COUNTY PUBLIC WORKS / DDS ENGINEERING, PLLC
FLORIM USA SITE UTILITIES	CLARKSVILLE, TN	\$649,295.94	88%	\$76,454.94	APRIL 2023	NO	SITE UTILITIES	GRAY OHIO VALLEY / ARNOLD CONSULTING ENGINEERING SERVICES, INC
2020 GREENBRIER WATER PS REPLACE, CONTRACT 2 - INSTALLATION	SPRINGFIELD, TN	\$99,785.00	58%	\$42,337.50	APRIL 2023	YES	PUMP STATION INSTALL	CITY OF SPRINGFIELD / GRIGGS & MALONEY, INC
KENTUCKY DOWNS WASTEWATER SYSTEM IMPROVEMENTS	FRANKLIN, KY	\$1,093,800.00	0%	\$1,093,800.00	MAY 2023	YES	P.S. REHAB	CITY OF FRANKLIN, KY / BARGE DESIGN SOLUTIONS
OHIO COUNTY HOSPITAL SURGERY CENTER	HARTFORD, KY	\$762,370.21	102%	-\$13,371.34	MAY 2023	NO	SITework / UTILITIES	WEHR CONSTRUCTORS / CRUNK ENGINEERING, LLC
THE OAKS OF FRANKLIN APARTMENTS	FRANKLIN, KY	\$587,227.67	76%	\$138,887.67	MAY 2023	NO	SITework / UTILITIES	WHITE OAK GENERAL CONTRACTORS / VANMETER & SLAVEY, INC.
OXFORD SQUARE SITework & UTILITIES	BOWLING GREEN, KY	\$844,780.03	96%	\$42,220.75	MAY 2023	NO	SITework / UTILITIES	ENVISION CONTRACTORS, INC / BRYANT ENGINEERING
JENNIE STUART MEDICAL CENTER CANCER & ED CENTER	HOPKINSVILLE, KY	\$694,849.00	47%	\$366,029.50	MAY 2023	NO	SITework / UTILITIES	ROBINS & MORTON GROUP / INGRAM CIVIL ENGINEERING GROUP
US SMOKELESS TOBACCO WAREHOUSE - 2022 EXPANSION	HOPKINSVILLE, KY	\$963,660.00	11%	\$857,700.00	MAY 2023	NO	SITework / UTILITIES	HASKELL COMPANY / TTL, INC.
I-24 REST AREA PUMP STATION	HOPKINSVILLE, KY	\$89,121.96	0%	\$89,121.96	MAY 2023	NO	SANITARY SEWER PS REPAIR	COMMONWEALTH OF KENTUCKY / COMMONWEALTH OF KENTUCKY
WKU REGENTS HALL SANITARY SEWER RELOCATION	BOWLING GREEN, KY	\$93,857.00 T&M	51%	\$46,000.00	JUNE 2023	NO	SANITARY SEWER	WKU HOUSING & RESIDENCE LIFE / BELL ENGINEERING
HWEA SOMINCO FARMS SANITARY SEWER EXTENSION	HOPKINSVILLE, KY	\$555,441.00	0%	\$555,441.00	JUNE 2023	YES	PUMP STATION / FORCE MAIN	HOPKINSVILLE WATER ENVIRONMENT AUTHORITY / JR WAUFGORD & COMPANY
CITY OF BG SINKHOLE & DEMO CONTRACT	BOWLING GREEN, KY	\$7,978.38	100%	\$0.00	JULY 2023	NO	SINKHOLE REMEDIATION / BLDG DEMOLITION	CITY OF BOWLING GREEN / CITY OF BOWLING GREEN
HAMLIN CHAPEL ROAD WATERLINE REPLACEMENT	HARTFORD, KY	\$367,517.75	0%	\$367,517.75	AUGUST 2023	YES	WATERLINE REPLACE	OHIO COUNTY WATER DISTRICT / ECLIPSE ENGINEERS, PLLC
NOVELIS PROJECT MERLIN EARLY SITE UTILITIES	GUTHRIE, KY	\$4,132,970.00	0%	\$4,132,970.00	SEPTEMBER 2023	NO	SITE UTILITIES	SCOTT'S CONTRACTING & STONE, LLC / DENHAM-BLYTHE COMPANY, INC.
HWEA NORTH & SOUTH QUARRIES RAW WATER BYPASS	HOPKINSVILLE, KY	\$222,748.75	0%	\$222,748.75	SEPTEMBER 2023	NO	WATER	HOPKINSVILLE WATER ENVIRONMENT AUTHORITY / BELL ENGINEERING
GREENWOOD HIGH SCHOOL FIELD IMPROVEMENTS	BOWLING GREEN, KY	\$1,634,395.00	0%	\$1,634,395.00	SEPTEMBER 2023	YES	SITE GRADE, DRAIN, UTILITIES	WARREN COUNTY BOARD OF EDUCATION / ARNOLD CONSULTING ENGINEERING SERVICES, INC.
WKU SOFTBALL & SOCCER INDOOR TRAINING FACILITY	BOWLING GREEN, KY	\$269,841.25	75%	\$67,280.50	OCTOBER 2023	NO	SITework	SUNBELT CONSTRUCTION, INC. / K. NORMAN BERRY ASSOCIATES
BGHS PHASE IV, PHASE 2 - B P. 010 - SITE EXC., GRADE, & DRAIN	BOWLING GREEN, KY	\$3,369,693.36	65%	\$1,189,700.00	OCTOBER 2023	YES	GRADE / DRAIN	ALLIANCE CORPORATION / CMTA, INC.
BGHS PHASE IV - PLUMBING	BOWLING GREEN, KY	\$46,690.00	0%	\$46,690.00	OCTOBER 2023	NO	PLUMBING UTILITIES	ERNIE DAVIS & SONS MECHANICAL, INC. / CMTA, INC.
PROJECT ENVISION (BG BATTERY PLANT) STORM SEWER	BOWLING GREEN, KY	\$2,775,000.00	0%	\$2,775,000.00	OCTOBER 2023	NO	STORM SEWER	SCOTT'S CONTRACTING & STONE, LLC / ARNOLD CONSULTING ENGINEERING SERVICES, INC
TOTAL FITNESS ADDITION	BOWLING GREEN, KY	\$256,760.00	17%	\$212,906.50	OCTOBER 2023	NO	EARTHWORK	SUNBELT CONSTRUCTION, INC. / SPURR ARCHITECTURE
COMMERCE STREET SPS	WATERTOWN, TN	\$228,690.00	0%	\$228,690.00	OCTOBER 2023	NO	SANITARY SEWER PS	CITY OF WATERTOWN / NA
WHITE HOUSE, TN ASSISTED LIVING FACILITY	WHITE HOUSE, TN	\$709,333.92	80%	\$144,525.78	NOVEMBER 2023	NO	SITework / UTILITIES	DMK DEVELOPMENT GROUP, LLC / ARNOLD CONSULTING ENGINEERING SERVICES, INC
HILLVIEW MILLS SUBDIVISION	BOWLING GREEN, KY	\$3,955,215.00	8%	\$3,656,589.96	NOVEMBER 2023	NO	SITework / UTILITIES	JOHN GROVES / VAN METER & SLAVEY, LLC
FRANKLIN POLICE DEPARTMENT SITE UTILITIES	FRANKLIN, KY	\$190,235.00	0%	\$190,235.00	DECEMBER 2023	NO	SEWER / FIRE PROTECTION	SCOTT, MURPHY & DANIEL, LLC. / BRANDSTETTER CARROLL, INC.
CONTRACT 422 - WATER SERVICE LINE CASING BORES	LEWISBURG, TN	\$30,000.00 1 YR CONTRACT	0%	\$30,000.00	DECEMBER 2023	YES	WATER SERVICE BORES	MARSHALL COUNTY BOARD OF PUBLIC UTILITIES / JAMES C. HAILEY & COMPANY
DERBY MEADOWS SUBDIVISION	COOPERTOWN, TN	\$3,513,748.45 T&M	100%	\$0.00	DECEMBER 2023	NO	GRADE / DRAIN / UTILITIES / PAVE	HARVESTER, LLC / GOODWYN, MILLS & CAWOOD, INC.
CHERRY FARMS APARTMENTS	BOWLING GREEN, KY	\$3,990,990.00	2%	\$3,918,771.20	APRIL 2024	NO	SITework	HIMALAYA PROPERTIES, LLC. / VANMETER & SLAVEY, INC.

TOTAL BALANCE TO BILL \$22,664,817.39

JOB	LOCATION	CONTRACT AMT	% COMPLETE	BALANCE TO BILL	ANTICIPATED COMPLETION	BONDED	TYPE OF WORK	OWNER / ENGINEER
LEACHATE PUMP STATION UPGRADE	GLASGOW, KY		#DIV/0!	\$0.00	PENDING CONTRACT	YES	LANDFILL PS & FM	CITY OF GLASGOW / KENVRONS, INC
EDDINGS ROAD SANITARY SEWER MAIN EXTENSION	FRANKLIN, KY		#DIV/0!	\$0.00	PENDING CONTRACT	YES	SANITARY SEWER EXTENSION	FRANKLIN-SIMPSON INDUSTRIAL AUTHORITY, INC. / ARNOLD CONSULTING ENGINEERING SERVICES, INC.

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person	Design Engineer	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
SEE ATTACHED "PREVIOUS 5 YEARS PROJECTS"	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCHEDULE B

PREVIOUS EXPERIENCE (Include ALL Projects Completed within last 5 years)

Project Name	Owner's Contact Person Name: Address: Telephone:	Design Engineer Name: Company: Telephone:	Contract Date	Type of Work	Status	Cost of Work
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
SEE ATTACHED "PREVIOUS 5 YEARS PROJECTS"	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				
	Name: Address: Telephone:	Name: Company: Telephone:				

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
TDOT ROBERTSON & SUMNER CO GAS LINE RELOCATE PORTLAND, TN	ROGERS GROUP, INC 2124 NASHVILLE PIKE GALLATIN, TN 37066 615-451-4777	TENNESSEE DOT 505 DEADERICK STREET, STE 700 NASHVILLE, TN 37243	12/14/2018	\$893,062.98	ROGERS GROUP, INC 2124 NASHVILLE PIKE GALLATIN, TN 37066 SHANON GATHEART 615-394-1676
LAKE FOREST ESTATES PH 67 LA VERGNE, TN	LAVERGNE LF HOLDINGS, LLC 605 PALENCIA DRIVE ST. AUGUSTINE, FL 32095 904-810-0520	WAMBLE & ASSOCIATES, PLLC 40 MIDDLETON STREET NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	2/1/2018	\$496,201.20	LAVERGNE LF HOLDINGS, LLC 605 PALENCIA DRIVE ST. AUGUSTINE, FL 32095 904-545-6123 WALTER OSHEA
AMANDA JO REGIONAL DETENTION FACILITY ELIZABETHTOWN, KY	CITY OF ELIZABETHTOWN 200 WEST DIXIE AVE ELIZABETHTOWN, KY 42702	MICHAEL S. EVANS 6625 COLONIAL AVE EVANSVILLE, IN 47725 MIKE EVANS 502-593-9430	10/4/2018	\$1,927,361.00	CITY OF ELIZABETHTOWN 200 WEST DIXIE AVE ELIZABETHTOWN, KY 42702 ROBERT BUSH 270-765-7873
KCTCS BOWLING GREEN, KY	CODELL CONSTRUCTION CO 4475 ROCKWELL ROAD WINCHEST, KY 40392	ACES 1138 SOUTH PARK DR STE 201 BOWLING GREEN, KY 42101 AARON ARNOLD 270-780-9873	6/15/2018	\$326,000.00	CODELL CONSTRUCTION CO 4475 ROCKWELL ROAD WINCHEST, KY 40392 CHRIS RUSSELL 859-595-3157
LAKE FOREST ESTATES PH 68 & 69 LA VERGNE, TN	LAVERGNE LF HOLDINGS LLC 605 PALENCIA CLUB DRIVE ST AUGUSTINE, FL 32095	WAMBLE & ASSOCIATES 40 MIDDLETON ST NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	5/15/2018	\$694,936.05	LAVERGNE LF HOLDINGS LLC 605 PALENCIA CLUB DRIVE ST AUGUSTINE, FL 32095 WALTER OSHEA 904-545-6123
COTTAGES @ LAKE FOREST PH 3 & 4 LA VERGNE, TN	LAVERGNE LF HOLDINGS LLC 605 PALENCIA CLUB DRIVE ST AUGUSTINE, FL 32095	WAMBLE & ASSOCIATES 40 MIDDLETON ST NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	12/5/2019	\$949,373.50	LAVERGNE LF HOLDINGS LLC 605 PALENCIA CLUB DRIVE ST AUGUSTINE, FL 32095 WALTER OSHEA 904-545-6123
GREYSTONE SUBDIVISION SECTION 16 BOWLING GREEN, KY	GREG GARY PO BOX 9787 BOWLING GREEN KY 42102	DAVIDSON DESIGN GROUP 823 N. THORTON AVE ORLANDO, FL 32803 RUSSELL DAVIDSON 407-467-9537	4/18/2018	\$967,886.00	GREG GARY PO BOX 9787 BOWLING GREEN KY 42102 270-791-0249 GREGGARY58@GMAIL.COM
WILKINS BUSINESS CENTER BOWLING GREEN, KY	MB REAL ESTATE HOLDINGS 1115 B FAIRVIEW AVE BOWLING GREEN KY 42103	JAMES R ADAMS & ASSOCIATES 700 CHESTNUT STREET BOWLING GREEN, KY 42101 JIM ADAMS 270-782-3318	6/15/2018	\$448,908.00	MB REAL ESTATE HOLDINGS 1115 B FAIRVIEW AVE BOWLING GREEN KY 42103 MARTY WILKINS 270-991-4724
ARCADIA ASSISTED LIVING FACILITY BOWLING GREEN, KY	DMK DEVELOPMENT GROUP, LLC 9300 SHELBYVILLE ROAD, STE 800 LOUISVILLE, KY 40222	ARNOLD CONSULTING ENG SERVICES PO BOX 1338 BOWLING GREEN, KY 42102 BRANDY ZACKERY 270-780-9445	6/8/2018	\$646,395.00	DMK DEVELOPMENT GROUP, LLC 9300 SHELBYVILLE ROAD, STE 800 LOUISVILLE, KY 40222 ERIC ZOPH 502-423-0662
BGMU ALTERNATE DISINFECTION BOWLING GREEN, KY	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101	SMITH SECKMAN REID, INC 2995 SIDCO DRIVE NASHVILLE, TN 37204 LINDSAY BRYANT 615-383-1113	5/29/2019	\$5,681,820.00	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101 BRETT JONES 270-782-1200
CROSSWINDS GOLF COURSE LAKES REHABILITATION BOWLING GREEN, KY	CITY OF BOWLING GREEN PO BOX 430 BOWLING GREEN, KY 42102	CITY OF BOWLING GREEN PO BOX 430 BOWLING GREEN, KY 42102 MATT POWELL 270-393-3000	5/24/2018	\$777,185.70	CITY OF BOWLING GREEN PO BOX 430 BOWLING GREEN, KY 42102 MATT POWELL 270-393-3000
COTTAGES @ LAKE FOREST - PHASE 6 LA VERGNE, TN	LAVERGNE LF HOLDINGS, LLC 605 PALENCIA CLUB DR ST. AUGUSTINE, FL 32905	WAMBLE & ASSOCIATES, PLLC 40 MIDDLETON STREET NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	12/10/2019	\$1,131,061.65	LAVERGNE LF HOLDINGS, LLC 605 PALENCIA CLUB DR ST. AUGUSTINE, FL 32905 904-810-0520 WALTER OSHEA
WESTERN STATE HOSPITAL ELECTRICAL UPGRADE HOPKINSVILLE, KY	THE COMMONWEALTH OF KENTUCKY 403 WAPPING STREET FRANKFORT, KY 40601	BCCLT JIMMY MEADOWS 812-423-4407	4/1/2018	\$3,770,990.00	THE COMMONWEALTH OF KENTUCKY 403 WAPPING STREET FRANKFORT, KY 40601 BRIAN COTTONGIM 502-782-0317
KINGSTON POINTE SUBDIVISION BOWLING GREEN, KY	KINGSTONE POINTE, LLC 2435 INDUSTRIAL DRIVE BOWLING GREEN, KY 42104	VANMETER & SLAVEY 1015 SHIVE LANE BOWLING GREEN, KY 42104 LUCAS SLAVEY 270-799-1001	2/20/2018	\$474,525.00	KINGSTONE POINTE, LLC 2435 INDUSTRIAL DRIVE BOWLING GREEN, KY 42104 DAVID BRADY 270-935-7072

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
MEDICAL CENTER PARKING GARAGE BOWLING GREEN, KY	WEHR CONSTRUCTORS, INC 2517 PLANTSIDE DRIVE LOUISVILLE, KY 40299	ACES 1136 SOUTH PARK DRIVE #201 BOWLING GREEN, KY 42103 JOHN SEWELL 270-780-9445	5/29/2019	\$1,290,403.00	WEHR CONSTRUCTORS, INC 2517 PLANTSIDE DRIVE LOUISVILLE, KY 40299 JONATHAN BOOME 502-491-9250
WKU HIGH VOLTAGE PH 10 BOWLING GREEN, KY	WKU 1906 COLLEGE HEIGHTS BLVD BOWLING GREEN, KY 42101	STAGGS & FISHER ENGINEERS 3264 LOCHNESS DRIVE LEXINGTON, KY 40517 BILL WILSON 859-271-3246	7/25/2018	\$121,500.00	WKU 1906 COLLEGE HEIGHTS BLVD BOWLING GREEN, KY 42101 BEN JOHNSON 270-745-2075
QUIGGINS SPS REHAB RADCLIFF, KY	HARDIN CO WATER DISTRICT #1 1400 ROGERSVILLE ROAD RADCLIFF, KY 40160	CANNON & CANNON INC 8550 KINGSTON PIKE KNOXVILLE, TN 37919 SETH FISCHER 865-670-8585	9/13/2018	\$463,405.00	HARDIN CO WATER DISTRICT #1 1400 ROGERSVILLE ROAD RADCLIFF, KY 40160 DANIEL CLIFFORD 270-352-4280
GREENHILLS DEV. PARTNERS - ENTRANCE ROADWAY BOWLING GREEN, KY	GREENHILLS DEVELOPMENT PARTNERS DAVID SEARS 270-796-7189 KOA@KYOUTDOORADS.COM	ACES 1136 SOUTH PARK DRIVE #201 BOWLING GREEN, KY 42103 JEFF ARNOLD 270-780-9445	10/1/2019	\$1,080,833.14	GREENHILLS DEVELOPMENT PARTNERS DAVID SEARS 270-796-7189 KOA@KYOUTDOORADS.COM
HOPKINSVILLE COMMUNITY COLLEGE - SITEWORK HOPKINSVILLE, KY	ALLIANCE CORPORATION PO BOX 1480 GLASSGOW, KY 42142-1480	BACON FARMER WORKMAN 500 SOUTH 17TH STREET PADUCAH, KY 42003 270-445-1995	8/30/2019	\$309,700.00	ALLIANCE CORPORATION PO BOX 1480 GLASSGOW, KY 42142-1480 TIM GEEGAN 270-651-8848
HOPKINSVILLE COMMUNITY COLLEGE - PLUMBING HOPKINSVILLE, KY	ALLIANCE CORPORATION PO BOX 1480 GLASSGOW, KY 42142-1480	BACON FARMER WORKMAN 500 SOUTH 17TH STREET PADUCAH, KY 42003 270-445-1995	3/1/2018	\$98,165.00	ALLIANCE CORPORATION PO BOX 1480 GLASSGOW, KY 42142-1480 TIM GEEGAN 270-651-8848
HOPKINSVILLE COMMUNITY COLLEGE - FIRE PROTECTION HOPKINSVILLE, KY	ALLIANCE CORPORATION PO BOX 1480 GLASSGOW, KY 42142-1480	BACON FARMER WORKMAN 500 SOUTH 17TH STREET PADUCAH, KY 42003 270-445-1995	3/1/2018	\$78,920.00	ALLIANCE CORPORATION PO BOX 1480 GLASSGOW, KY 42142-1480 TIM GEEGAN 270-651-8848
VILLAGES OF INDIAN LAKE WATER TANK HENDERSONVILLE, TN	LANDMARK STRUCTURES 1665 HARMON ROAD FORT WORTH, TX 76177	WATER MANAGEMENT SERVICES NASHVILLE, TN ROGER BOYERS 615-366-6088	2/1/2019	\$226,200.00	LANDMARK STRUCTURES 1665 HARMON ROAD FORT WORTH, TX 76177 DAVE CHAPMAN 817-471-8258
JENNINGS CREEK ELEMENTARY SCHOOL - STORM SEWER PIPING BOWLING GREEN, KY	STEWART RICHEY 2137 GLEN LILY ROAD BOWLING GREEN, KY 42101	ACES PO BOX 1338 BOWLING GREEN, KY 42101 AARON ARNOLD 270-780-9445	8/22/2018	\$220,720.00	STEWART RICHEY 2137 GLEN LILY ROAD BOWLING GREEN, KY 42101 MATT RICH 270-842-5184
JENNINGS CREEK ELEMENTARY SCHOOL - EXTERIOR PLUMBING BOWLING GREEN, KY	STEWART RICHEY 2137 GLEN LILY ROAD BOWLING GREEN, KY 42101	ACES PO BOX 1338 BOWLING GREEN, KY 42101 AARON ARNOLD 270-780-9445	8/21/2018	\$167,095.00	STEWART RICHEY 2137 GLEN LILY ROAD BOWLING GREEN, KY 42101 MATT RICH 270-842-5184
9TH STREET RAILROAD DRAINAGE IMP (FEMA) HOPKINSVILLE, KY	HOPKINSVILLE COMM & DEVELOPMENT SERV PO BOX 1125 HOPKINSVILLE, KY 42240	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 JOHN RITTENHOUSE 270-564-0468	5/15/2018	\$313,580.00	HOPKINSVILLE COMM & DEVELOPMENT SERV PO BOX 1125 HOPKINSVILLE, KY 42240 STEVE BOURNE 270-887-4285
LEACHMAN BUICK GMC SITEWORK BOWLING GREEN, KY	SUNBELT CONSTRUCTION 1034 SEARCY WAY BOWLING GREEN, KY 42103	ACES 1136 SOUTH PARK DRIVE #201 BOWLING GREEN, KY 42103 JOHN SEWELL 270-780-9445	6/6/2018	\$330,765.00	SUNBELT CONSTRUCTION 1034 SEARCY WAY BOWLING GREEN, KY 42103 CODY HARMON 270-781-2859
SOUTHERN KY MEDICAL OFFICE BUILDING BOWLING GREEN, KY	GREENHILLS DEVELOPMENT PARTNERS DAVID SEARS 270-796-7189 KOA@KYOUTDOORADS.COM	ACES 1136 SOUTH PARK DRIVE #201 BOWLING GREEN, KY 42103 JEFF ARNOLD 270-780-9445	5/7/2019	\$620,500.00	GREENHILLS DEVELOPMENT PARTNERS DAVID SEARS 270-796-7189 KOA@KYOUTDOORADS.COM
LWC CEMENT SILO REPLACEMENT LOUISVILLE, KY	LOUISVILLE WATER CO 550 SOUTH THIRD STREET LOUISVILLE, KY	LOUISVILLE WATER CO 550 SOUTH THIRD STREET LOUISVILLE, KY	2/1/2018	\$139,999.00	LOUISVILLE WATER CO 550 SOUTH THIRD STREET LOUISVILLE, KY PAT HOWARD 502-569-3600

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS / PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
7TH STREET & GREENVILLE RD DRAINAGE IMP HOPKINSVILLE, KY	HOPKINSVILLE COMM & DEVELOPMENT SERV PO BOX 1125 HOPKINSVILLE, KY 42240	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 DAVID HOWELL 270-886-5466	11/16/2018	\$191,000.00	HOPKINSVILLE COMM & DEVELOPMENT SERV PO BOX 1125 HOPKINSVILLE, KY 42240 STEVE BOURNE 270-887-4285
9TH STREET RAILROAD DRAINAGE IMP (UTILITY) HOPKINSVILLE, KY	HOPKINSVILLE COMM & DEVELOPMENT SERV PO BOX 1125 HOPKINSVILLE, KY 42240	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 JOHN RITTENHOUSE 270-564-0468	5/15/2018	\$79,190.00	HOPKINSVILLE COMM & DEVELOPMENT SERV PO BOX 1125 HOPKINSVILLE, KY 42240 STEVE BOURNE 270-887-4285
5TH AVENUE DRAINAGE IMPROVEMENTS BOWLING GREEN, KY	THE CITY OF BOWLING GREEN PO BOX 430 BOWLING GREEN, KY 42102	BACON FARMER WORKMAN 1215 DIVGULD DRIVE MURRAY, KY 42071 SHANNON HAYES	1/3/2018	\$170,541.00	THE CITY OF BOWLING GREEN PO BOX 430 BOWLING GREEN, KY 42102 MELANIE SHY 270-393-4169
FORT WEBB MANOR PH II BOWLING GREEN, KY	THE HOUSING AUTHORITY OF BG 247 DOUBLE SPRINGS RD BOWLING GREEN KY 42101	ACES PO BOX 1338 BOWLING GREEN, KY 42101 BRANDY ZACKERY 270-780-9445	8/31/2019	\$596,000.00	THE HOUSING AUTHORITY OF BG 247 DOUBLE SPRINGS RD BOWLING GREEN KY 42101 ABRAHAM WILLIAMS 270-843-6071
HWEA WATER TANK REHABILITATION HOPKINSVILLE, KY	CURRENS CONSTRUCTION SERVICES, LLC 1025 DANVILLE ROAD HARRODSBURG, KY 40330	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240	6/27/2018	\$142,600.00	CURRENS CONSTRUCTION SERVICES, LLC 1025 DANVILLE ROAD HARRODSBURG, KY 40330 DAVID CULL 859-734-5340
Hwy 70/109 PUMP STATION LEBANON, TN	CITY OF LEBANON, TN 200 NORTH CASTLE HEIGHTS AVE LEBANON, TN 37087	WATER MGMT SERVICES 2 INTERNATIONAL PLAZA, STE 401 NASHVILLE, TN 37217 JOE HINKLE 615-366-6088	8/1/2018	\$400,985.00	CITY OF LEBANON, TN 200 NORTH CASTLE HEIGHTS AVE LEBANON, TN 37087 MATTHEW BROWN 615-444-3647
PADDOCK WAY DRAINAGE IMPROVEMENTS BOWLING GREEN, KY	CITY OF BOWLING GREEN 1001 COLLEGE STREET BOWLING GREEN, KY 42101	BACON FARMER WORKMAN 1215 Diviguld Dr. MURRAY, KY 42071	4/12/2018	\$93,235.00	CITY OF BOWLING GREEN 1001 COLLEGE STREET BOWLING GREEN, KY 42101 DAVID HEHNER 270-393-3055
NOLIN RIVER WATERSHED INFRASTRUCTURE, CONTRACT 3-2017 ELIZABETHTOWN, KY	NORRIS BROTHERS EXCAVATING 1007 RODGERS ROAD CROSSVILLE, TN 38572	STRAND ASSOCIATES, INC 325 WEST MAIN STREET, SUITE 710 LOUISVILLE, KY 40202 ABBE MICHALSKI 502-583-7020 EXT 2419	4/20/2020	\$2,364,949.17	NORRIS BROTHERS EXCAVATING 1007 RODGERS ROAD CROSSVILLE, TN 38572 JACOB MORRIS 931-277-5665
FRANKLIN BERRY PROPERTY UTILITY EXTENSION BOWLING GREEN, KY	THOMAS R HUNT ESCROW ACCT 1053 LOVERS LANE STE A BOWLING GREEN, KY 42103	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	6/6/2018	\$256,440.00	THOMAS R HUNT ESCROW ACCT 1053 LOVERS LANE STE A BOWLING GREEN, KY 42103 TOMMY HUNT 270-782-2299
KDOT HOPKINS CO HWY 41-A UTILITY RELOCATION MADISONVILLE, KY	ROAD BUILDERS LLC 200 S. CHERRY STREET GREENVILLE, KY 42345 270-338-2300	HDR 4645 VILLAGE SQUARE DRIVE STE F PADUCAH, KY 42001 MIKE HANSEN 270-538-1547	4/29/2020	\$1,846,347.00	BYRON JOHNSON 270-543-8698 BYRON @ROACHBUILDERSLLC.COM
LAKE FOREST ESTATES SUBDIVISION PHASE 70 LA VERGNE, TN	LAVERGNE LF HOLDINGS LLC 605 PALENCIA CLUB DRIVE ST AUGUSTINE, FL 32095	WAMBLE & ASSOCIATES 40 MIDDLETON ST NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	9/16/2019	\$952,001.97	LAVERGNE LF HOLDINGS, LLC 605 PALENCIA CLUB DR ST. AUGUSTINE, FL 32095 904-810-0520 WALTER OSHEA
LAKE FOREST ESTATES SUBDIVISION PHASE 5 LA VERGNE, TN	LAVERGNE LF HOLDINGS LLC 605 PALENCIA CLUB DRIVE ST AUGUSTINE, FL 32095	WAMBLE & ASSOCIATES 40 MIDDLETON ST NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	5/7/2019	\$700,000.00	LAVERGNE LF HOLDINGS, LLC 605 PALENCIA CLUB DR ST. AUGUSTINE, FL 32095 904-810-0520 WALTER OSHEA
LOGAN ALUMINUM CMA SITE UTILITIES RUSSELLVILLE, KY	H&M CONSTRUCTION CO, INC 50 SECURITY DRIVE JACKSON, TN 38305	H&M ARCHITECTS & ENGINEERS PO BOX 200 JACKSON, TN 38302 731-664-6330	5/3/2019	\$621,160.00	H&M CONSTRUCTION CO, INC 50 SECURITY DRIVE JACKSON, TN 38305 CHAD HOWELL 731-660-3097
BROAD STREET UTILITY UPGRADE & STREETSCAPE PROJECT CENTRAL CITY, KY	CITY OF CENTRAL CITY, KY 214 NORTH 1ST STREET CENTRAL CITY, KY 42330	MCGHEE ENGINEERING, INC 202 SOUTH EWING STREET GUTHRIE, KY 42234 CHRIS WILCUTT 270-783-9885	5/13/2019	\$1,321,280.30	CITY OF CENTRAL CITY, KY 214 NORTH 1ST STREET CENTRAL CITY, KY 42330 DAVID RHOADES 270-754-5097

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
SCOTTISH MANOR ESTATES GRAVITY SEWER BOWLING GREEN, KY	JC BREWER CONSTRUCTION 4780 BRISTOW ROAD BOWLING GREEN, KY 42103	LANDMARK ENGINEERING 183 ST. CHARLES STREET BOWLING GREEN, KY 42101	3/23/2018	\$102,000.00	JC BREWER CONSTRUCTION 4780 BRISTOW ROAD BOWLING GREEN, KY 42103 JC BREWER 270-791-8147
OWLS HEAD ALLOY FABRIC BLD FOUNDATIONS BOWLING GREEN, KY	OWL'S HEAD ALLOYS 187 MITCH MCCONNELL WAY BOWLING GREEN, KY 42101	S.E. ENGINEERING 1733 CAMPUS PLAZA CT #10 BOWLING GREEN, KY 42101 DON STONEBURG 270-796-3052	6/13/2018	\$316,774.00	OWL'S HEAD ALLOYS 187 MITCH MCCONNELL WAY BOWLING GREEN, KY 42101 TOM MEEKS 270-842-1300
KNOX AUTO PARTS SITEWORK LA VERGNE, TN	MCBRIDE COMPANY PO BOX 50904 KNOXVILLE, TN 37950-0904	KLOBER ENGINEERING SERVICES	9/20/2018	\$81,740.00	MCBRIDE COMPANY PO BOX 50904 KNOXVILLE, TN 37950-0904 MIKE ALLEY 865-584-6230
WCWD 2018 LS FLOW METERS BOWLING GREEN, KY	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42102	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42102 RYAN LEISEY	11/13/2018	\$171,000.00	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42102 RYAN LEISEY 270-842-0052
WKU SUMMER 2018 STEAM LINE REPAIRS BOWLING GREEN, KY	LYONS COMPANY 308 SAMSON STREET GLASGOW, KY 42141	N/A	9/13/2018	\$123,500.00	LYONS COMPANY 308 SAMSON STREET GLASGOW, KY 42141 RALPH RILEY 270-651-2733
BGHS EARLY SITE GRADING, DRAINAGE, & UTILITIES BOWLING GREEN, KY	BG INDEPENDENT SCHOOLS C/O ALLIANCE CORP 116 EAST COLLEGE STREET GLASGOW, KY 42141	CMTA INC 2429 MEMBERS WAY LEXINGTON KY 40504 MATT WADE 859-253-0892	8/3/2018	\$839,950.00	TIM GEEGAN 270-651-8848 270-404-0673 TOBEEGAN@ALLIANCE.CORPORATION.COM
CARTER LUMBER SITE UTILITIES BOWLING GREEN, KY	SCOTT, MURPHY & DANIEL 2335 BARREN RIVER ROAD BOWLING GREEN, KY 42101	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	3/18/2019	\$326,950.00	MIKE ALLEN 270-781-9944 270-202-0236 MALLEN@SCOTTSMURPHYDANIEL.COM
METHODIST HOME PUMP STATION & FORCE MAIN FRANKLIN, KY	CITY OF FRANKLIN KY 117 WEST CEDAR STREET FRANKLIN, KY 42135	STRAND ASSOCIATES 325 WEST MAIN ST, STE 710 LOUISVILLE, KY 40202 ADAM CLAYTON 502-563-7020	11/27/2018	\$248,110.00	CHRIS KLOTTER/MICHAEL RANDBURGER 270-586-7944 / 270-586-4497 CHRIS.KLOTTER@FRANKLINKY.ORG MICHAEL.RANDBURGER@FRANKLINKY.ORG
HWEA OAK GROVE SEWER IMPROVEMENTS 2018 HOPKINSVILLE, KY	HOPKINSVILLE WATER ENVIRONMENT AUTHORITY 401 EAST 9TH STREET HOPKINSVILLE, KY 42240	HOPKINSVILLE WATER ENVIRONMENT AUTHORITY 401 EAST 9TH STREET HOPKINSVILLE, KY 42240	4/1/2019	\$15,000.00	JENNY MOSS 270-887-4147 270-881-2645 JMOSS@HWEA-KY.COM
GARY WESTPARK, INC. - BRIANNA COURT BOWLING GREEN, KY	GARY WESTPARK, INC 5217 MARYLAND WAY SUITE 300 BRENTWOOD, TN 37027 615-425-5574	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 BRANDY ZACKERY 270-780-9445	5/7/2019	\$366,250.00	PHIL WARREN JR 615-309-0781 X 101 PWARRENJR@WARRENCOMMERCIAL.COM
THE MUSE STUDENT HOUSING BOWLING GREEN, KY	SCOTT, MURPHY, & DANIEL PO BOX 2520 BOWLING GREEN, KY 42102	CANNON & CANNON INC 6550 KINGSTON PIKE KNOXVILLE, TN 37919 TIM TUCKER 865-670-8555	6/5/2020	\$1,412,610.00	MIKE ALLEN 270-781-9944 MALLEN@SCOTTSMURPHYDANIEL.COM
WKU HIGH VOLTAGE PH 11 BOWLING GREEN, KY	D&M ELECTRIC 136 VANDERBILT DRIVE BOWLING GREEN KY 42101	STAGGS & FISHER CONSULTING 3265 LOCHNESS DRIVE LEXINGTON KY 40517 BILL WILSON 270-271-3246	1/31/2019	\$63,500.00	DAN MCIVOR 270-782-0555 270-991-8656 DAN@DMELECTRIC.COM
SMALLHOUSE RD PH II WATERLINE RELOCATION BOWLING GREEN, KY	SCOTT'S CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 KENT GILLEY 270-780-9445	5/17/2019	\$685,497.00	ALAN BRYANT 270-781-3998 270-783-1221 ALANB@SCOTTSSCONTRACTING.COM
LOGAN TODD CONTRACT 4 - ADAMS WATER TANK ADAMS, TN	PHOENIX FABRICATORS & ERECTORS, LLC 182 S. COUNTY ROAD 900 EAST AVON, IN 46123	MCGRHEE ENGINEERING, INC 202 EWING ST GUTHRIE, KY 42234 270-426-9142 MIKE MCGHEE	8/18/2020	\$532,325.00	MATT HARRIS 270-318-1215 270-577-3009 MATT.HARRIS@PHOENIXTANK.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
BGHS PH I - PLUMBING UTILITIES BOWLING GREEN, KY	ERNIE DAVIS & SONS MECHANICAL, INC 1518 EAST ELEVENTH STREET OWENSBORO, KY 42303	CMTA, INC 2429 MEMBERS WAY LEXINGTON, KY 40504 MATT WADE 859-253-0892	5/1/2019	\$369,385.00	RANDY TOMLINSON 270-926-1350 270-316-9632 © RANDYTI@MINDSPRING.COM
AMERICAN BANK & TRUST SITE UTILITIES BOWLING GREEN, KY	AMERICAN BANK & TRUST C/O BUILDERS BY DESIGN 1733 CAMPUS PLAZA CT STE 2 BOWLING GREEN, KY 42101	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	4/11/2019	\$60,275.00	DAVID ELLIOTT 270-793-0371 270-392-4423 DELLIOTT@BUILDERSBYDESIGNCORP.COM
BILLTOWN RD IGA WATERLINE RELOCATION ELIZABETHTOWN, KY	HOUCHEMS INDUSTRIES, INC 200 SYCAMORE ST, SUITE 179 ELIZABETHTOWN, KY 42701	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	10/19/2018	\$39,580.00	DANNA MONROE 270-506-3924 270-763-3168 DMONROE@HOUCHEMS.COM
WKU IMPROVEMENTS @ HORSE BARN #3 BOWLING GREEN, KY	WESTERN KENTUCKY UNIVERSITY 1906 COLLEGE HEIGHTS BLVD #21091 BOWLING GREEN, KY 42101	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	1/17/2019	\$158,600.00	ALFONSO CASANA 270-745-3010 270-792-6173 ALFONSO.CASANA@WKU.EDU
BG DOWNTOWN SQUARE IMPROVEMENTS BOWLING GREEN, KY	SCOTT & MURPHY PO BOX 2520 BOWLING GREEN, KY 42102	CITY OF BOWLING GREEN PO BOX 430 BOWLING GREEN, KY 42102 270-393-3000	11/15/2019	\$665,100.00	JOHNNY BURCH 270-781-9944 270-746-4304 JBURCH@SCOTTANDMURPHY.COM
WARREN CENTRAL HIGH SCHOOL, MASS DEMO BOWLING GREEN, KY	WARREN CO BOARD OF EDUCATION C/O ALLIANCE CORP 116 EAST COLLEGE STREET GLASGOW, KY 42141	SHERMAN CARTER BARNHART 2405 HARRODSBURG ROAD LEXINGTON, KY 40504 JENNIFER CASH	3/7/2019	\$320,500.00	BILLY PARSON 270-651-8848
KEYSTONE COMMONS SUBDIVISION BOWLING GREEN, KY	KEYSTONE DEVELOPMENT GROUP, LLC 13101 LOUISVILLE ROAD OAKLAND, KY 42159	LANDMARK ENGINEERING 183 ST. CHARLES STREET BOWLING GREEN, KY 42101 THAD LUCAS 270-842-0812	3/1/2021	\$2,000,000.00	JOHN BALLANCE 270-392-1044
WKU SLF FIRST YEAR VILLAGE SITEWORK BOWLING GREEN, KY	WKU STUDENT LIFE FOUNDATION 1906 COLLEGE HEIGHTS BLVD. #1109 BOWLING GREEN, KY 42101-1093	ACES 1136 S. PARK DRIVE #201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	1/15/21	\$1,447,125.00	DON STONEBURG 270-796-3052
ROEBUCK SQUARE DRAINAGE BOWLING GREEN, KY	SUNBELT CONSTRUCTION 1034 SEARCY WAY BOWLING GREEN, KY 42103	VANMETER & SLAVEY 1015 SHIVE LANE BOWLING GREEN, KY 42103 LUCAS SLAVEY 270-799-1001	5/6/2019	\$77,740.00	CHRIS DAY SUNBELT CONSTRUCTION 270-781-2859 270-202-7797 C.DAY@SUNBELTCONSTRUCTION.COM
WCWD NASHVILLE ROAD P.S. UPGRADES BOWLING GREEN, KY	WCWD 523 US HWY 31W BYPASS BOWLING GREEN, KY 42101	WCWD 523 US HWY 31W BYPASS BOWLING GREEN, KY 42101 RYAN LEISEY 270-842-0952	5/13/2019	\$219,292.00	RYAN LEISEY WCWD 270-842-0952 270-793-2435 RYANL@WARRENWATER.COM
WCHS BID GROUP 2 - EARTHWORK & DEMO BOWLING GREEN, KY	A&K CONSTRUCTION 100 CALLOWAY PADUCAH, KY 42001	ACES PO BOX 1338 BOWLING GREEN, KY 42102 AARON ARNOLD 270-780-9445	6/12/2020	\$607,470.00	JUSTIN HOPKINS A&K CONSTRUCTION 270-415-6585 270-441-7752 JHOPKINS@AKCONSTRUCTION.COM
WCHS BID GROUP 2 - STORM SEWER BOWLING GREEN, KY	STEWART RICHEY 2137 GLEN LILY ROAD BOWLING GREEN, KY 42101	ACES PO BOX 1338 BOWLING GREEN, KY 42102 AARON ARNOLD 270-780-9445	6/4/2020	\$246,365.00	MIKE BLANKENSHIP STEWART RICHEY 270-842-5184 270-783-1627 MBLANKENSHIP@STEWARTRICHEY.COM
CITY OF BG MCLELLAN WATERLINE RELOCATION BOWLING GREEN, KY	SCOTT'S CONTRACTING & STONE, LLC 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	CITY OF BOWLING GREEN P.O. BOX 430 BOWLING GREEN, KY 42102 MELISSA CANSLER 270-393-3212	4/5/2019	\$23,482.52	ALAN BRYANT SCOTT'S 270-781-3998 270-783-1221 ALANB@SCOTT'SCONTRACTING.COM
LWC LIME UNLOADING SYSTEM RENOVATIONS LOUISVILLE, KY	LOUISVILLE WATER COMPANY 550 SOUTH THIRD STREET LOUISVILLE, KY 40202	HAZEN AND SAWYER 9780 ORMSBY STATION RD LOUISVILLE, KY 40223 TREY DEROUCHE 502-290-4447	7/22/2019	\$279,950.00	YOLANDA ALLEN LOUISVILLE WATER COMPANY 502-569-3600 YALLEN@LWCKY.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
HWEA PEMBROKE MAIN STREET SPS HOPKINSVILLE, KY	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	SEE OWNER	8/26/2019	\$98,225.00	DAVID BLANE HWEA 270-887-4155 DBLANE@HWEA.KY.COM
GREENWOOD SQUARE ADDITION BOWLING GREEN, KY	SCOTT, MURPHY, & DANIEL LLC PO BOX 2520 BOWLING GREEN, KY 42102	SCOTT & MURPHY INC 2335 BARREN RIVER ROAD BOWLING GREEN, KY 42101 JASON BLAKEMAN 270-781-9944	9/23/2019	\$99,830.00	DENNIS REEDER SCOTT, MURPHY, DANIEL LLC 270-781-9944 270-846-6442 DREEDER@SCOTTMURPHYDANIEL.COM
HOWELL STREET DRAINAGE HOPKINSVILLE, KY	HOPKINSVILLE SURFACE & STORMWATER UTILITY 710 SOUTH MAIN STREET HOPKINSVILLE, KY 42240	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 DOUGLAS BOYD 270-886-9486	8/30/2019	\$93,275.00	STEVE R. BOURNE 270-887-4285
CHURCHILL DOWNS SITE UTILITIES OAK GROVE, KY	SCOTT'S CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	VISION ENGINEERING 128 E REYNOLDS RD STE 150 LEXINGTON KY 40517 JIHAD HALLANY 859-333-8015	2/3/2020	\$1,637,240.00	ALAN BRYANT SCOTT'S 270-781-3998 270-783-1221 ALANB@SCOTTSCONTRACTING.COM
GARVIN LANE UTILITY EXTENSION FRANKLIN, KY	FRANKLIN-SIMPSON INDUSTRIAL AUTHORITY 109 SOUTH MAIN STREET FRANKLIN, KY 42134	ACES PO BOX 1338 BOWLING GREEN, KY 42101 AARON ARNOLD AARNOLD@ACES.COM	7/31/2019	\$248,615.00	DENNIS GRIFFIN 270-586-4477
WKU SUMMER 2019 STEAM REPAIRS BOWLING GREEN, KY	LYONS COMPANY, INC. 308 SAMSON STREET GLASGOW, KY 42142	NONE	9/17/2019	\$269,855.00	GEORGE WHITNEY 270-651-2733
WKU CAMPBELL LANE BUS STOP PAVEMENT REHAB BOWLING GREEN, KY	SCOTT & MURPHY, INC. 2235 BARREN RIVER ROAD BOWLING GREEN, KY 42101	NONE	6/12/2019	\$48,950.00	JOHNNY BURCH 270-781-9944
BARDSTOWN POTTERSHP PUMP STATION UPGRADE BARDSTOWN, KY	CITY OF BARDSTOWN 220 NORTH FIFTH STREET BARDSTOWN KY 40004	HDR ENGINEERING 2517 SIR BARTON WAY LEXINGTON, KY 40509 RICHARD SMITH 859-629-4844	7/1/2020	\$1,556,847.00	JESSICA FILIATREAU CITY OF BARDSTOWN 502-348-5947 502-507-8645 J.FILIATREAU@BARDSTOWNCABLE.NET
BGMU ORCHARD STREET SANITARY SEWER BOWLING GREEN, KY	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101	6/1/2020	\$293,167.00	SCOTT NEIGHBORS BGMU 270-782-1200 270-202-1924 SNEIGHBORS@BGMU.COM
MCCAUSLAND AVE/RODEO LANE DRAINAGE IMP BOWLING GREEN, KY	THE CITY OF BOWLING GREEN 1017 COLLEGE STREET BOWLING GREEN, KY 42101	THE CITY OF BOWLING GREEN 1017 COLLEGE STREET BOWLING GREEN, KY 42101	9/12/2019	\$137,412.50	TYLER PHELPS CITY OF BOWLING GREEN 270-393-3070 270-779-7013 TYLER.PHELPS@BGKY.ORG
LINCOLN TRAIL ELEMENTARY B.P. 225 - SEWAGE F.I.M. ELIZABETHTOWN, KY	ALLIANCE CORPORATION 116 EAST COLLEGE STREET GLASGOW, KY 42141	ENGINEERING DESIGN GROUP 315 MULBERRY STREET ELIZABETHTOWN, KY 42701	9/18/2020	\$246,746.80	BILLY PARSON 270-651-8848
BURKE MOTOR PARK WASTEWATER IMP. FORT KNOX, KY	HARDIN COUNTY WATER DISTRICT NO. 1 1400 ROGERSVILLE ROAD RADCLIFF, KY 40160	HERITAGE ENGINEERING, LLC 642 SOUTH 4TH STREET, SUITE 100 LOUISVILLE, KY 40202	2/13/2020	\$1,086,000.00	JIM BOYKEN 270-352-4280 X 223 270-946-5607 JBOYKEN@HCWD.COM
THE COTTAGES AT LAKE FOREST PHASE 5 LA VERGNE, TN	LAVERGNE LF HOLDINGS, LLC 11512 LAKE MEADE AVE SUITE 603 JACKSONVILLE, FL 32256	WAMBLE & ASSOCIATES 40 MIDDLETON STREET NASHVILLE, TN 37210 DANNY WAMBLE 615-251-9555	11/24/2020	\$1,059,970.00	TOM WELCH WALT O'SHEA 904-299-7020 904-607-3630 THOMAS.WELCH@HINES.COM
WCWD HWY 529 TURN LANE WATER LINE RELOCATION BOWLING GREEN, KY	WCWD 523 US 31-W BYPASS BOWLING GREEN, KY 42101	WCWD 523 US 31-W BYPASS BOWLING GREEN, KY 42101	10/15/2019	\$75,360.47	RYAN LEISEY 270-842-0052 EXT 512 RYANL@WARRENWATER.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
BROWN ROAD SEWER REPLACEMENT MADISONVILLE, KY	CITY OF MADISONVILLE, KY 67 NORTH MAIN STREET MADISONVILLE, KY 42431	HDR ENGINEERS 4545 VILLAGE SQ DR STE F PADUCAH, KY 42001 MIKE HANSEN MIKE.HANSEN@HDRINC.COM	11/23/2020	\$482,110.00	ERIC HICKMAN CITY OF MADISONVILLE 270-824-2120 EHICK@MADISONVILLEGOV.COM
PATRIOT PARKWAY 16" WATER RECONNECT RADCLIFF, KY	HCWD #1 1400 ROGERSVILLE RD RADCLIFF, KY 40160	HCWD #1 1400 ROGERSVILLE RD RADCLIFF, KY 40160	4/15/2020	\$434,940.00	JIM BOYKEN 270-352-4280 X 223 270-945-5607 JBOYKEN@HCWD.COM
HOUCHENS INDUSTRIES BLDG DEMO BOWLING GREEN, KY	HOUCHENS INDUSTRIES 700 CHURCH STREET BOWLING GREEN, KY 42101	ACES PO BOX 1338 BOWLING GREEN, KY 42101 AARON ARNOLD AARNOLD@A-CES.COM	12/20/2019	\$47,690.00	BRIAN GILBRETH HOUCHENS INDUSTRIES 270-535-9559 BGILBRETH@HOUCHENS.COM
SHIVE LANE WATER LINE RELOCATION BOWLING GREEN, KY	SCOTTYS CONTRACTING & STONE 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101 270-781-3998	AMERICAN ENGINEERS C/O CITY OF BOWLING GREEN 1011 COLLEGE STREET BOWLING GREEN KY 421011 DANIEL COLTER	5/20/2020	\$233,449.00	ALAN BRYANT 270-783-1221 SCOTTYS CONTRACTIN ALANB@SCOTTYS CONTRACTING.COM
CUMBERLAND TRACE ELEMENTARY - PLUMBING BOWLING GREEN, KY	EARNE DAVIS & SONS MECHANICAL, INC. 1518 EAST 11TH STREET OWENSBORO, KY 42303	ACES PO BOX 1338 BOWLING GREEN, KY 42101 AARON ARNOLD AARNOLD@A-CES.COM	11/23/2020	\$130,716.00	KENNY HAMILTON 270-926-1350
CUMBERLAND TRACE ELEMENTARY - FIRE PROTECTION BOWLING GREEN, KY	OHIO VALLEY SPRINKLERS 1105 LEITCHFIELD RD OWENSBORO, KY 42303	ACES PO BOX 1338 BOWLING GREEN, KY 42101 AARON ARNOLD AARNOLD@A-CES.COM	1/24/2020	\$106,736.00	JEFF MINOR 270-683-9995 270-993-6615 JEFF@OVSPEINKLER.COM
BCWS HWY 231 & NATCHER PARKWAY WATERLINE RELOCATE BOWLING GREEN, KY	BUTLER CO WATER SYSTEMS 523 US 31-W BYPASS BOWLING GREEN, KY 42101	SAME AS OWNER	5/1/2020	\$173,107.50	RYAN LEISEY 270-842-0052 EXT 512 RYANL@WARRENWATER.COM
WAR MEMORIAL APARTMENTS SCOTTSVILLE, KY	THE FEZ GROUP, LLC 1390 OLIVIA LANE LEXINGTON, KY 40511 859-977-6922	CDP ENGINEERS 3250 BLAZER PARKWAY LEXINGTON, KY	9/22/2020	\$605,750.00	BOBBY SHOOK 859-963-8577 THE FEZ GROUP BESHOOK@WINTERWOODONLINE.COM
GREAT LAKES CHEESE DROP LOT EXP MANCHESTER, TN	THE DENNIS GROUP 1537 MAIN STREET SPRINGFIELD, MA 01103	ST JOHN ENGINEERING 923 JACKSON STREET MANCHESTER, TN 37355 931-728-2638 SSTJOHN@STJOHNENGINEERING.COM	7/28/2020	\$1,840,466.00	BOB LOWDER 413-727-2273 X 1173 LOWDER@DENNISGROUP.COM
CITY OF BG SINKHOLE REPAIR & DEMOLITION BOWLING GREEN, KY	CITY OF BOWLING GREEN 1001 COLLEGE STREET BOWLING GREEN, KY 42101	N/A	8/31/2022	T&M	270-393-3000
KDOT CALL NO. 301 MUHLENBERG COUNTY (HWY 62 SEWER RELOCATION) CENTRAL CITY, KY	SCOTTYS CONTRACTING & STONE, LLC 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	MCHEE ENGINEERING, INC. 202 SOUTH EWING STREET GUTHRIE, KY 42234	10/5/2021	\$988,609.00	ALAN BRYANT 270-783-1221 SCOTTYS CONTRACTIN ALANB@SCOTTYS CONTRACTING.COM
JENNIE STUART BLUE CREEK MEDICAL OFFICE BLDG HOPKINSVILLE, KY	THE ROBINS & MORTON GROUP 5500 MARYLAND WAY, SUITE 100 BRENTWOOD, TN 37027 615-377-3666	CRUNK ENGINEERING 7112 CROSSROADS BLDG, SUITE 201 BRENTWOOD, TN 37027 ADAM HENRIKSEN 615-873-1795	10/30/2020	\$1,876,480.00	JOHN GALASSINI 615-423-2122 JGALASSINI@ROBINSMORTON.COM
GREENWOOD HIGH SCHOOL AUXILIARY GYM BOWLING GREEN, KY	ALLIANCE CORORATION 116 EAST COLLEGE STREET GLASGOW, KY 42142	ACES PO BOX 1338 BOWLING GREEN, KY 42101 DANIEL WHITLEY DWHITLEY@A-CES.COM	5/26/2021	\$198,025.00	DARLTON JACKSON 270-651-9848 270-670-3291 DJACKSON@ALLIANCECORPORATION.COM
CENTER FOR COURAGEOUS KIDS WATER LINE RELOCATE SCOTTSVILLE, KY	CENTER FOR COURAGEOUS KIDS 1501 BURNLEY ROAD SCOTTSVILLE, KY 42164	BLUEGRASS ENGINEERING PO BOX 1657 GEORGETOWN, KY 40324 MATT CURTIS 502-370-6551	10/1/2020	\$207,316.00	CLINT COBB 270-618-2900 EXT 238 270-217-7656 CCOBB@COURAGEOUSKIDS.ORG

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
BENDIX SPIKER SANITARY SEWER RELOCATION BOWLING GREEN, KY	SCOTT MURPHY DANIEL 2335 BARREN RIVER ROAD BOWLING GREEN, KY 42101	SITE 159 4TH AVE N. SUITE 100 NASHVILLE, TN 37219 JOHN SEWELL 270-779-3161	3/9/2020	\$104,425.00	ZACH MASSEY 270-781-4944 ZMASSEY@SCOTTMURPHYDANIEL.COM
CONCORD FARMS SEC 1-B ELECTRIC DUCT BANK HOPKINSVILLE, KY	CONCORD VILLAS, LLC 603 SOUTH MAIN STREET HOPKINSVILLE, KY 42240	PENNYRILLE ELECTRIC ANTHONY ERVIN 270-484-9825	5/5/2020	\$83,000.00	ADAM SMITH 270-839-4269 ADAM.SMITH42440@GMAIL.COM
LWC TANGLEWOOD PRV STATION LOUISVILLE, KY	LOUISVILLE WATER COMPANY 550 SOUTH THIRD STREET LOUISVILLE, KY 40202	SEE OWENER	8/13/2020	\$138,800.00	YOLANDA ALLEN 502-569-3600 EXT 2413 502-387-0117 YALLEN@LWCKY.COM
CITY OF BG SOUTHWEST PARKWAY UTILITY RELOCATION BOWLING GREEN, KY	SCOTTYS CONTRACTING & STONE 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	AMERICAN ENGINEERS 65 ABERDEEN DRIVE GLASGOW, KY 42141 PETER OVERMOHLE 270-651-7220	10/27/2020	\$205,932.00	ALAN BRYANT 270-783-1221 270-781-3998 ALANB@SCOTTYSCONTRACTING.COM
FORT KNOX HOSPITAL SANITARY SEWER RELOCATION FORT KNOX, KY	HARDIN COUNTY WATER DISTRICT NO. 1 1400 ROGERSVILLE ROAD RADCLIFF, KY 40160	HERITAGE ENGINEERING, LLC 642 SOUTH 4TH STREET, SUITE 100 LOUISVILLE, KY 40202	9/9/2020	\$1,011,330.00	JIM BOYKEN 270-352-4280 X 223 270-945-5607 JBOYKEN@HCWV.COM
POTTER CHILDREN'S HOME QUAD PLEX #15 BOWLING GREEN, KY			9/4/2020	\$319,275.45	
HOPE HOUSE GLEN LILY ROAD BOWLING GREEN, KY			8/7/2020	\$468,400.00	
WKU SLF PARK STREET PARKING LOT BOWLING GREEN, KY	WKU STUDENT LIFE FOUNDATION 1906 COLLEGE HEIGHTS BLVD. #1109 BOWLING GREEN, KY 42101-1093	ACES P.O. BOX 1338 BOWLING GREEN, KY 42102 AARON ARNOLD AARNOLD@ACES.COM	6/1/2020	\$637,979.66	DON STONEBURG 270-796-3052
WKU SLF FIRST YEAR VILLAGE SITEWORK BLDG 2 BOWLING GREEN, KY	WKU STUDENT LIFE FOUNDATION 1906 COLLEGE HEIGHTS BLVD. #1109 BOWLING GREEN, KY 42101-1093	ACES P.O. BOX 1338 BOWLING GREEN, KY 42102 AARON ARNOLD AARNOLD@ACES.COM	8/1/2021	\$1,020,839.82	DON STONEBURG 270-796-3052
CITY OF BG SOUTHWEST CONNECTOR UTILITY RELOCATE BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD 270-781-3998	AMERICAN ENGINEERS 65 ABERDEEN DRIVE GLASGOW, KY 42141 PETE OVERMOHLE 270-651-7220	11/16/2020	\$205,932.00	ALAN BRYANT 270-783-1221 ALANB@SCOTTYSCONTRACTING.COM
SOUTHERN RECYCLING RAILROAD UTILITY RELOCATE BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD 270-781-3998	N/A	8/31/2020	\$262,500.00	CHRIS HIGGINS 270-781-3998 270-793-2512 CHRISH@SCOTTYSCONTRACTING.COM
MIKE HYMER SUBDIVISION AT SOUTH WARREN HIGH SCHOOL BOWLING GREEN, KY	B.C.T.A. PROPERTIES, LLC 908 BROADWAY AVE STE 2566 BOWLING GREEN, KY 42101	VANMETER & SLAVEY LUCAS SLAVEY 270-799-9938 270-799-1001 LSSLAVEY@ATT.NET	9/11/2020	\$187,500.00	MIKE HYMER 270-796-0108 MHYMER3088@ICLOUD.COM
HENPECK LANE WATERLINE FRANKLIN, TN	HB & TS UTILITY DISTRICT 505 DOWNS BOULEVARD FRANKLIN, TN 37064 615-591-9094	JAMES C HALEY 1619 GALLERIA BOULEVARD BRENTWOOD, TN 37027 615-883-4937	7/9/2020	\$247,830.00	THOMAS PUCKETT 615-794-7796 TPUCKETT_HBTS@BELLSOUTH.NET
BCWS RAW WATER INTAKE BOWLING GREEN, KY	BCWS 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	6/12/2020	\$36,200.00	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS / PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
WCWD MEMPHIS JUNCTION ROAD PUMP STATION BOWLING GREEN, KY	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	11/13/2020	\$219,710.00	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM
WCWD LOUISVILLE RD/GREENWOOD BOOSTER STATION BOWLING GREEN, KY	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	8/15/2021	\$1,478,825.00	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM
KENTUCKY DOWNS SITE UTILITIES FRANKLIN, KY	SCOTT'S CONTRACTING 2300 BARRON RIVER ROAD BOWLING GREEN, KY 42101 270-781-3998	AMERICAN ENGINEERS 65 ABERDEEN DRIVE GLASGOW, KY 42141	11/3/2020	\$139,040.00	CHRIS HIGGINS 270-781-3998 270-793-2512 CHRISH@SCOTTSCONTRACTING.COM
AQUARIUS WAY STORM SEWER REMEDIATION BOWLING GREEN, KY	WARREN CO FISCAL COURT 429 EAST 10TH AVE SUITE 201 BOWLING GREEN, KY 42101	DDS ENGINEERING 148 CHESTER COURT BOWLING GREEN, KY 42103 MATT ROGERS 270-783-1075	8/24/2020	\$83,704.55	NIKKI KOLLER 270-843-5360 EXT 1508 NIKKIKOLLER@KY.GOV
BGMU FY 2020 SEWER REHABILITATION BOWLING GREEN, KY	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101	JAMES ADAMS & ASSOCIATES PO BOX 407 BOWLING GREEN, KY 42102 JIM ADAMS 270-782-3318	12/19/2020	\$174,266.00	SCOTT NEIGHBORS 270-282-1824 SCOTT.NEIGHBORS@BGMUL.COM
BGHS PH II SITE PACKAGE BOWLING GREEN, KY	ALLIANCE CORPORATION PO BOX 1480 GLASGOW, KY 42142-1480	CMTA INC 2429 MEMBERS WAY LEXINGTON, KY 40504 MATT WADE 859-457-5262	9/30/2021	\$277,500.00	RYAN MARTIN 270-846-0609 270-670-1538 RMARTIN@ALLIANCECORPORATION.COM
RICH POND ELEMENTARY UTILITIES BOWLING GREEN, KY	ALLIANCE CORPORATION PO BOX 1480 GLASGOW, KY 42142-1480	ACES SETH PEAY 270-780-9445 SPEAT.ACES@GMAIL.COM	9/11/2020	\$80,670.65	KENNY SUTTON 270-670-9442 KSUTTON@ALLIANCECORPORATION.COM
HARTFORD KY SANITARY SEWER HARTFORD, KY	CITY OF HARTFORD 116 E. WASHINGTON STREET HARTFORD, KY 42347	N/A	8/13/2020	\$50,000.00	
LWC 680 PLAN: PRESTON HIGHWAY WATER LEBANON JUNCTION, KY	LOUISVILLE WATER COMPANY 550 S. 3RD STREET LOUISVILLE, KY 40202	LOUISVILLE WATER COMPANY 550 S. 3RD STREET LOUISVILLE, KY 40202	10/26/2021	\$3,462,095.00	JAMIE LONG 502-569-3600 EXT 2312 502-533-5062 JLONG@LWCKY.COM
RICH POND ELEMENTARY SITE WORK BOWLING GREEN, KY	ALLIANCE CORPORATION 116 E COLLEGE STREET GLASGOW, KY 42141	ACES ENGINEERING 1136 SOUTH PARK DRIVE BOWLING GREEN, KY 42103 SETH PEAY 270-780-9445	12/11/2020	\$354,609.40	KENNY SUTTON 270-670-9442 KSUTTON@ALLIANCECORPORATION.COM
RUSSELLVILLE WATERLINE UPGRADES RUSSELLVILLE, KY	CITY OF RUSSELLVILLE 188 SOUTH MAIN STREET RUSSELLVILLE, KY 42276	MCGHEE ENGINEERING 202 SOUTH EWING STREET GUTHRIE KY 42234 CHRIS WILCUTT 270-726-5042	10/23/2020	\$534,353.50	JASON HENDERSON 270-726-5042 JHENDERSON@RUSSELLVILLEKY.ORG
WKU SUMMER 2020 STEAM REPAIRS BOWLING GREEN, KY	LYONS COMPANY 308 SAMSON ST GLASGOW, KY 42141	N/A	8/14/2020	\$108,955.00	GEORGE WHITNEY 270-404-0769 GWHITNEY@LYONSCOMPANY.COM
WARREN COUNTY LIBRARY RENOVATION BOWLING GREEN, KY	ALLIANCE CORPORATION PO BOX 1480 GLASGOW, KY 42142-1480	ACES ENGINEERING 1136 SOUTH PARK DRIVE BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	8/6/2020	\$37,395.00	DICK DOTY 270-651-8848 270-646-0073 DDOTY@ALLIANCECORPORATION.COM
CROWN CORK & SEAL SITE UTILITIES BOWLING GREEN, KY	SCOTT, MURPHY, & DANIEL 2335 BARRON RIVER ROAD BOWLING GREEN, KY 42101	ACES ENGINEERING 1136 SOUTH PARK DRIVE BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	8/23/2021	\$387,390.00	LEE MCBRAYER 270-781-8944 270-202-3909 LMCBRAYER@SCOTTMURPHYDANIEL.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME /LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
LWC PUMPKIN PRV LOUISVILLE, KY	LOUISVILLE WATER COMPANY 550 SOUTH THIRD STREET LOUISVILLE, KY 40202	LOUISVILLE WATER COMPANY 550 SOUTH THIRD STREET LOUISVILLE, KY 40202	5/6/2021	\$149,500.00	BART POTTS 502-569-3600 EXT 2412 502-299-0400 (CELL) BPOTTS@LWCKY.COM
WCWD TWIN LIFT STATION BOWLING GREEN, KY	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	12/21/2020	\$63,070.00	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM
BGHS PH II SITE EXCAVATION BOWLING GREEN, KY	ALLIANCE CORPORATION PO BOX 1480 GLASGOW, KY 42142-1480	CMTA INC 2429 MEMBERS WAY LEXINGTON, KY 40504 MATT WADE 859-457-5282	3/9/2022	\$242,500.00	RYAN MARTIN 270-846-0609 270-670-1538 RMARTIN@ALLIANCECORPORATION.COM
BGHS PH II PLUMBING UTILITIES BOWLING GREEN, KY	ERNIE DAVIS & SONS MECHANICAL, INC 1518 EAST ELEVENTH STREET OWENSBORO, KY 42303	CMTA INC 2429 MEMBERS WAY LEXINGTON, KY 40504 MATT WADE 859-253-0882	8/1/2021	\$214,825.00	RANDY TOMLINSON 270-926-1350 270-316-9632 RANDYT@MINDSPRING.COM
BGMU SPZ WATER MAIN EXTENSION BOWLING GREEN, KY	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101	GRW ENGINEERING 404 BNA DR #201 NASHVILLE, TN 37217	10/9/2020	\$166,000.00	RODNEY SULLIVAN 270-782-4388 270-799-1711 RODNEY.SULLIVAN@BGMU.COM
BUTLER CO PUBLIC LIBRARY SITE DEMO & GRADING GLASGOW, KY	BUTLER CO PUBLIC LIBRARY	BRYANT ENGINEERING INC 1535 FREDERICA STREET OWENSBORO, KY 42301 JASON BAKER 270-570-0472	12/22/2021	\$113,900.00	KENNA MARTIN 116 W. OHIO STREET MORGANTOWN KY 42261 270-526-4722 KENNA.MARTIN@BCPLKY.ORG
CONTRACT 120 - HIGH SERVICE PUMP REPLACEMENT CLARKSVILLE, TN	CUNNINGHAM-EAST MONTGOMERY JOINT VENTURE 5195 HIGHWAY 41-A SOUTH CLARKSVILLE, TN 37043	JAMES C. HALEY & COMPANY 1619 GALLERIA BOULEVARD BRENTWOOD, TN 37027 MATT TUCKER 615-883-4933	7/1/2022	\$466,000.00	BOBBY GIBBS
WARREN CO TENNIS COURT & MULTIPURPOSE BLDG BOWLING GREEN, KY	SCOTT, MURPHY & DANIEL, LLC 2335 BARREN RIVER RD. BOWLING GREEN, KY 42101	ACES ENGINEERING 1136 SOUTH PARK DRIVE BOWLING GREEN, KY 42103 DANIEL WHITLEY 270-535-7551	3/30/2021	\$87,500.00	ZACH MASSEY 270-202-1593 ZMASSEY@SCOTTMURPHYDANIEL.COM
LPIC SITE UTILITIES CLARKSVILLE, TN	SCOTT, MURPHY & DANIEL, LLC 2335 BARREN RIVER RD. BOWLING GREEN, KY 42101	DBS & ASSOCIATES 330 N/ SECOND STREET CLARKSVILLE, TN 37040 931-847-8959	3/31/2021	\$1,237,351.00	ZACH MASSEY 270-202-1593 ZMASSEY@SCOTTMURPHYDANIEL.COM
PROSPERITY LANE UTILITY EXTENSION BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD 270-781-3998	ACES ENGINEERING 1136 SOUTH PARK DRIVE BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	3/16/2021	\$376,225.00	CHRIS HIGGINS 270-793-2512 CHRISH@SCOTTYSCONTRACTING.COM
RICH POND ELEMENTARY BID GROUP II - DEMO & SITE EXCAVATION BOWLING GREEN, KY			11/15/2022	\$925,150.00	
FOX RIDGE APARTMENTS BOWLING GREEN, KY	FOX RIDGE APARTMENTS, LLC 1711 DESTINY LANE SUITE 122 BOWLING GREEN, KY 42104	VAN METER & SLAVEY llc 1015 SHIVE LANE BOWLING GREEN, KY 42103	11/15/2022	\$627,655.00	JOHN GROVES 270-202-3403
HWY 139 N WATER LINE UPGRADES & MCUPTON BOOSTER PUMP STATION CADIZ, KY	BARKLEY LAKE WATER DISTRICT 1420 CANTON ROAD CADIZ, KY 42211	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 BOB PICKERILL 270-886-5466	10/6/2021	\$634,920.60	MIKE JONES 270-522-8425 270-350-1725 270-350-1125
CONSTRUCTED OVERFLOW BASINS REHABILITATION, PHASE 2C SPRINGFIELD, TN	CITY OF SPRINGFIELD 405 NORTH MAIN STREET SPRINGFIELD, TN 37172	GRESHAM SMITH 222 SECOND AVE SOUTH NASHVILLE, TN 37201 MIKE BURGETT 615-770-8531	9/16/2022	\$3,836,281.25	TERRY BEERS 615-382-1600 TBEERS@SPRINGFIELD-TN.ORG

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS / PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
SMYRNA MEDICAL SITEWORK & GRADING SMYRNA, TN	SAIN CONSTRUCTION COMPANY 713 VINCENT STREET MANCHESTER, TN 37355-1937	DEMPSE, DILLING & ASSOCIATES 502 HAZELWOOD DRIVE SMYRNA, TN 37167 615-220-5800	2/15/2022	\$289,010.00	JOE BASKERVILLS 931-728-7644 931-224-8366 JBASKERVILLE@SAINCONSTRUCTION.COM
WASTEWATER PUMP STATION MODIFICATIONS AND REHABILITATION HENDERSONVILLE, TN	HENDERSONVILLE UTILITY DISTRICT 125 INDIAN LAKE ROAD HENDERSONVILLE, TN 37077	WATER MANAGEMENT SERVICES 2 INTERNATIONAL PLAZE, STE 401 NASHVILLE, TN 37217 ROGER BOYERS 615-386-6088	11/9/2021	\$704,000.00	DAVID BRIGANCE 615-824-3717 615-347-3290 DBRIGANCE@HENDUTIL.NET
RICH POND ELEMENTARY PH II PLUMBING UTILITIES BOWLING GREEN, KY	KNIGHTS MECHANICAL 4250 LEITCHFIELD RD OCEILI, KY 42724	ACES AARON ARNOLD 270-996-8561 AARNOLD@A-CES.COM	4/1/2022	\$110,160.00	NICK SOARDS 270-678-4731 270-646-0198 NICKS@KNIGHTSMECHANICAL.COM
STANLEY BLACK & DECKER HOPKINSVILLE, KY	T.W. FRIERSON CONTRACTOR, INC 2971 KRAFT DRIVE NASHVILLE, TN 37204	DESIGN CONSTRUCTORS, INC 2971 KRAFT DRIVE NASHVILLE, TN 37204	7/5/2021	\$297,420.00	CHUCK HALL 615-301-1967 615-927-6095 CHALL@TWFERIERSON.COM
NATCHER & US 231 SANITARY SEWER RELOCATION BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101 270-781-3998	CRW ENGINEERING 801 CORPORATE DR STE 400 LEXINGTON, KY 40503 MICHAEL JACOBS 859-223-3999	3/26/2021	\$237,607.65	CHRIS HIGGINS 270-781-3998 270-793-2512 CHRISH@SCOTTYSCONTRACTING.COM
TRU BOX (FORMERLY TOYS R US) BOWLING GREEN, KY	O'BRIEN CONSTRUCTION, INC 30825 SOLON RD. UNIT J SOLON, OHIO 44139		2/5/2021	\$195,000.00	DUSTIN PHELPS 440-519-8893 DPHELPS@OCICNET.COM
BGHS PH 3 PLUMBING BOWLING GREEN, KY	ERNE DAVIS 1518 EAST 11TH ST OWENSBORO, KY 42303	CMTA, INC. 2429 MEMBERS WAY LEXINGTON, KY 40504 859-253-0092	7/21/2021	\$245,000.00	RANDY TOMLINSON 270-925-1350 270-316-9632 RANDY@ERNIEDAVISMECHANICAL.COM
WCWD ELROD ROAD LIFT STATION BOWLING GREEN, KY	WARREN CO WATER DISTRICT 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	WARREN CO WATER DISTRICT 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	5/27/2022	\$331,035.50	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM
OLDE STONE NEW ROADWAY UTILITIES BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	6/1/2021	\$331,035.50	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM
KDOT CALL 101 - SCOTTSVILLE RD WATERLINE RELOCATE BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	GRW ENGINEERING 9710 BUNSON PARKWAY LOUISVILLE, KY 40289 MICHAEL JACOBS 502-489-8484	9/17/2021	\$913,501.00	CHRIS HIGGINS 270-781-3398 270-793-2512 CHRISH@SCOTTYSCONTRACTING.COM
KDOT CEMETERY RD. STORM BORES BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	N/A	4/28/2021	\$144,860.94	ALAN BRYANT 270-793-7205 270-783-1221 ALANB@SCOTTYSCONTRACTING.COM
CAVE MILL APARTMENTS PH II BOWLING GREEN, KY	BACAR CONSTRUCTORS 1898 NOLENSVILLE ROAD NASHVILLE, TN 37210	LANDMARK ENGINEERING 183 ST. CHARLES STREET BOWLING GREEN, KY 42101 THAD LUCAS 270-842-0812	5/1/2022	\$681,365.00	SCOTT SLIPPY 615-259-1516 615-866-7702 SSLIPPY@BACAR.COM
COLLEGE STREET COMBINED SEWER REPLACE CLARKSVILLE, TN	CLARKSVILLE GAS & WATER 2215 MADISON ST CLARKSVILLE, TN 37043	DBS & ASSOCIATES ENGINEERING 320 N. 2ND STREET CLARKSVILLE, TN 37041 ALEX HENRY 931-647-8959	6/22/2021	\$722,380.00	PATRICK CHESNEY 991-980-3654 PAT.CHESENEY@CITYOFCLARKSVILLE.COM
BALL PACKAGING SITE UTILITIES BOWLING GREEN, KY	SCOTTYS CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	N/A	10/22/2021	\$663,635.00	CHRIS HIGGINS 270-793-2512 CHRISH@SCOTTYSCONTRACTING.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
PRODUCTION AVE UTILITIES BOWLING GREEN, KY	SCOTT'S CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	TBD	10/22/2021	\$960,060.00	CHRIS HIGGINS 270-793-2512 CHRISH@SCOTTSCONTRACTING.COM
MCAUGHT ORAL SURGERY SITEMWORK CLARKSVILLE, TN	STACKER BUILDING GROUP 1648 WESTGATE CR SUITE 101 BRENTWOOD, TN 37027	MOORE DESIGN SERVICES 2386 ROSSVIEW ROAD CLARKSVILLE, TN JIMMY BAGWELL 931-648-6411	1/12/2022	\$255,245.00	HAMILTON BROOKS 615-915-0619 615-840-0171 HAMILTON@STACKERBUILDING.COM
NASHVILLE RD SUBDIVISION BOWLING GREEN, KY	SEVENPLUS, LLC	VANMETER & SLAVEY 1015 SHIVE LANE BOWLING GREEN, KY 42103 LUCAS SLAVEY 270-799-1001	6/30/2022	\$760,040.00	JOHN GROVES 270-202-3403 STONWOODCONSTRUCTION.INC@GMAIL.COM
WKU SUMMER 2021 STEAM REPAIRS BOWLING GREEN, KY	LYONS COMPANY, INC 308 SAMSON STREET GLASGOW, KY 42141	N/A	8/16/2021	\$101,965.00	GEORGE WHITNEY 270-404-0769 GWHITNEY@LYONSCOMPANY.COM
WKU HIGH VOLTAGE PHASE 12 BOWLING GREEN, KY	STEWART RICHEY CONSTRUCTION 2137 GLEN LILY ROAD BOWLING GREEN, KY 42101	N/A	7/6/2021	\$97,355.00	RANDY DILLARD 270-393-0285 270-784-0695 RDILLARD@STEWARTRICHEY.COM
HOUCHENS BUILDING DEMO - 31-W BY PASS BOWLING GREEN, KY	HOUCHENS INDUSTRIES 700 CHURCH AVE BOWLING GREEN, KY 42101	N/A	6/1/2021	\$40,860.00	RODNEY NORRIS 270-780-2803 270-670-5556 RNORRIS@HOUCHENS.COM
MONTGOMERY CO MPEC (MULTIPURPOSE EVENT CENTER) CLARKSVILLE, TN	SKANSKA 5000 MERIDIAN BLVD STE 100 FRANKLIN, TN 37067 615-656-6932	DBS & ASSOCIATES ENGINEERING 330 2ND STREET CLARKSVILLE, TN 37040 931-647-9959	9/15/2022	\$740,499.00	BRIAN SCHREMS 299-720-7453 BRIAN.SCHREMS@SKANSKA.COM
ALLEN SPRINGS INDUSTRIAL PARK WATERLINE EXT SCOTTSDALE, KY	ALLEN CO SCOTTSDALE INDUSTRIAL AUTHORITY 110 S. COURT STREET SCOTTSDALE, KY 42164	AMERICAN ENGINEERS 65 ABERDEEN DRIVE GLASGOW, KY 42141 RICHARD TUTT 270-651-7220	9/15/2021	\$172,067.00	JOHNNY HOBBY 270-781-4880 270-237-4062
BOSNIAN ISLAMIC CENTER SITE UTILITIES BOWLING GREEN, KY	BOSNIAN ISLAMIC CENTER OF BG KY 396 BLUE LEVEL ROAD BOWLING GREEN, KY 42101	LANDMARK ENGINEERING 183 ST. CHARLES STREET BOWLING GREEN, KY 42101	10/22/2021	\$171,815.00	NELE HUSIC
N. SUNRISE & KENTON ST DRAINAGE IMP BOWLING GREEN, KY	CITY OF BOWLING GREEN 1017 COLLEGE STREET BOWLING GREEN, KY 42101	CITY OF BOWLING GREEN 1017 COLLEGE STREET BOWLING GREEN, KY 42101	11/4/2021	\$130,939.00	DANIEL COLTER 270-393-3631 270-799-3648 DANIEL.COLTER@BGKY.ORG
LIBERTY FINANCIAL WATER LINE EXT BOWLING GREEN, KY	SCOTT MURPHY DANIEL 2335 BARREN RIVER RD BOWLING GREEN, KY 42101	GOODWIN MILLS & CAYWOOD NASHVILLE, TN RANDY PERRY 615-969-0054 RANDY.PERRY@GMCNETWORK.COM	10/1/2021	\$46,735.00	MARTIN LATHAM 270-926-6554 270-791-5795 MLATHAM@HARTZCONTRACTING.COM
EZ ACCESS SITE UTILITIES HOPKINSVILLE, KY	LEE COMPANY 5237 NASHVILLE ROAD BOWLING GREEN, KY 42101		12/8/2021	\$180,265.00	JEFF PETERSON 615-224-1028 270-576-3183 JEFF.PETERSON@LEECOMPANY.COM
KENTUCKY DOWNS EXPANSION SITE UTILITIES FRANKLIN, KY	SCOTT'S CONTRACTING 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	AMERICAN ENGINEERS INC RICHARD TUTT 65 ABERDEEN DRIVE GLASGOW, KY 270-651-7220	12/6/2022	\$405,600.00	ALAN BRYANT 270-763-1221 ALANB@SCOTTSCONTRACTING.COM
SPRINGBROOK DRAINAGE IMPROVEMENT WHITE HOUSE, TN	CITY OF WHITE HOUSE 725 INDUSTRIAL DRIVE WHITE HOUSE, TN 37188	CSR ENGINEERING INC 1116 MAIN STREET PLEASANT VIEW, TN 37146	5/23/2022	\$299,056.00	Ms.ALIJAH JACKSON 615-672-3654 615-829-2189 AJACKSON@WHITEHOUSE.GOV

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS / PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
EDMONSON CO 5TH/15TH GRADE CENTER DRAINAGE IMP BROWNSVILLE, KY	EDMONSON CO PUBLIC SCHOOLS 100 WILDCAT WAY BROWNSVILLE, KY 42210	N/A	10/20/2021	\$62,165.00	CALLIE BELILES CALLIE.BELILES@EDMONSON.KYSCHOOLS.US
LOGAN COUNTY HIGH SCHOOL INDOOR ATHLETIC FACILITY EXTERIOR UTILITIES RUSSELLVILLE, KY	SUNBELT CONSTRUCTION 1034 SEARCY WAY BOWLING GREEN, KY 42103	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 BOB PICKERILL 270-886-5466	12/15/2021	\$125,800.00	CHRIS DAY 270-202-7797 CDAY@SUNBELTCONSTRUCTIONINC.COM
MIDFIELD APRON EXP. WATER IMPROVEMENTS GALLATIN, TN	MUSIC CITY AIRPORT AUTHORITY 1475 AIRPORT ROAD GALLATIN, TN 37066	GARVER 361 MALLORY STATION RD, STE 102 FRANKLIN, TN 37067 615-377-1337	6/10/2022	\$421,966.00	JEFF DUNHAM 615-452-7248 MUSICCITYEXECUTIVEAIRPORT.COM
GRAYSON CO WTP UV REACTOR IMPROVEMENTS LEITCHFIELD, KY	GRAYSON CO WATER DISTRICT 21 SHULL WHITE ROAD LEITCHFIELD, KY 42754	KENTUCKY ENGINEERING GROUP PO BOX 1034 VERSAILLES, KY 40383 RYAN CARR 859-583-3899	8/22/2022	\$231,406.00	KEVIN SHAW 270-259-2917 KSHAW@GRAYSONWATER.COM
HWEA PYLE LANE PUMP STATION REHAB HOPKINSVILLE, KY	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	11/15/2022	\$185,754.01	DAVID BLANE 270-887-4155 DBLANE@HWEA-KY.COM
HWEA BLOOMING GROVE PUMP STATION REHAB HOPKINSVILLE, KY	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	11/15/2022	\$199,786.98	DAVID BLANE 270-887-4155 DBLANE@HWEA-KY.COM
HWEA KY-800 EAST PUMP STATION REHAB HOPKINSVILLE, KY	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	HWEA PO BOX 628 HOPKINSVILLE, KY 42241	11/15/2022	\$185,659.01	DAVID BLANE 270-887-4155 DBLANE@HWEA-KY.COM
WKU TATE PAGE SITE RESTORATION BOWLING GREEN, KY	WESTERN KENTUCKY UNIVERSITY 1906 COLLEGE HEIGHTS BLVD BOWLING GREEN, KY 42101	WESTERN KENTUCKY UNIVERSITY 1906 COLLEGE HEIGHTS BLVD BOWLING GREEN, KY 42101	1/19/2022	\$58,570.00	BEN JOHNSON 270-783-2480 BEN.JOHNSON@WKU.EDU
LITTLE RIVER WATERLINE REPLACEMENT CADIZ, KY	CITY OF CADIZ 63 MAIN STREET CADIZ, KY 42211	N/A	3/17/2022	\$106,722.00	CRAIG OAKLEY 270-522-8244 270-350-7001 COAKLEY@CITYOFCADIZ.COM
RONNIE CLARK DR WATER MAIN EXTENSION FRANKLIN, KY	FRANKLIN SIMPSON INDUSTRIAL AUTHORITY 109 S. MAIN STREET FRANKLIN, KY 42134	ACES PO BOX 1338 BOWLING GREEN, KY 42102	4/26/2022	\$168,110.00	270-586-4477
LOST RIVER COVE APARTMENTS UTILITIES BOWLING GREEN, KY	SCOTTYS CONTRACTING & STONE LLC 2300 BARREN RIVER RD. BOWLING GREEN, KY 42101	VANMETER & SLAVEY, INC. 1015 SHIVE LN BOWLING GREEN, KY 42103 LUCAS SLAVEY 270-799-1001	7/25/2022	\$523,800.00	CHRIS HIGGINS 270-793-2512 chrish@scottyscontracting.com
SWHS HITTING FACILITY FIRE PROTECTION BOWLING GREEN, KY	PREMIER FIRE & SECURITY 1105 LEITCHFIELD RD OWENSBORO, KY 42303	ACES 1136 S. PARK DR. STE 201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-780-9445	7/10/2022	\$107,500.00	JEFF MINOR 270-583-9995 270-993-6615 JEFF.MINOR@PREMIERFIRESECURITY.US
BARREN COUNTY JAIL DEMO GLASGOW, KY	BARREN COUNTY FISCAL COURT 117 NORTH PUBLIC SQUARE GLASGOW, KY 42141	RBS DESIGN GROUP 723 HARVARD DRIVE OWENSBORO, KY 42301 KYLE ABNEY 270-683-1158	3/4/2022	\$85,000.00	MICHAEL HALE
1188 MIZPAH RD DEMOLITION BOWLING GREEN, KY	PREMIER DEVELOPMENT PARTNERS 5301 GRANT AVE, SUITE 100 CLEVELAND, OH 44125	N/A	3/9/2022	\$46,740.00	TED WOCHNA 216-410-3226 TED@PREMIERDEVELOP.COM

SCOTT & RITTER, INC.
PREVIOUS 5 YEARS PROJECTS

JOB NAME / LOCATION	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	DESIGN ENGINEER ADDRESS PHONE #	DATE COMPLETE	CONTRACT PRICE	CONTACT PERSON COMPANY PHONE #
T. MARZETTIS EQUILIZATION TANK UNDERGROUND PIPING HORSE CAVE, KY	GRAY CONSTRUCTION, INC 10 QUALITY STREET LEXINGTON, KY 40507	HERITAGE ENGINEERING, LLC 642 SOUTH 4TH ST SUITE 100 LOUISVILLE, KY 40202 502-562-1412	12/10/2022	\$723,885.00	DUSTIN JENKINS 859-281-5000 DJENKINS@GRAY.COM
MB ROLAND DISTILLERY RICKHOUSE ADDITION PEMBROKE, KY	KELLY CONSTRUCTION, INC 12550 LAKE STATION PLACE LOUISVILLE, KY 40299	ACES 1136 S. PARK DR STE 201 BOWLING GREEN, KY 42103 AARON ARNOLD 270-996-8561	6/30/2022	\$364,225.00	CHRIS RUSSELL 502-479-6571 502-379-0147 CRUSSELL@KELLEYCONSTRUCTION.COM
HCWD #2 WATERLINE BORES ELIZABETHTOWN, KY	HCWD #2 PO BOX 970 ELIZABETHTOWN, KY 42702-0970	ENGINEERING DESIGN GROUP 315 SOUTH MULBERRY ST ELIZABETHTOWN, KY 42702 WARREN CLIFFORD 270-789-1436	8/30/2022	\$229,600.00	FORREST POLLOCK 270-737-1056 270-307-9744
KDOT MCLEAN CO. WATERLINE RELOCATION CALHOUN, KY	SCOTTYS CONTRACTING & STONE 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 MARK SOWELL 270-887-7920	11/30/2022	\$371,435.00	COLE OVERSTREET
WKU SUMMER 2022 STEAM REPAIRS BOWLING GREEN, KY	LYONS COMPANY INC. 308 SAMSON ST. GLASGOW, KY 42141	N/A	9/28/2022	\$534,385.00	GEORGE WHITNEY 270-404-0769 GWHITNEY@LYONSCOMPANY.COM
MIKE FOSTER WAY HOPKINSVILLE, KY	CHRISTIAN COUNTY FISCAL COURT 515 WEBER STREET HOPKINSVILLE, KY 42240	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 BOB PICKERILL 270-887-7920	10/27/2022	\$278,635.00	DARREL GUSTAFSON (270) 887-4100
CLARKSVILLE AIRPORT HANGAR ADDITION SITE UTILITIES CLARKSVILLE, TN	LEE COMPANY 4057 RURAL PLAINS CIRCLE FRANKLIN, TN 37085	RICHARD RINKS & ASSOCIATES 30 NORTH JEFFERSON AVENUE COOKEVILLE, TN 38501 RICHARD RINKS 931-528-5543	6/20/2022	\$86,110.00	JEFF PETERSON 615-567-1000 270-576-3183 JEFF.PETERSON@LEECOMPANY.COM
WESTEN ST. & ROCKINGHAM AVE ROUNDABOUT BOWLING GREEN, KY	SCOTTYS CONTRACTING & STONE 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	DDS 148 CHESTER COURT BOWLING GREEN, KY 42103 270-843-2247	7/26/2022	\$97,870.50	CHRIS HIGGINS 270-793-2512 CHRISH@SCOTTSCONTRACTING.COM
MATALCO SITE UTILITIES FRANKLIN, KY	SCOTTYS CONTRACTING & STONE 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	N/A	10/11/2022	\$41,630.00	ALAN BRYANT 270-783-1221 ALANB@SCOTTSCONTRACTING.COM
JENNIE STUART ADDITIONAL PARKING LOT HOPKINSVILLE, KY	GREYSTONE BROKERAGE & DEVELOPMENT 5115 MARYLAND WAY, SUITE 68 BRENTWOOD, TN 37027	N/A	10/24/2022	\$35,525.00	KEN BIRDSONG 615-591-6822 615-517-8284 BIRDSONG@GREYSTONEBD.COM
FRANK YOST LANE ENTRANCE IMPROVEMENTS HOPKINSVILLE, KY	CITY OF HOPKINSVILLE 705 NORTH MAIN STREET HOPKINSVILLE, KY 42240	BELL ENGINEERING 107 FORBES DRIVE HOPKINSVILLE, KY 42240 DAVID HOWELL 270-886-5466	12/15/2022	\$188,175.00	MIKE PERRY 270-880-0800 MPERRY@HOPKINSVILLEKY.US
NOVELIS TEMPORARY WATER & SEWER GUTHRIE, KY	LYONS COMPANY INC. 308 SAMSON ST. GLASGOW, KY 42141	N/A	12/7/2022	\$175,375.00	GARY CHAFFIN 270-651-2733 270-404-6133 GCHAFFIN@LYONSCOMPANY.COM
LOGAN CO WEST INDUSTRIAL PARK WATERLINE RELOCATE RUSSELLVILLE, KY	SCOTTYS CONTRACTING & STONE 2300 BARREN RIVER ROAD BOWLING GREEN, KY 42101	ACES 1136 S. PARK DR STE 201 BOWLING GREEN, KY 42103 KENT GILLEY 270-780-9445	10/30/2022	\$107,225.00	CHRIS HIGGINS 270-793-2512 CHRISH@SCOTTSCONTRACTING.COM

EQ. #	DESCRIPTION	PROJECT ANALYSIS DESCRIPTION	SERIAL #	PLATE #
CL4400	1993 GROVE RT635C CRANE (*8 HOUR MINIMUM ON EXTERNAL RATE)	GROVE CRANE	81820	
CL4401	2008 JLG BOOM LIFT	BOOM LIFT	300122528	
DOZERS < 100 HP				
D906	1995 CASE 550G DOZER	CASE 550 DOZER	JJG0215741	
D9100	2003 CASE 850-K DOZER	CASE 850 DOZER	JJG0296765	
D9101	2006 CASE 550H DOZER	CASE 550 DOZER	CAL00522	
D9102	2004 CASE 850-K DOZER	CASE 850 DOZER	CAL004358 CRW198	
D9103	2007 CASE 850 K SERIES II DOZER	CASE 850 DOZER	CAL005999	
D9104	2006 CASE 850K DOZER SERIES III	CASE 850 DOZER	CAL005096	
D9105	2007 CASE 850 K SERIES DOZER	CASE 850 DOZER	CAL005582	
D9106	2018 CATERPILLAR D5K2XL (INCLUDES GPS UNIT)	CAT D5K2XL	KW205248	
D9107	2018 CATERPILLAR D5K2XL (INCLUDES GPS UNIT)	CAT D5K2XL	KW205364	
D9108	2018 CATERPILLAR D5K2XL (INCLUDES GPS UNIT)	CAT D5K2XL	KW205411	
DOZERS > 100 HP				
D907	1994 CAT D6-H DOZER	CAT D6H DOZER	3ZF05962	
D908	1999 JOHN DEERE 850 C DOZER W/ RIPPER	JOHN DEERE 850 DOZER	T0850CX874750	
D909	1999 CAT D6-R DOZER	CAT D6R DOZER	3ZN00675	
D9200	2006 CAT D6RXL DOZER	CAT D6RXL DOZER	0GJB00530	
D9201	2005 CAT D6-R XL SERIES II DOZER	CAT D6-R XL SERIES II DOZER	JAA011101	
D9202	2011 CAT D8-T DOZER (INCLUDES GPS UNIT)	CAT D8-T DOZER	OKP203785	
D9203	2012 CAT D-6TXW DOZER (INCLUDES GPS UNIT)	CAT D6-TXW DOZER	SLJ01036	
MOTOR GRADERS				
G501	1998 FG 65-C FIAT ALLIS MOTOR GRADER	65 FIAT GRADER	85505445	
G4100	2011 CAT 12M MOTOR GRADER (INCLUDES GPS UNIT)	12M MOTOR GRADER	12MHB9F01048	
MISC				
I103	GILL ROLLOVER BOX SCRAPER [TRACTOR]	GILL ROLLOVER BOX SCRAPER	N/A	
I104	BALTIMATIC 80 BALTIC SPREADER [TRACTOR]	BALTIMATIC 80 SPREADER	N/A	
TRENCHERS				
L7000	3500 DITCHWITCH TRENCHER	DITCHWITCH TRENCHER	3L1112	
LOADERS/BACKHOES				
L7100	2003 CASE 590 SM 4 WD EXTENDAHOE	CASE 590 BACKHOE	JJG0287829	
L7101	2005 CASE 590 SM SERIES II 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N5C394667	
L7102	2005 CASE 590 SM SERIES II 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N6C420045	
L7103	2006 CASE 590 SM SERIES II 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N6C420751	
L7104	2007 CASE 590 SM SERIES II 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N7C431837	
L7105	2007 CASE 590 SM SERIES II 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N7C432000	
L7106	2007 CASE 590 SM SERIES II 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N7C431997	
L7107	2008 CASE 590 SM SERIES III 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N8C508661	
L7108	2008 CASE 590 SM SERIES III 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	N8C508665	
L7109	2010 CASE 590 SM SERIES III 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	NAC532300	
L7110	2010 CASE 590 SM SERIES III 4WD EXTND/QUICK FORKS	CASE 590 BACKHOE	NAC532291	
L733	1995 CASE 590 SUPER L 4WD EXTENDAHOE	CASE 590 BACKHOE	JJG-0208732	
L736	1997 CASE 590SL 4WD EXTENDAHOE	CASE 590 BACKHOE	JJG0210584	
L746	2003 CASE 590 SM 4WD EXTENDAHOE	CASE 590 BACKHOE	JJG0288012	
L747	2003 CASE 590 SM 4WD EXTENDAHOE	CASE 590 BACKHOE	JJG0287888	
L748	2003 CASE 590 SM 4WD EXTENDAHOE	CASE 590 BACKHOE	JJG0288439	
L7601	2004 CASE 590 SM SERIES II 4WD EXTENDAHOE	CASE 590 BACKHOE	N4C309445	
L7602	2004 CASE 590 SM SERIES II 4WD EXTENDAHOE	CASE 590 BACKHOE	N4C309483	
L7603	2004 CASE 590 SM SERIES II 4WD EXTENDAHOE	CASE 590 BACKHOE	N4C305372	
LARKINS	2013 CASE 590 SN BACKHOE (RITTER COMPANY)	CASE 590 BACKHOE	JJGN59SNADC591312	
TRACK LOADERS				
L727	1991 CAT 953 TRACK LOADER	CAT 953 LOADER	20Z03770	
L7350	2005 CAT 963C TRACK LOADER	CAT 963C LOADER	BBD02094	
WHEEL LOADERS				
L7300	2005 VOLVO L60E WHEEL LOADER W/ FORKS & BUCKET	VOLVO L60 RUBBER TIRE LOADER	L060EV60795	
L7301	2007 VOLVO L60E WHEEL LOADER W/ FORKS & BUCKET	VOLVO L60 RUBBER TIRE LOADER	L060EV61214	
L7303	2012 VOLVO L90G WHEEL LOADER W/ FORKS & BUCKET	VOLVO L90 RUBBER TIRE LOADER	VCE0L90GE00003355	
L7305	2014 VOLVO L60G WHEEL LOADER W/ FORKS & BUCKET	VOLVO L60 RUBBER TIRE LOADER	VCE0L60G0S611318	
L7306	2018 VOLVO L70H WHEEL LOADER W/ FORKS & BUCKET	VOLVO L70 RUBBER TIRE LOADER	VCE0L70HC0S623299	
SKID STEERS				
L735	1997 CASE 1845C UNILOADER	CASE 1845 UNILOADER	JAF0225240	
L738	1998 CASE 1845C UNILOADER	CASE 1845 UNILOADER	JAF0251450	
L7700	2003 CASE 60 XT UNILOADER	CASE 60 UNILOADER	JAF0366138	
L7701	2007 TAKEUCHI TL-150 CRAWLER LOADER W/ FORKS	TAKEUCHI 150 LOADER	21503819	
L7702	2014 TAKEUCHI TL12CRH CRAWLER LOADER W/ FORKS	TAKEUCHI TL12CRH LOADER	201200904	
L7703	2017 TAKEUCHI TL 12R-2 CRAWLER LOADER W/ FORKS	TAKEUCHI TL12R-2 LOADER	412100055	
L7704	2020 TAKEUCHI TL 12R2-CRH CRAWLER LOADER W/ FORKS	TAKEUCHI TL12CRH LOADER	412103328	
L7705	2022 TAKEUCHI TL 12V2	TAKEUCHI TL 12V2 LOADER	412004832	
L7706	2022 TAKEUCHI TL 12V2-CRH CRAWLER LOADER	TAKEUCHI TL 12V2-CRH LOADER	412005044	
EXCAVATORS < 20,000 lb				
LARKINS (L740)	1999 TAKEUCHI TB145 EXCAVATOR (RITTER COMPANY)	TAKEUCHI 145 EXCAVATOR	14510374	
L7400	2007 TAKEUCHI TB145 EXCAVATOR	TAKEUCHI 145 EXCAVATOR	14516558	
L7403	2014 TAKEUCHI TB285 EXCAVATOR	TAKEUCHI 285 EXCAVATOR	185001364	
L7404	2014 TAKEUCHI TB285 EXCAVATOR	TAKEUCHI 285 EXCAVATOR	185001370	
L7406	2016 TAKEUCHI TB290 EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185104023	
L7407	2017 TAKEUCHI TB290 CL EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185103089	
L7408	2017 TAKEUCHI TB290 CL EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185104165	
L7409	2017 TAKEUCHI TB290 CL EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185104162	
L7410	2017 TAKEUCHI TB290 CL EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185104491	
L7411	2021 TAKEUCHI TB290 EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185108337	
L7412	2021 TAKEUCHI TB290 EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185108332	
L7413	2021 TAKEUCHI TB290 EXCAVATOR	TAKEUCHI 290 EXCAVATOR	185108329	
LARKINS	2015 TAKEUCHI TB290 EXCAVATOR (RITTER COMPANY)	TAKEUCHI 290 EXCAVATOR	1851004560	

EQ. #	DESCRIPTION	PROJECT ANALYSIS DESCRIPTION	SERIAL #	PLATE #
EXCAVATORS > 20,000 lb				
L7517	2010 HITACHI ZX270LC-3 EXCAVATOR	HITACHI 270 EXCAVATOR	ASR820157	
L7518	2010 HITACHI ZX270LC-3 EXCAVATOR	HITACHI 270 EXCAVATOR	ASR820158	
LARKINS	2012 HITACHI ZX290LC-5N EXCAVATOR (RITTER COMPANY)	HITACHI 290 EXCAVATOR	1FFDDB70EBE830045	
L7520	2012 HITACHI ZX290LC-5N EXCAVATOR	HITACHI 290 EXCAVATOR	1FFDDB70CCE830131	
L7521	2006 HITACHI ZX450LC EXCAVATOR	HITACHI 450 EXCAVATOR	FF016J011415	
L7522	2013 HITACHI ZX470LC-5 EXCAVATOR	HITACHI 470 EXCAVATOR	HCMJAA70H00030027	
L7523	2013 HITACHI ZX470LC-5 EXCAVATOR	HITACHI 470 EXCAVATOR	HCMJAA70T00030128	
L7524	2013 HITACHI ZX290LC-5N EXCAVATOR	HITACHI 290 EXCAVATOR	1FFDDB70CDE830333	
L7525	2013 HITACHI ZX290LC-5N EXCAVATOR	HITACHI 290 EXCAVATOR	1FFDDB70VDE830334	
L7526	2013 HITACHI ZX290LC-5N EXCAVATOR	HITACHI 290 EXCAVATOR	1FFDDB70ADE830335	
L7527	2018 HITACHI ZX300LC-6 EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70PJF840293	
L7528	2018 HITACHI ZX300LC-6 EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70AJF840415	
L7529	2018 HITACHI ZX300LC-6 EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70AJF840432	
L7530	2018 HITACHI ZX300LC-6 EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70LJF840433	
L7531	2018 HITACHI ZX300LC-6 EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70CJF840436	
L7532	2019 HITACHI ZX300LC-6N EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70HKF840600	
L7533	2019 HITACHI ZX300LC-6N EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70AKF840612	
L7534	2019 HITACHI ZX300LC-6N EXCAVATOR	HITACHI 300 EXCAVATOR	1FFDDP70TKF840634	
L7535	2019 HITACHI ZX470LC-6 EXCAVATOR	HITACHI 470 EXCAVATOR	HCMJAG60A00061277	
L7536	2019 HITACHI ZX470LC-6 EXCAVATOR	HITACHI 470 EXCAVATOR	HCMJAG60J00061288	
L7537	2022 HITACHI ZX490LC-6 EXCAVATOR	HITACHI 490 EXCAVATOR	HCMJAG61L00061760	
L7538	2022 HITACHI ZX245LC-6 EXCAVATOR	HITACHI 245 EXCAVATOR	HCMDFB60A00512547	
L7539	2022 HITACHI ZX300LC-6 EXCAVATOR	HITACHI 300 EXCAVATOR	HCMDDN60H00060321	
LIGHT TOWERS				
M10031	1998 AMIDA LIGHT TOWER	AMIDA LIGHT TOWER	980246494	
M10032	1999 AMIDA LIGHT TOWER	AMIDA LIGHT TOWER	991160702	
COMPRESSORS				
M10100	INGERSALL RAND 185 AIR COMPRESSOR JOHN DEERE 4.5L	INGERSALL 185 AIR COMPRESSOR	320845UDL221	
M10101	2007 INGERSOLL RAND P-185 COMPRESSOR	INGERSALL 185 COMPRESSOR	4FUCABAA27U382616	
M10102	2005 SULLAIR 185 CFM COMPRESSOR	SULLAIR 185 COMPRESSOR	004-150028	
M10103	2003 SULLAIR 185 CFM COMPRESSOR	SULLAIR 185 COMPRESSOR	004-141684	
M10104	2004 SULLAIR 185 CFM COMPRESSOR	SULLAIR 185 COMPRESSOR	004-145461	
M10105	2006 SULLAIR 185 CFM COMPRESSOR	SULLAIR 185 COMPRESSOR	200601080037	
M10106	2006 SULLAIR 185 CFM COMPRESSOR	SULLAIR 185 COMPRESSOR	200605050119	
M10107	2010 ATLAS COPCO 185 AIR COMPRESSOR	ATLAS 185 COMPRESSOR	4500A1011AR034012	
M10108	2010 ATLAS COPCO 185 AIR COMPRESSOR	ATLAS 185 COMPRESSOR	4500A101XAR034073	
M10242	INGERSALL RAND 185 AIR COMPRESSOR	INGERSALL 185 AIR COMPRESSOR	4FVCABAAZZU329293	
M10243	2009 SULLAIR 185CA AIR COMPRESSOR	SULLAIR 185 COMPRESSOR	20090250059	
M1026	JOY D185S CFM COMPRESSOR JOHN DEERE 4219DF	JOY 185 COMPRESSOR	122938	
FUEL TANKS				
M1012	1000 GAL. FUEL TANK	1000 GAL FUEL TANK	N/A	
M1013	1120 GAL. FUEL TANK	1120 GAL FUEL TANK	N/A	
M1014	1120 GAL. FUEL TANK	1120 GAL FUEL TANK	N/A	
M1015	1120 GAL. FUEL TANK	1120 GAL FUEL TANK	N/A	
M1016	1120 GAL. FUEL TANK	1120 GAL FUEL TANK	N/A	
M1017	1120 GAL. FUEL TANK	1120 GAL FUEL TANK	N/A	
M10171	1120 GAL. DOUBLE WALL FUEL TRAILER	1120 GAL FUEL TRAILER	N/A	
M10500	2007 16' HANK TRAILER W/1120 GAL FUEL TANK DBL WALL	16' TRAILER W/ 1120 GAL FUEL TANK	1H9FB16207S39166	08 075730
M10501	2007 16' HANK TRAILER W/1000 GAL FUEL TANK DBL WALL	16' TRAILER W/1000 GAL FUEL TANK	1H9FB16267S139625	
M10502	1100 GAL FUEL TANK	1100 GAL FUEL TANK		
M10503	1100 GAL FUEL TANK	1100 GAL FUEL TANK		
HYDRAULIC DRILLS				
M10201	2018 FURUKAWA HCR1500	HYDRAULIC DRILL	1730100462	
MISC ATTACHMENTS (Hydraulic) (EXTERNAL RATE INCLUDES CARRIER)*				
M1040	FFC LAF3576 PREPARATOR ATTACHMENT [UNILOADER]	PREPARATOR ATTACHMENT	13097	
M10402	SWEEPSTER LA1840 BROOM [UNILOADER]	SWEEPSTER BROOM (UNILOADER)	9802102	
M10430	2004 BRADCO 625 TRENCHER ATTACHMENT [UNILOADER]	BRADCO 625 TRENCHER	101758	
M10644	2019 BOBCAT SOIL CONDITIONER	SOIL CONDITIONER	A6TH02583	
M10646	2020 ICS 890 F4 HYDRAULIC CHAIN SAW	ICS HYDRAULIC CHAIN SAW	17033	
M10647	2022 PREMIER HO 19PDR AUGER	PREMIER AUGER	22510	
M10651	2010 SWEEPSTER HYDRAULIC SWEEPER [BACKHOE]	SWEEPSTER HYDRAULIC SWEEPER	1003015	
M10655	SWEEPSTER S32M6L 72" BROOM [UNILOADER]	SWEEPSTER BROOM (UNILOADER)	0224047	
M10659	2016 ANTRAQUIP AQ-4XL HYDRAULIC GRINDER (FOR 470/490)	HYDRAULIC GRINDER	81650	
TRAILERS				
M10405	1990 TRAILER WORLD TRAILER (10,000 LB CAP)	TRAILERWORLD TRAILER	IT91E2TAXL1192927	08 074705
M10612	2008 CRONKITE TRAILER (10,000 LB CAP.)	CRONKHITE TRAILER	47326202681000061	11 63442T
M10613	2009 TOWMASTER T-40 TRAILER (40,000 LB CAP)	TOWMASTER TRAILER	4KNFT24219L160092	08 076308
M10619	2006 ATM TRAILER (10,000 LB CAP)	ATM TRAILER	1A9FB182X6L429231	11 49750T
M10620	2006 ROGERS RAG20 TRAILER (40,000 LB CAP)	ROGERS TRAILER	1RBT352086AR24987	11 52773T
M10624	2015 TOWMASTER T-40	TOWMASTER TRAILER	4KNFT2427FL161825	11 63608T
M10625	2015 TOWMASTER TC-10 TRAILER	TOWMASTER TRAILER	4KNFT1623FL161747	11 62405T
M10628	2019 SURE TRAC TRAILER 20'	SURE TRAC TRAILER	5JW2U2027K1250370	11 83258T
M10629	2022 SURE TRAC 20' FLAT DECK TRAILER	SURE TRAC TRAILER	5JW1U2026N3352215	11 C1M377

EQ. #	DESCRIPTION	PROJECT ANALYSIS DESCRIPTION	SERIAL #	PLATE #
	PLATE COMPACTORS (EXTERNAL RATE INCLUDES CARRIER)*			
M1070	ALLIED VIBRATOR COMPACTOR (590)	ATLAS COMPACTOR	N/A	
M10450	2006 ATLAS COPCO 409 PLATE COMPACTOR (590)	ATLAS COMPACTOR	NAA201015	
M10451	2007 ATLAS COPCO HC409 PLATE COMPACTOR (590)	ATLAS COMPACTOR	121874-1-1	
M10454	2007 ATLAS COPCO HC409 PLATE COMPACTOR (590)	ATLAS COMPACTOR	NAA201082	
M10455	2008 ATLAS COPCO HC409 PLATE COMPACTOR (590)	ATLAS COMPACTOR	NAA201079	
M10652	2011 NPK C10C PLATE COMPACTOR (HITACHI)	NPK COMPACTOR	1N8584	
M10656	2014 INDECO IHC 75 PLATE COMPACTOR (590)	INDECO COMPACTOR	C30165	
M10657	2014 INDECO IHC 75 PLATE COMPACTOR (590)	INDECO COMPACTOR	C30166	
M10658	2014 INDECO IHC 75 PLATE COMPACTOR (590)	INDECO COMPACTOR	C30167	
M10660	2018 NPK C10C PLATE COMPACTOR (HITACHI)	NPK COMPACTOR	2N2799	
M10661	2018 NPK C10C PLATE COMPACTOR (HITACHI)	NPK COMPACTOR	2N3102	
M10662	2018 INDECO IHC 75 PLATE COMPACTOR (TAKEUCHI)	INDECO COMPACTOR	C30361	
M10663	2018 INDECO IHC 75 PLATE COMPACTOR (TAKEUCHI)	INDECO COMPACTOR	C30362	
M10664	2021 INDECO IHC 75 PLATE COMPACTOR (TAKEUCHI)	INDECO COMPACTOR	C30471	
M10665	2021 INDECO IHC 75 PLATE COMPACTOR (TAKEUCHI)	INDECO COMPACTOR	C30472	
	HAMMERS (EXTERNAL RATE INCLUDES CARRIER)*			
M1058	2002 INDECO MES3500 HYD. HAMMER (270/290/300)	INDECO 3500 HYD. HAMMER	4658	
M10452	2007 INDECO HP5500 HYD. HAMMER (270/290/300)	INDECO 5500 HYD. HAMMER	4907	
M10453	2007 INDECO HP 5500 HYD. HAMMER (270/290/300)	INDECO 5500 HYD. HAMMER	4908	
M10456	2010 INDECO HP 12001 HYD. HAMMER (450/470)	INDECO 12001 HYD. HAMMER	7000378	
M10457	2010 INDECO HP 5500 HYD. HAMMER (270/290/300)	INDECO 5500 HYD. HAMMER	5017	
M10458	2012 NPK GH-12 HYD. HAMMER (270/290/300)	NPK GH-12 HYD. HAMMER	103984	
M10459	2006 KENT FF70 QT HYD. HAMMER (450/470)	KENT FF70 QT HYD. HAMMER	1082	
M10460	2014 INDECO HP5500 HYD. HAMMER (270/290/300)	INDECO 5500 HYD. HAMMER	5233	
M10461	2014 INDECO HP5500 HYD. HAMMER (270/290/300)	INDECO 5500 HYD. HAMMER	5241	
M10463	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES 080120	
M10464	2017 INDECO HP5000 HYD. HAMMER (245)	INDECO HP5000 HYD. HAMMER 245	30404408	
M10465	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES 080658	
M10466	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES 080659	
M10467	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES 080660	
M10468	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES 080661	
M10469	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES080119	
M10470	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES082323	
M10471	2017 ATLAS COPCO SB 552 HAMMER (TAKEUCHI)	ATLAS COPCO SB 552 HAMMER	BES082324	
M10472	2018 INDECO HP6000 FS HAMMER (270/290/300)	INDECO HP6000 FS HAMMER	35405448	
M10473	2019 INDECO HP6000 FS HAMMER (270/290/300)	INDECO HP6000 FS HAMMER	35405491	
M10474	2020 INDECO HP6000 FS HAMMER (270/290/300)	INDECO HP6000 FS HAMMER	35405527	
M10475	2021 INDECO HP6000 FS HAMMER (270/290/300)	INDECO HP6000 FS HAMMER	35405547	
M10476	2021 EPIROC SB 552 HAMMER (TAKEUCHI)	EPIROC SB 552 HAMMER	BES140432	
M10477	2021 EPIROC SB 552 HAMMER (TAKEUCHI)	EPIROC SB 552 HAMMER	BES140433	
M10478	2022 INDECO HP6000 FS HAMMER (270/290/300)	INDECO HP6000 FS HAMMER	35405576	
M10591	2004 INDECO MES3500 HYD. HAMMER (270/290/300)	INDECO 3500 HYD. HAMMER	4756	
M10594	2005 INDECO MES 3500 HYD. HAMMER (270/290/300)	INDECO 3500 HYD. HAMMER	4791	
	TOOL TRAILERS			
M10600	2005 EAST TN TOOL TRAILER (CREW "G")	TOOL TRAILER (CREW G)	5KXBV22265M005040	08 076287
M10601	2006 TRAILER WORLD TOOL TRAILER (CREW "E")	TOOL TRAILER (CREW E)	48BTE222X6A084572	11 38861T
M10602	2007 22 FT. TOOL TRAILER (CREW "A")	TOOL TRAILER (CREW A)	48BTE22208A094966	11 38862T
M10603	2007 22 FT. TOOL TRAILER (CREW "B")	TOOL TRAILER (CREW B)	48BTE22247A094967	11 38863T
M10604	2007 22 FT. TOOL TRAILER (CREW "M")	TOOL TRAILER (CREW D)	48BTE22267A094968	11 D1N326
M10605	2007 22 FT. TOOL TRAILER (CREW "L")	TOOL TRAILER (CREW L)	48BTE22287A094969	11 39101T
M10614	2009 22 FT. TOOL TRAILER (CREW "D")	TOOL TRAILER (CREW M)	48BTE22279A105186	08 469495
M10615	2006 CHALLENGER TRAILER 6X12 (CREW "R")	TOOL TRAILER (CREW R)	5HABV12145N041915	11 40229T
M10616	2010 22 FT. TOOL TRAILER (CREW "T")	TOOL TRAILER (CREW N)	48BTE2221AA109240	11 46787T
M10617	2010 22 FT. TOOL TRAILER (CREW "O")	TOOL TRAILER (CREW O)	48BTE2223AA109241	11 46894T
M10621	2013 UNITED 24 FT. TOOL TRAILER (CREW "F")	TOOL TRAILER (CREW F)	56JTE2423DA133369	11 54319T
M10622	2014 UNITED 24 FT. TOOL TRAILER (CREW "P")	TOOL TRAILER (CREW G)	56JTE2427EA135126	08 636690
M10623	2014 UNITED 24 FT. TOOL TRAILER (CREW "C")	TOOL TRAILER (CREW C)	56JTE2421EA139916	11 59059T
M10626	2018 UNITED 24 FT. TOOL TRAILER (CREW "G")	TOOL TRAILER (CREW G)	56JTE242XJA161911	11 79739T
M10600	2006 EAST TN TOOL TRAILER (CREW "G")	TOOL TRAILER (CREW G)	5KXBV22265M005041	9 076287
	PIPE WAGONS			
M10606	2007 KORY 10 TON PIPE WAGON (CREW "O")	KORY PIPE WAGON		
M10607	2007 KORY 10 TON PIPE WAGON (CREW "D")	KORY PIPE WAGON		
M10608	YELLOW JOHN DEERE PIPE WAGON (SPARE)	JOHN DEERE PIPE WAGON		
M10609	ORANGE AND BLUE PIPE WAGON (CREW "B")	ORANGE/BLUE PIPE WAGON		
M10610	2008 KORY 10 TON PIPE WAGON (CREW "N")	KORY PIPE WAGON		
M10611	2008 KORY 10 TON PIPE WAGON (CREW "M")	KORY PIPE WAGON		
M1091	WAGON MOUNTED TOOL WAGON	MOUNTED TOOL TRAILER	N/A	
M1093	14' WAGON MOUNTED TOOL TRAILER	MOUNTED TOOL TRAILER	N/A	
M1095	WAGON MOUNTED TOOL TRAILER	MOUNTED TOOL TRAILER	N/A	
M1096	18' TOOL TRAILER ON 8 TON RUNNING GEAR PIPE WAGON (CREW "A")	MOUNTED TOOL TRAILER	81067-046	
M1094	WAGON MOUNTED TOOL TRAILER	MOUNTED TOOL TRAILER	N/A	
M1097	8 TON PIPE WAGON ON JOHN DEERE W1065 RINNING GEAR PIPE WAGON	JOHN DEERE PIPE WAGON	168682	
M10971	10 TON SHOP MADE KORY PIPE WAGON (CREW "L")	KORY PIPE WAGON		

EQ. #	DESCRIPTION	PROJECT ANALYSIS DESCRIPTION	SERIAL #	PLATE #
MISC SUPPORT EQUIPMENT & WELDERS				
M1010	WELDER - MILLER 200 AMP WELDER (SHOP)	MILLER 200 AMP WELDER	JB485330	
M1020	WELDER - 225 MILLER ELECTRIC WELDER (V239) ONAN ENGINE	MILLER 225 ELECTRIC WELDER	KF903847	
M1052	3 1/3" GRUNDOMAT PNEUMATIC PIERCING TOOL	GRUNDOMAT PNEUMATIC PIERCING	28510975103	
M1071	GOOSEN SB1300 STRAW BLOWER HONDA GX340 11HP ENGINE	HONDA STRAW BLOWER	5320	
M1080	1992 WATER TEST MACHINE RD-106-LP HONDA GX240	WATER TEST MACHINE	0 026	
M1082	RP SMITH S-54 TAPPING MACHINE (RATE PER TAP)	TAPPING MACHINE	N/A	
M10211	WELDER - 250 MILLER ELECTRIC WELDER (V235) ONAN ENGINE	MILLER 250 ELECTRIC WELDER	LC322348	
M10213	WELDER - 2006 LINCOLN VANTAGE 400		41060120256	
M10214	WELDER - 2007 LINCOLN VANTAGE 400		U1070403973	
M10653	2012 AIM BUCK THUMB 34 X 75		62553	
M10654	2012 BERLON GRAPPLE BUCKET 79"		BELPK678	
M10802	2006 MUELLER B-101/H604 DRILLING & TAPPING MACHINE (RATE PER TAP)	MUELLER B-101/H604 DRILL & TAP	SP06K30876/00664	
M10803	WELDER - 2008 250 MILLER BOBCAT ELECTRIC WELDER (V239)	BOBCAT 225 ELECTRIC WELDER	LJ110315H	
M10804	2008 WATER TEST MACHINE DPH-8 HONDA GX270	WATER TEST MACHINE	30012	
M10805	MUELLER B-100 TAPPING MACHINE (RATE PER TAP)	MUELLER TAP MACHINE	N/A	
M10807	WELDER-MILLER BOBCAT 225		LC162800	
M10808	2011 MAGNUM 50KW TRAILER MT GENERATOR		5AJGS1112BB006539	
M10809	2011 MAGNUM 50KW TRAILER MT GENERATOR		5AJGS1119BB006540	
M10810	2005 WALDON SWEEPMASTER SM-250	WALDON SWEEPMASTER	30415-012	
M10811	2006 DITCH WITCH FX30 VAC TRAILER TRAILER	DITCH WITCH VAC TRAILER	CMWFX30SC60000041	11 52174T
M10812	2013 MAGNUM 33 KW TRAILER MT GENERATOR	MAGNUM TRAILER GENERATOR	1308778	
M10813	2013 MAGNUM 33 KW TRAILER MT GENERATOR	MAGNUM TRAILER GENERATOR	1308824	
M10814	2015 CONCRETE CORING MACHINE ON 2015 LAWRIMORE TRAILER	CONCRETE CORING MACHINE	841B314510035	11 62406T
M10815	MCPHERSON AIR CURTAIN BLOWER	MCPHERSON AIR BLOWER		
M10816	2017 JET DRILL PRESS J-A2608-1	JET DRILL PRESS	409215	
M10818	MUELLER B-100 TAPPING MACHINE (RATE PER TAP)	MUELLER TAP MACHINE		
M10819	MUELLER B-100 TAPPING MACHINE (RATE PER TAP)	MUELLER TAP MACHINE		
M10820	MUELLER B-100 TAPPING MACHINE (RATE PER TAP)	MUELLER TAP MACHINE		
M10821	MUELLER D5 TAPPING MACHINE (RATE PER TAP)	MUELLER TAP MACHINE		
M10822	MUELLER D5 TAPPING MACHINE (RATE PER TAP)	MUELLER TAP MACHINE		
M10823	2020 FINN B40S STRAW BLOWER	FINN STRAW BLOWER	MUA-2684	
M10824	VER-MAC MESSAGE BOARD	MESSAGE BOARD	10-03923	
M10825	SOLAR TECH MESSAGE BOARD	MESSAGE BOARD	4GM2M1514F1412844	
GPS / INSTRUMENTATION				
M10850	2018 TRIMBLE GPS TABLET & BASE & ROVER (SURVEYING TECHNICIAN'S)	GPS TABLET, BASE & ROVER	5729R31764	
M10851	2018 TRIMBLE GPS TABLET & BASE & ROVER	GPS TABLET, BASE & ROVER	SY9430I0S00542	
M10852	2018 TRIMBLE GPS TABLET & BASE & ROVER	GPS TABLET, BASE & ROVER	SY9430HS00306	
M10853	2019 TRIMBLE GPS TABLET & BASE & ROVER	GPS TABLET, BASE & ROVER	SY9430JS00410	
M10854	2020 TRIMBLE ROBOTIC UTS	TRIMBLE UTS	72630798	
M10855	2021 CUE 10/C542NTSC2-120-US CAMERA	2021 CUE CAMERA	10/R3400-10-CUES-160	
M10856	2022 TRIMBLE GPS TABLET & BASE & ROVER	GPS TABLET, BASE & ROVER	DAB220200301	
M10860	2018 TRIMBLE GPS CAB KIT	GPS CAB KIT	1836J065SW	
M10861	2018 TRIMBLE GPS CAB KIT	GPS CAB KIT	060J532SW	
M10862	2018 TRIMBLE GPS CAB KIT	GPS CAB KIT	2477J066SW	
M10863	2018 TRIMBLE GPS CAB KIT	GPS CAB KIT	3067J155SW	
M10864	2020 TRIMBLE GPS CAB KIT	GPS CAB KIT	2819J058SW	
M10865	2022 TRIMBLE GPS CAB KIT	GPS CAB KIT	3560J021SW	
MATERIAL HANDLING & PRODUCTION (EXTERNAL RATE INCLUDES EXCAVATOR & OPERATOR)				
P1002	2019 TEREX PREMIER TRAK R-400X	TEREX ROCK CRUSHER	PIDPR40XL0MK80887	
ROLLERS				
R4000	WACKER RT-820 W/B ROLLER (3000 LB.)	WACKER W/B ROLLER	5393094	
R401	1987 CASE 1102PD VIBRATORY ROLLER SHEEP FOOT	VIBRATORY ROLLER	840538200	
R402	1971 RAYGO 400A VIBRATORY ROLLER SMOOTH	VIBRATORY ROLLER	01L-1673	
R403	1997 STONE PD-54 ROLLER SHEEP FOOT	STONE ROLLER	5131340	
R404	1999 DYNAPAC CA152D ROLLER SHEEP FOOT	DYNAPAC ROLLER	64220464	
R4041	2000 STONE SMOOTH DRUM 3100 ROLLER 18HP HONDA	STONE SMOOTH DRUM ROLLER	4200227	
R4042	1995 815 B CAT COMPACTOR	CAT COMPACTOR	17Z01840	
R4043	2007 CAT CP563 SHEEPFOOT COMPACTOR/BLADE	CAT COMPACTOR	LCNT01423	
R4044	2001 CAT CB-2240 DOUBLE DRUM ROLLER	CAT DOUBLE ROLLER	8R200723	
R4045	2009 VOLVO SD100D SMOOTH ROLLER	VOLVO SMOOTH DRUM ROLLER	200940	
R4046	2011 CAT CS56 ROLLER W/ SHELL KIT	CAT ROLLER W/ SHELL KIT	C5S01514	
R4047	2011 CAT CS56 ROLLER W/ SHELL KIT	CAT CS56 ROLLER W/SHELL KIT	C5S01155	
FORKLIFTS				
L7302	2000 HYSTER H110XM FORKLIFT (11,000 LB)	HYSTER FORKLIFT	K005D03106X	
L7304	HYSTER H 350B FORKLIFT	HYSTER FORKLIFT	B019D01933H	
MISC				
M10700	2006 6 1/2" FARM DISK	6 1/2' FARM DISK	1000885182	
M10701	JERSEY SPREADER BOX 103 (EXT. RATE INCLUDES CARRIER)* [D6 DOZER]		2254	
M10702	2018 JOHN DEERE HX6 ROTARY CUTTER	ROTARY CUTTER	1P00HX6CKJP001882	
M10703	2022 LAND PRIDE 15' FOLDING ROTARY CUTTER	ROTARY CUTTER	1903606	
M10704	2022 LAND PRIDE APS1586 ALL PURPOSE SEEDER	ALL PURPOSE SEEDER	1683485	
M10705	2022 LAND PRIDE 90" POWER RAKE	POWER RAKE	1961433	
PUMPS				
M10300	2007 THOMPSON 4" DRY PRIME PUMP W/HOSES	THOMPSON DRY PRIME PUMP	4JSC-102	
M10301	1999 MEYERS - SETH 6" DRY PRIME PUMP	MEYERS SETH DRY PRIME PUMP	220030	
M10302	2011 FLYGT 15HP 2660-180 PUMP ELECTRIC	FLYGT 2660 PUMP ELECTRIC	1140119	
M10303	2011 FLYGT 15HP 2660-180 PUMP ELECTRIC	FLYGT 2660 PUMP ELECTRIC	1130120	
M10304	2011 FLYGT 27HP 2670-180 PUMP ELECTRIC	FLYGT 2670 PUMP ELECTRIC	1140055	
M10305	2012 GODWIN DRY PRIME 6" PUMP	GODWIN DRY PRIME PUMP	12811020-4	
M10306	2012 GODWIN DRY PRIME 6" PUMP	GODWIN DRY PRIME PUMP	12609239-3	
M10307	2013 FLYGT 9HP 2640-181 PUMP ELECTRIC	FLYGT 2640 PUMP ELECTRIC	1370025	
M10308	GODWIN DRI-PRIME 4" PUMP	GODWIN DRY PRIME PUMP	16634460-2	

EQ. #	DESCRIPTION	PROJECT ANALYSIS DESCRIPTION	SERIAL #	PLATE #
OFF-ROAD DUMP TRUCKS				
SRT350	1997 VOLVO A30 C 6X6 ARTICULATED DUMP TRUCK	VOLVO ARTICULATED DUMP TRUCK	A30CV2483	
SRT3501	1999 VOLVO A30 C 6X6 ARTICULATED DUMP TRUCK	VOLVO ARTICULATED DUMP TRUCK	A30CV60132	
SRT3502	2004 VOLVO A40 D 6X6 ARTICULATED DUMP TRUCK	VOLVO ARTICULATED DUMP TRUCK	A40DV11060	
SRT3503	2004 VOLVO A40 D 6X6 ARTICULATED DUMP TRUCK	VOLVO ARTICULATED DUMP TRUCK	A40DV11064	
T2700	2013 IHI CRAWLER DUMP TRUCK	CRAWLER DUMP TRUCK	CA003224	
T2701	2011 VOLVO A40 F 6X6 ARTICULATED DUMP TRUCK	VOLVO ARTICULATED DUMP TRUCK	A40FH0011194	
T2702	2018 VOLVO A35G 6X6 ARTICULATED DUMP TRUCK	VOLVO ARTICULATED DUMP TRUCK	VCEOA35GP00342049	
T2703	2022 K-TEC SCRAPER PAN 1228 (VOLVO ARTICULATED ATTACHMENT)	K-TEC SCRAPER PAN	LKS03535	
ON-ROAD DUMP TRUCKS				
T2500	2006 INTERNATIONAL 7600 TRI-AXLE DUMP TRUCK	7600 TRI-AXLE DUMP TRUCK	1HTWYAHT86J213145	10 A77074
T2501	2006 INTERNATIONAL 7600 TRI-AXLE DUMP TRUCK	7600 TRI-AXLE DUMP TRUCK	1HTWYAHT66J213144	10 A77073
T2502	2007 INTERNATIONAL 5900 TRI-AXLE DUMP TRUCK	5900 TRI-AXLE DUMP TRUCK	1HTXRSC777J468224	10 A77075
T2503	2005 INTERNATIONAL 7600 TRI-AXLE DUMP TRUCK	7600 TRI-AXLE DUMP TRUCK	1HTWYSBT05J003801	10 A77072
T2505	2013 KENWORTH T800 TRI-AXLE DUMP	T800 TRI-AXLE DUMP TRUCK	1NKDX4TX1DJ353374	10 A31268
T2506	2013 KENWORTH T800 TRI-AXLE DUMP	T800 TRI-AXLE DUMP TRUCK	1NKDX4TX3DJ353375	10 A42095
T2507	2014 KENWORTH T370 SINGLE AXLE DUMP TRUCK	T370 SINGLE AXLE DUMP TRUCK	2NKHJ7X0EM394659	10 A36908
T2509	2020 PETERBILT MODEL 567 TRI-AXLE DUMP TRUCK	567 TRI-AXLE DUMP TRUCK	1NPCX4EX5LD649143	10 A74496
T2510	2020 PETERBILT MODEL 567 TRI-AXLE DUMP TRUCK	567 TRI-AXLE DUMP TRUCK	1NPCX4EX7LD649144	10 A74574
WATER TRUCKS				
T2504	2000 FREIGHTLINER 4000 GALLON WATER TRUCK	4000 GALLON WATER TRUCK	1FVXJJC1YHB43526	10 A84402
T2508	2009 FREIGHTLINER 4000 GALLON WATER TRUCK	4000 GALLON WATER TRUCK	1FVHCYB549DAD1834	10 A57305
TRACTORS				
T101	1980 JOHN DEERE 301A UTILITY TRACTOR	JOHN DEERE UTILITY TRACTOR	354695	
T4200	2022 JOHN DEERE 5056E UTILITY TRACTOR	JOHN DEERE UTILITY TRACTOR	1PY5065EVNN117550	
VEHICLES				
V240	2005 INTERNATIONAL 4300 SERVICE TRUCK	INTERNATIONAL SERVICE TRUCK	1HTMNAAM35H690154	08 207807
V2006	2013 CHEVROLET CRUZE	CHEVROLET CRUZE	1G1PA5SH0D7102173	08 052NNJ
V2007	2013 CHEVROLET 1500 EXT CAB 4WD	CHEVROLET TRUCK	1GCRKSE73DZ205400	08 607329
V2009	2014 CHEVROLET 1500 4-DOOR 4WD	CHEVROLET TRUCK	3GCUKSEC4EG159553	08 639347
V2010	2017 CHEVROLET SILVERADO 1500 CREW CAB	CHEVROLET TRUCK	3GCUKREC4HG357286	08 105WSZ
V2011	2021 CHEVROLET SILVERADO 1500 CREW CAB	CHEVROLET TRUCK	1GCUYDED4M2205304	986312
V2012	2022 CHEVROLET SILVERADO 1500	CHEVROLET TRUCK	1BCUDD92515350	C3M678
V2200	2005 CHEVROLET 3500 FLATBED 4WD	CHEVROLET FLATBED TRUCK	1GBJK34225E282023	08 585742
V2202	2005 CHEVROLET 3500 FLATBED 4WD (RITTER COMPANY)	CHEVROLET FLATBED TRUCK	1GBJK34275E282258	08 585741
V2205	2007 CHEVROLET K-3500 AUTO DIESEL POWDER TRUCK	CHEVROLET POWDER TRUCK	1GBJK34627E558352	08 187594
V2212	2009 CHEVROLET 3/4 TON UTILITY TOOL BED	CHEVROLET TOOL TRUCK	1GBHK43639F142166	08 285485
V2219	2014 CHEVROLET 2500 4-DOOR 4WD (WITH TOOL TRAILER)	CHEVROLET TRUCK	1GC1KVC87EF155355	08 640167
V2220	2014 CHEVROLET 2500 4-DOOR 4WD (WITH TOOL TRAILER)	CHEVROLET TRUCK	1GC1KVC82EF155506	08 641817
V2223	2014 CHEVROLET 3/4 TON UTILITY TOOL BED (WITH TOOL TRAILER)	CHEVROLET TOOL TRUCK	1GB1KVC85EF159098	08 643452
V2224	2014 CHEVROLET 3/4 TON UTILITY TOOL BED (WITH TOOL TRAILER)	CHEVROLET TOOL TRUCK	1GB1KVC86EF161443	08 641832
V2227	2015 CHEVROLET 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUE8XFF522794	08 681746
V2228	2015 CHEVROLET 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUE81FF522795	08 681744
V2229	2017 CHEVROLET SILVERADO 2500 CREW CAB 4WD	CHEVROLET TRUCK	1GC1KUEY0HF131135	08 773711
V2230	2017 CHEVROLET SILVERADO 2500 CREW CAB 4WD	CHEVROLET TRUCK	1GC1KUEY5HF131132	08 773712
V2231	2017 CHEVROLET SILVERADO 2500 CREW CAB 4WD	CHEVROLET TRUCK	1GC1KUEY3HF131131	08 773713
V2232	2017 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUEY2HF131139	08 773710
V2233	2017 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUEY0HF131138	08 773709
V2234	2017 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUEY1HF131133	08 784526
V2235	2017 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUEY3HF131134	08 784527
V2236	2017 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUEY7HF131136	08 773714
V2237	2017 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB1KUEY9HF131140	08 784525
V2238	2021 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB4YLEY7MF119732	08 986286
V2239	2021 CHEVROLET SILVERADO 3/4 TON PICK UP	CHEVROLET TRUCK	1GC4YNEY0MF172442	08 986313
V2240	2021 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB4YLEYXMF119577	08 976421
V2241	2021 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB4YLEY8MF120016	08 976420
V2242	2021 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB4YLEY3MF119470	08 976422
V2243	2021 CHEVROLET SILVERADO 1 TON PICK UP (POWDER TRUCK)	CHEVROLET TRUCK	1GC4YTE9MF212859	A1L458
V2244	2022 CHEVROLET SILVERADO 3/4 TON UTILITY TOOL BED	CHEVROLET TRUCK	1GB4YLEY7NF220657	B9C778
V2401	2014 KENWORTH SERVICE TRUCK	SERVICE TRUCK	2NKHJ7X3EM394851	10 A36907
V2402	2017 CHEVROLET 3/4 TON SERVICE BODY	SERVICE BODY	1GB2KUEY1HZ196650	08 772612
V2403	2019 KENWORTH SERVICE TRUCK	SERVICE TRUCK	2NKHJ7X4KM277596	10 A69514
V2404	2018 FORD F-550 PUMP STATION / SERVICE TRUCK	SERVICE TRUCK	1FDUF5HT4JED02998	08 856936
GRAVEL BOXES				
H7-705161	ICM 7 CUBIC YARD GRAVEL BOX	GRAVEL BOX	N/A	
H7-705163	ICM 7 CUBIC YARD GRAVEL BOX	GRAVEL BOX	N/A	
H7-705171	ICM 7 CUBIC YARD GRAVEL BOX	GRAVEL BOX	N/A	

SCOTT & RITTER, INC.

2385 Barren River Road
P.O. Box 749
Bowling Green, KY 42102
Tel: (270) 781-9988
Fax: (270) 782-3267
www.scottandritter.com

Municipal · Commercial · Industrial · Highway Heavy Civil / Utility Contractors

To Whom It May Concern:




The Shareholders hereby appoint Larkin Ritter to be an Officer of the Corporation. The Shareholders designate Larkin Ritter to be the Principal Executive Officer of the Corporation and CEO of the Corporation subject to the control of the vote of the Shareholders. In general, he shall perform all duties incident to the office of the CEO including, but not limited to, executing contracts on behalf of the Corporation and such other duties as may be prescribed by the Shareholders from time to time.

The Shareholders designate David Bayles to be the Vice President of the Corporation subject to the control and the vote of the Shareholders. In general, he shall perform all duties incident to the office of Vice President including, but not limited to, executing contracts on behalf of the Corporation and such other duties as may be prescribed by the Shareholders from time to time.

The Shareholders designate Lucas Ritter to be the Secretary of the Corporation subject to the control and the vote of the Shareholders. In general, he shall perform all duties incident to the office of Secretary including, but not limited to, executing contracts on behalf of the Corporation and such other duties as may be prescribed by the Shareholders from time to time.

In witnesseth whereof, the parties have signed this agreement on this the date and date set opposite their names.

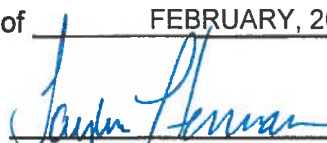
Officers:

 _____ W. Larkin Ritter	Sole Shareholder / CEO	<u>FEBRUARY 1, 2023</u> Date
 _____ David Bayles	Vice President	<u>FEBRUARY 1, 2023</u> Date
 _____ W. Lucas Ritter	Secretary	<u>FEBRUARY 1, 2023</u> Date
<u>N/A</u> _____	Chairman of the Board	

Commonwealth of Kentucky

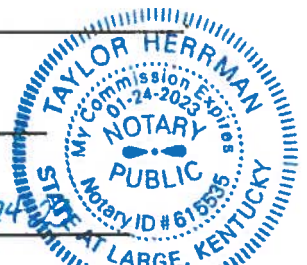
County of Warren

Subscribed and Sworn to before me on this 1ST day of FEBRUARY, 2023



Notary Public

My Commission expires: 1-24-2023





Certificate No.

A - 2022

00889

Certificate of Eligibility

Issued By

Commonwealth of Kentucky

Transportation Cabinet

This certifies that **SCOTT AND RITTER INC**

PO BOX 749

BOWLING GREEN, KY 42102

is hereby qualified to accept a contract or subcontract on projects of the Department of Highways for such a period as uncompleted work under prime contract at any time does not exceed the aggregate amount of **\$116,351,178**. This certificate which expires **December 31, 2022** is subject to revision or revocation, and is extended to 120 days from this expiration date. An application for renewal of this certificate must be filed within ninety days after the above date.

Types of Work

- A GRADE AND DRAIN
- I27 DEMOLITION
- I33 UTILITIES
- J44 MECHANICAL

Date Issued: **April 25, 2022**

By

State Highway Engineer
Department of Highways

SCOTT & RITTER, INC.
SIMILAR PROJECTS COMPLETED

JOB NAME / LOCATION	CONTRACT AMT	OWNER / GENERAL CONTRACTOR ADDRESS / PHONE #	CONTACT PERSON COMPANY PHONE #	ENGINEER ADDRESS PHONE #	CONT DATE	DATE COMPL	TYPE OF WORK
CUNNINGHAM/EAST MONTGOMERY HIGH SERVICE PUMP CLARKSVILLE, TN	\$466,000.00	CUNNINGHAM/EAST MONT UTILITY DISTRICT 5195 HIGHWAY 41-A SOUTH CLARKSVILLE, TN 37043	BOBBY GIBBS	JAMES C HAILEY 1619 GALLERIA BOULEVARD BRENTWOOD, TN 37027 MATT TUCKER 615-883-4933	10/2/2020	7/1/2022	P.S./MECH
PUMP STATION UPGRADES & RELOCATION - KELLY VANCE / LOUISVILLE RD & GREENWOOD BOWLING GREEN, KY	\$1,478,825.00	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	RYAN LEISEY 270-793-2435 RYANL@WARRENWATER.COM	WCWD 523 US HWY 31-W BYPASS BOWLING GREEN, KY 42101	4/3/2020	6/1/2022	P.S./MECH
LOGAN TODD CONTRACT 4 ADAMS WATER TANK ADAMS, TN	\$532,325.00	PHOENIX FABRICATORS & ERECTORS, LLC 182 S. COUNTY ROAD 900 EAST AVON, IN 46123	MATT HARRIS 270-318-1215 270-577-3009 MATT.HARRIS@PHOENIXTANK.COM	MCGHEE ENGINEERING, INC 202 EWING ST GUTHRIE, KY42234 270-426-9142 MIKE MCGHEE	7/12/2018	8/18/2020	P.S./ MECH
BGMU ALTERNATIVE DISINFECTION FEED SYSTEM BOWLING GREEN, KY	\$5,681,820.00	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101	BGMU 801 CENTER STREET BOWLING GREEN, KY 42101 BRETT JONES 270-782-1200	SMITH SECKMAN REID, INC 2995 SIDCO DRIVE NASHVILLE, TN 37204 LINDSAY BRYANT 615-383-1113	2/14/2017	5/29/2019	P.S./ MECH

Larkin Ritter

President/CEO
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
lritter@scottandritter.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **46 YEARS**

September 1983-Present

Scott & Ritter, Inc.
Bowling Green, KY

President/CEO

General Management of 5M - 35M Annual Sales Including:

- Pure Utility Construction
- KY DOT Drainage and Utility Relocation Projects
- Water / Wastewater Treatment Plant Construction / Modification
- Site Development
- Precision Blasting
- Subdivision Development
- Demolition
- Design Build
- Road Construction Projects
- Value Engineering

Work Includes both Subcontract and General Contract Work

August 1978-September 1983

Utility Division Manager:

- Bid & Manage all Utility Related Work Within Multi Discipline Regional Construction Company

May 1976 – August 1978

Bowling Green Municipal Utilities
Water – Sewer Division

Superintendent of Engineering

- General Manager Water/Sewer Engineering Division

August 1975 – August 1976

Western Kentucky University
Civil Engineering Technology Dept

Associate Instructor

- Civil/Environmental Course Work

RELATED ACTIVITIES

- Bowling Green/Warren County Planning Commission
- Commission Member 1991-Present
- Personnel Committee
- Budget Committee
- Subdivision Regulations Rewrite
- Storm Water Advisory Committee
- 2009 Comprehensive Plan Re-Write
- Developer of Multiple Residential & Commercial Developments in South Central Kentucky Area & Central Tennessee

EDUCATION

1975

Western Kentucky University Bowling Green, KY
B.S., Civil Engineering Technology

CERTIFICATES / LICENSES

E.I.T (Civil) Commonwealth of Kentucky

David Bayles

Vice President
Mechanical Division Project Manager, Safety Officer
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
dbayles@scottandritter.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **35 YEARS**

May 1987 - Present

Scott & Ritter, Inc.
Bowling Green, KY

Project Manager

Management of Construction Projects Including:

- Drainage Piping and Structures
- Utility Relocation
- Site Development for Commercial & Residential Projects
- Water and Wastewater Treatment Plant Projects
- Pump Stations / Mechanical Projects
- Utility Relocation and Storm Sewer Installation for Local and Regional Municipalities

Specific Areas of Interest:

- Areas of tedious field operations including College Campuses and Hospital Sites
- Design-Build Projects for underground utilities
- Projects \$1,000 - \$5.0 million
- Municipal Emergency Response

NOTABLE PROJECTS

BGMU WTP Flocculation / Sedimentation Basins – Project Manager – Remove and Replace Existing Drive Units.

BGMU Wilkinson Trace Pump Station Rehabilitation – Project Manager – Overhaul Pump Station.

BGMU Pascoe Boulevard Pump Station – Project Manager – Overhaul Pump Station.

BGMU Backwash Improvements – Project Manager – Install New Backwash Pumps and Piping.

BGMU Lovers Lane / Cave Mill Road – Project Manager – Design-Build Sanitary Sewer, Pump Station, and Force Main Project.

BGMU Church Street Manhole Collapse – Project Manager – Emergency Repair.

BGMU Jennings Creek Pump Station Repair – Project Manager – Emergency Repair.

BGMU Glen Lily Road 42" Sewer Collapse – Project Manager – Emergency Repair.

BGMU Andrea Street & Karen Circle Manhole Collapse – Project Manager – Emergency Repair.

S K I L L S

Field Lay-Out

Bidding & Estimating

Project Management

Field Supervision

Design-Build

Emergency Work

F I E L D O F E X P E R T I S E

Municipal Water Sewer and Underground Electric Installation • Field Lay-Out • Earthwork • Storm Drainage • Water and Wastewater Treatment Facilities • Water and Wastewater Pumping Stations

E D U C A T I O N

1987 Western Kentucky University – Bowling Green, KY

 B.S. Civil Engineering Technology

Luke Ritter

Secretary / Project Manager / Estimator
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
lukeritter@scottandritter.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: 25 YEARS

August 1997-Present

Scott & Ritter, Inc.

Bowling Green, KY

Estimator

Estimating of Civil Construction Projects including:

- Preliminary Budgets
- Final Budgets
- Design / Build of Commercial and Industrial Projects
- Internal Project Estimating for Competitive Bids

Project Manager

Management of Civil Construction Projects including:

- Water, Sewer, Gas, Electrical, Earthwork, Storm Sewer Projects, Blasting
- Site Development for Commercial & Residential Projects
- Wastewater & Water Treatment Plant Projects
- Municipal Utility Relocation Projects
- Projects \$1,000 - \$5.0 million

Engineering Aid

- Aided in various Field Layout Operations
- Field Supervision of Heavy Utility Construction
- Assisted with Estimating Site-work Projects

S K I L L S

Field Lay-Out

Bidding & Estimating

Project Management

Field Supervision

Design-Build

Emergency Work

EDUCATION

2002 Western Kentucky University Bowling Green, KY
B.S. Civil Engineering Technology/Construction Management

Eric Carter

Project Manager, Estimator
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
ecarter@scottandritter.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **36 YEARS**

1986 - Present

Scott & Ritter, Inc.
Bowling Green, KY

Project Manager

Management of Construction Projects Including:

- Drainage Piping and Structures
- Utility Relocation
- Site Development for Commercial & Residential Projects
- Water and Wastewater Treatment Plant Projects
- Pump Stations / Mechanical Projects
- Utility Relocation and Storm Sewer Installation for Local and Regional Municipalities

Specific Areas of Interests:

- Areas of tedious field operations including college campuses and hospital sites
- Design-Build Projects for underground utilities
- Projects \$1,000 - \$5,000,000 million
- Municipal Emergency Response

NOTABLE PROJECTS

HWEA Highway 272 Sewer – Project Manager – Sanitary Sewer Relocation.

Brownsville Papa Court – Project Manager – Sanitary Sewer Installation.

Campbell Lane Utility Relocation – Project Manager – Complete Utility Relocation for Road Widening.

SKILLS

Field Lay-Out

Bidding & Estimating

Project Management

Field Supervision

Design-Build

Emergency Work

FIELD EXPERTISE

Municipal Water Sewer and Underground Electric Installation • Field Lay-Out • Earthwork • Storm Drainage • Water and Wastewater Treatment Facilities • Water and Wastewater Pumping stations

EDUCATION

1981

Western Kentucky University

Civil Engineering Technology

Frankie McCloud

Foreman / Superintendent / Project Manager
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
fmcccloud@scottandritter.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **21 YEARS**

2008 - Present

Scott & Ritter, Inc.
Bowling Green, KY

Project Manager/General Superintendent

Management of Construction Projects Including:

- Drainage Piping and Structures
- Utility Relocation
- Site Development for Commercial & Residential Projects
- Areas of tedious field operations including College Campuses and Hospital Sites
- Utility Relocation and Storm Sewer Installation for Local and Regional Municipalities
- Projects \$1000 – \$4.0 million
- Municipal Emergency Response

2008 – 2016

Scott & Ritter, Inc.
Bowling Green, KY

Foreman/Superintendent

Supervise Crews in the areas of:

- Underground Utility Construction / Relocation
- Site Development / Demolition
- Drainage Projects

2005 – 2008

Cumberland Pipeline
Russell Springs, KY

Foreman

Supervise Crews in the areas of:

- Water and Sewer Installation
- Utility Construction
- Horizontal Bore & Jacking
- Storm Drainage Installation

2003 – 2005

Kenvirons Engineering
Frankfort, KY

Project Inspector

Inspect Work of Contractors in the areas of:

- Water, Sewer and Gas Installation
- Utility Construction
- Storm Drainage Installation
- Insure Quality Work in reference to details and specifications of projects

2001 – 2003

Parsons Construction
London, KY

Pipe Layer / Operator

- Water and Sewer Pipe Installation
- Heavy equipment operator

S K I L L S

Field Lay-Out

Project Management

Field Supervision

Design-Build

Emergency Work

Grade Calculation

Project Planning

Coordination with other trades

Equipment Use / Maintenance

F I E L D O F E X P E R T I S E

Utility Construction • Site Development • Demolition • Drainage Projects • Utility Relocation on
Grade/Drain Projects • Relocation of Water & Sewer Lines on State Highways.

C E R T I F I C A T I O N S

- Blueprint Reading Classes – Associated Builders and Contractors
- Erosion Prevention & Sediment Control Certified Contractor – City of Bowling Green, KY
- CPR/BBP

Adam Ritter

Project Manager, Field Superintendent
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
aritter@scottandritter.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **14 YEARS**

September 2012 - Present

Scott & Ritter, Inc.

Bowling Green, KY

Project Manager Mechanical Division

Management of Civil Construction Projects Including:

- Water, Sewer, Mechanical and Earthwork
- Site Development for Commercial Projects
- Wastewater and Water Treatment Plant Projects

Engineering Aid

- Aided in various Field Layout Operations
- Field Supervision of Heavy Utility Construction
- Assisted with Estimating Mechanical Projects

May 2009 – September 2012

Scott & Murphy, Inc

Bowling Green, KY

Lead Carpenter

Management of Bridge Construction Projects Including:

- Layout Operations
- Bridge Construction and Demolition
- Bridge Repair

Concrete Finisher / Laborer

- Concrete Forming, Pouring and Finishing
- Deep Foundation Construction
- Reinforcing Steel Placement

September 2001 – January 2006

United States Army

Infantry Fire Team Leader

- Combat Tour 2004 - 2005
- Air Assault School
- Expert Infantryman Badge
- Combat Infantryman Badge
- Combat Life Saver Qualified
- Multiple Army Commendation Medals
- Multiple Army Achievement Medals

S K I L L S

Field Lay-Out

Bidding & Estimating

Project Management

Field Supervision

Design-Build

Emergency Work

E D U C A T I O N

2010

Western Kentucky University Bowling Green, KY

B.S. Construction Management

C E R T I F I C A T I O N S

Current Certification for CPR, First Aid and Blood Borne Pathogens

Current Certification for Crane Rigging /Signaling

Dale Coots

Mechanical Division Superintendent
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988

WORK EXPERIENCE

1995 - Present

Scott & Ritter, Inc.
Bowling Green, KY

Foreman/Superintendent

- Water and wastewater plant projects
- Utility Construction
- Site Development
- Demolition
- Drainage Projects
- Utility Relocation on Grade/Drain Projects
- Relocation of Water and Sewer Lines on State Highways

NOTABLE PROJECTS

BGMU Backwash Improvements – Project Manager – Install New Backwash Pumps and Piping

BGMU Jennings Creek Pump Station Repair – Project Manager – Emergency Repair

BGMU WTP Flocculation / Sedimentation Basins – Project Manager – Remove and Replace Existing Drive Units.

SKILLS

Pump Station and Plant Mechanical Work

Field Supervision

Grade Calculation

Project Planning

Coordination with Other Trades

Equipment Use / Maintenance

Emergency Work

FIELD EXPERTISE

Municipal Water Sewer and Underground Electric Installation • Field Lay-Out • Earthwork and Storm Drainage • Water and Wastewater Treatment Facilities • Water and Wastewater Pumping Stations

James Jackson

9/28/2017

Foreman / Supervisor
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988

CERTIFICATIONS

Class 3 Water Treatment Plant Operator

Class 3 Distribution

CPR & BBP Certified

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: 35 YEARS

2014 - Present

Scott & Ritter, Inc.
Bowling Green, KY

Foreman / Superintendent

Supervise Crews in the areas of:

- Underground Utility Construction / Relocation
- Site Development
- Demolition
- Drainage Projects

2010 - 2014

Armstrong Cole
Madisonville, KY

Plant Operator

Supervise Plant Operations

2003 - 2010

Scott & Ritter, Inc.
Bowling Green, KY

Foreman / Pipe layer

In charge of pipe installation:

- Calculating grade
- Setting up instruments and lasers
- Some equipment operation
- Running crew when foreman not on site

1987 – 2003

City of Eddyville Water Department
Eddyville, KY

Plant Operator

Mitch Selvidge

5/15/2017

Foreman / Supervisor
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988

FIELD EXPERTISE

Utility Construction, Site Development, Demolition, Drainage Projects, Utility Relocation on Grade/Drain Projects, Relocation of Water & Sewer Lines on State Highways, Concrete/Blacktop, Pipe Bursting

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **28 YEARS**

2005- Present

Scott & Ritter, Inc.
Bowling Green, KY

Foreman / Supervisor

Supervise Crews in the areas of:

- Underground Utility Construction / Relocation
- Site Development
- Demolition
- Drainage Projects

2002 – 2005

Scott & Ritter, Inc.
Bowling Green, KY

Operator

Operating various pieces of heavy equipment:

- Lead crew when foreman not on site
- Also filled in for pipe layer or laborer when needed
- Maintained equipment condition to peak standards

1997 - 2002

Portland Utilities
Portland, TN

Pipe Bursting Foreman

Managed jobs for Municipals:

- Coordinating man power and work on job sites
- Ordering necessary materials for job
- Setting Wenches
- Fusing Pipe
- Dewatering lakes and managing water levels for projects

1995 - 1997

MAC Construction
Newport, IN

Heavy Equipment Operator

Operated various heavy equipment:

- Maintained and operated Dozers, Excavators, Back Hoe etc.
- Pipeline installation
- Trench work

S K I L L S

Field Supervision

Grade Calculation

Read Plans

Project Planning

Coordination with Other Trades

Equipment Use / Maintenance

OSHA Certified Competent Person

Joshua Harvey

APRIL 30, 2020

Foreman / Field Superintendent
2385 Barren River Road
Bowling Green, KY 42101
270-781-9988
joshscottandritter@yahoo.com

WORK EXPERIENCE

TOTAL NUMBER OF YEARS: **14 YEARS**

2016 - Present

Scott & Ritter, Inc.
Bowling Green, KY

Foreman/Field Supervisor/Heavy Equipment Operator

Management of Construction Projects Including:

- Drainage Piping and Structures
- Utility Relocation
- Site Development for Commercial & Residential Projects
- Areas of tedious field operations including College Campuses and Hospital Sites
- Utility Relocation and Storm Sewer Installation for Local and Regional Municipalities
- Projects \$1000 – \$1.4 million
- Municipal Emergency Response
- Underground Utility Construction / Relocation
- Site Development / Demolition
- Drainage Projects
- Dress-Up / Clean-Up
- Horizontal / Directional Boring

2014 – 2016

Cleary Construction
Tompkinsville, KY

Heavy Equipment Operator/Pipe Layer

- Underground Utility Construction / Relocation
- Heavy Equipment Operator / Maintenance
- Strict Installation Guides and Testing Procedures

2012 – 2014

Thoroughbred Construction
Bowling Green, KY

Foreman/Laborer

Supervise Crews in the areas of:

- New Construction of Commercial and Residential Housing
- Remodeling Existing Houses and Businesses
- Construction and Quality

2006 – 2012

Scott & Ritter, Inc.
Bowling Green, KY

Pipe Layer/Laborer

- Water, Sewer and Storm Sewer Installation
- Tie-Ins for Utility Relocations

S K I L L S

Field Lay-Out

Project Management

Field Supervision

Design-Build

Emergency Work

Grade Calculation

Project Planning

Coordination with other trades

Equipment Use / Maintenance

F I E L D O F E X P E R T I S E

Utility Construction • Site Development • Demolition • Drainage Projects • Utility Relocation on Grade/Drain Projects • Relocation of Water & Sewer Lines on State Highways.

C E R T I F I C A T I O N S

- Blueprint Reading Classes – Associated Builders and Contractors
- CPR/BBP
- Supervisor Training Classes
- Competent Person Training Classes
- Hydraulic and Pneumatic
- Multiple Trenching and Excavation Safety Classes



OSHA's Form 300 (Rev. 01/2004)

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2022

U.S. Department of Labor Occupational Safety and Health Administration

Log of Work-Related Injuries and Illnesses

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Form approved OMB no. 1218-0176

Establishment name

Scott & Ritter, Inc.

City Bowling Green

State

KY

Classify the case

Describe the case

Identify the person

Table with columns: (A) Case No., (B) Employee's Name, (C) Job Title, (D) Date of injury or onset of illness, (E) Where the event occurred, (F) Describe injury or illness, (G) Death from work, (H) Days away from work, (I) Job transfer or restriction, (J) Remained at work, (K) Away from work, (L) On job transfer or restriction, (M) Check the "injury" column or choose one type of illness: Injury, Skin Disorder, Respiratory Condition, Poisoning, Hearing Loss, All other illnesses.

Page totals

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.



Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0 (G)	2 (H)	0 (I)	0 (J)

Number of Days	Total number of days away from work	Total number of days of job transfer or restriction
123 (K)	0 (L)	

Injury and Illness Types	(1) Injury	(2) Skin Disorder	(3) Respiratory Condition	(4) Poisoning	(5) Hearing Loss	(6) All Other Illnesses
Total number of... (M)	2	0	0	0	0	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3544, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name Scott & Ritter, Inc.
 Street 2385 Barren River Rd City Bowling Green State KY Zip 42101
 Industry description (e.g., Manufacture of motor truck trailers)
Heavy civil/utility construction
 Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
1 6 2 3
 OR North American Industrial Classification (NAICS), if known (e.g., 336212)
2 3 7 1 1 0

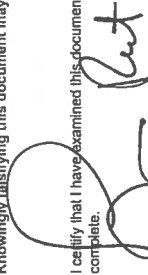
Employment information

Annual average number of employees 73
 Total hours worked by all employees last year 149,447

Sign here

Knowing falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.


 Company executive
270-781-9988 Phone
1/25/23 Date
 Title CEO



Log of Work-Related Injuries and Illnesses

Year 2021

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

Establishment name Scott & Ritter, Inc.

City Bowling Green State KY

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Identify the person			Describe the case				Classify the case				Enter the number of days the injured or ill worker was:						Check the "injury" column or choose one type of illness.										
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	(G) Death	(H) Days away from work	(I) Job transfer or restriction	(J) Remained at work	(K) Other recordable cases	(L) On job transfer or restriction (days)	(M) Injury	(1) Injury	(2) Skin Disorder	(3) Respiratory Condition	(4) Poisoning	(5) Hearing Loss	(6) All other illnesses									
1	Michael Wood	Operator	1/7/21	Crown, Cork & Seal - Bowling Green, KY	Pipe saw kicked back and cut chin.				X			X															
2	Kevin Cox	Laborer	3/4/21	Springfield, TN - Phase 2C Constructed Overflow	Hand caught by moving pipe and smashed ring finger and pinky.	X				42		X															
3	Tyler Skipworth	Laborer	4/19/21	9693 Preston Highway, Lebanon Junction, KY	Consussion caused by truck being rear ended (other driver's fault)	X				4		X															
Page totals												0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3944, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.



OSHA's Form 300A (Rev. 01/2004)

Year 2021

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0178

Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases			
Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0 (G)	2 (H)	0 (I)	1 (J)

Number of Days	
Total number of days away from work	Total number of days of job transfer or restriction
46 (K)	0 (L)

Injury and Illness Types		
Total number of... (M)	(1) Injury	(4) Poisoning
	3	0
	0	0
	0	0
	0	0
	0	0
	0	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3944, 200 Constitution Ave. NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information

Your establishment name Scott & Ritter, Inc.

Street 2385 Barron River Rd

City Bowling Green State KY Zip 42101

Industry description (e.g., Manufacture of motor truck trailers)
Heavy civil construction, utility and silvework

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

OR North American Industrial Classification (NAICS), if known (e.g., 336212)
1 6 2 3
2 3 7 1 1 0

Employment information

Annual average number of employees 73

Total hours worked by all employees last year 144,066

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.


Company executive

CEO
Title

270-781-9988 Phone
1-12-22 Date



OSHA's Form 300A (Rev. 01/2004) Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete. Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0 (G)	1 (H)	0 (I)	2 (J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
96 (K)	0 (L)

Injury and Illness Types

Total number of... (M)	(1) Injury	(2) Skin Disorder	(3) Respiratory Condition	(4) Poisoning	(5) Hearing Loss	(6) All Other Illnesses
	3	0	0	0	0	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Establishment information	
Your establishment name	Scott & Ritter, Inc.
Street	2385 Barren River Rd
City	Bowling Green
State	KY
Zip	42101
Industry description (e.g., Manufacture of motor truck trailers) Heavy civil construction, utility and sitework	
Standard Industrial Classification (SIC), if known (e.g., SIC 3715) 1 6 2 3	
OR North American Industrial Classification (NAICS), if known (e.g., 336212) 2 3 7 1 1 0	
Employment information	
Annual average number of employees	71
Total hours worked by all employees last year	143,682
Sign here	
I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.	
	CEO
Company executive	
270-781-9988	1/12/21
Phone Date	



Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete. Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

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Number of Cases		
Total number of deaths	Total number of cases with days away from work or restriction	Total number of other recordable cases
0 (G)	4 (H)	0 (J)

Number of Days	
Total number of days away from work	Total number of days of job transfer or restriction
6 (K)	0 (L)

Injury and Illness Types						
Total number of... (M)	(1) Injury	(2) Skin Disorder	(3) Respiratory Condition	(4) Poisoning	(5) Hearing Loss	(6) All Other Illnesses
	0	4	0	0	0	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

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Establishment information

Your establishment name Scott & Ritter, Inc.

Street 2395 Barren River Road

City Bowling Green State Kentucky Zip 42101

Industry description (e.g., Manufacture of motor truck trailers)
Heavy construction, utility and silviculture

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)

1 6 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 330212)

2 3 7 1 1 0

Employment information

Annual average number of employees 67

Total hours worked by all employees last year 141,805

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.


Company executive

CEO

Title

1/14/2020

Date

270-781-9938

Phone



OSHA's Form 300A (Rev. 01/2004)

Year 2018

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

Summary of Work-Related Injuries and Illnesses

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

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Number of Cases			
Total number of deaths	Total number of cases away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0 (G)	4 (H)	0 (I)	0 (J)

Number of Days	
Total number of days away from work	Total number of days of job transfer or restriction
81 (K)	1 (L)

Injury and Illness Types						
Total number of... (M)	(1) Injury	(2) Skin Disorder	(3) Respiratory Condition	(4) Poisoning	(5) Hearing Loss	(6) All Other Illnesses
	4	0	0	0	0	0

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

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Establishment Information

Your establishment name Scott & Ritter, Inc.
 Street 2385 Barron River Road
 City Bowling Green State Kentucky Zip 42101

Industry description (e.g., Manufacture of motor truck trailers)
Heavy construction, utility and silvework

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
1 6 1 1
 OR North American Industrial Classification (NAICS), if known (e.g., 336212)
2 3 7 1 1 0

Employment Information

Annual average number of employees 66
 Total hours worked by all employees last year 109,340

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

[Signature]
 Company executive
 Title CEO
 Date Jan 22 2019

Phone 270-781-9988

BID BOND

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

BIDDER (Name and Address): SCOTT & RITTER, INC.
P.O. BOX 749
BOWLING GREEN, KY 42102-0749

SURETY (Name, and Address of Principal Place of Business):
Western Surety Company
151 N Franklin St. Chicago, IL 60606

OWNER (Name and Address): Grayson County Water District
21 Shull White Road
Leitchfield, Kentucky 42754

BID
Bid Due Date: WEDNESDAY, FEBRUARY 1, 2023
Description: Water Treatment Plant Improvements.

BOND
Bond Number:
Date: 2/1/23
Penal sum _____ 5% of amount bid _____ \$ _____ 5% of amount bid _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER
SCOTT & RITTER, INC. (Seal)

SURETY
Western Surety Company (Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: [Signature]
Signature

By: [Signature]
Signature (Attach Power of Attorney)

LARKIN RITTER
Print Name

LaKala Carter
Print Name

CHIEF EXECUTIVE OFFICER
Title

Attorney-in-Fact
Title

Attest: [Signature]
Signature TOMMY BLACKFORD

Attest: [Signature]
Signature

Title CONTRACTS ADMINISTRATOR

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and

assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Charles Cecil Martin, Melissa Propst, Bruce A Barrick, LaKala Carter, Individually

of Bowling Green, KY, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 24th day of June, 2021.



WESTERN SURETY COMPANY

Paul T. Bruflat
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 24th day of June, 2021, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota, that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument, that he knows the seal of said corporation, that the seal affixed to the said instrument is such corporate seal, that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

March 2, 2026



M. Bent
M. Bent, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 1st day of Feb 2023



WESTERN SURETY COMPANY

L. Nelson
L. Nelson, Assistant Secretary

Form F4280-7-2012

Go to [***.cnasurety.com](http://www.cnasurety.com) > Owner / Oblige Services > Validate Bond Coverage, if you want to verify bond authenticity.

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.













COMPLIANCE STATEMENT

This statement relates to a proposed contract with Grayson County Water District

(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. I have, have not, participated in a previous contract or subcontract subject to Executive 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I have, have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

If the proposed contract is for \$50,000 or more and I have 50 or more employees, I also represent that:

3. I have, have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, I have, have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the RHS, RBS or RUS, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods): (See Reverse).

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays the valid OMB control number. The valid OMB control number for this information collection is 0575-0018. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR
CERTIFICATIONS OF NON-SEGREGATED FACILITIES**

A certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, may 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$ 10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Date FEBRUARY 1, 2023

A handwritten signature in black ink, appearing to read "Larkin Ritter", written over a horizontal line.

(Signature of Bidder or Prospective Contractor)

LARKIN RITTER, CHIEF EXECUTIVE OFFICER

SCOTT & RITTER, INC.
P.O. BOX 749, BOWLING GREEN, KY 42102-0749

Address (including Zip Code)

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant or Federal loan, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant or loan.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant or loan, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.



(name)

LARKIN RITTER

FEBRUARY 1, 2023

(date)

CHIEF EXECUTIVE OFFICER

(title)

oOo

U.S. DEPARTMENT OF AGRICULTURE

**Certification Regarding Debarment, Suspension, Ineligibility
and Voluntary Exclusion - Lower Tier Covered Transactions**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Grayson County Water District

EAST-WEST INTERCONNECT PROJECT - PHASE 2 -
CONTRACT NO. 7 - WATER TREATMENT PLANT IMP.

Organization Name

PR/Award Number or Project Name

LARKIN RITTER, CHIEF EXECUTIVE OFFICER

Name(s) and Title(s) of Authorized Representative(s)



Signature(s)

FEBRUARY 1, 2023

Date

Instructions for Certification

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," without modification, in all lower tier covered transaction and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

NOTICE OF AWARD

Date of Issuance:

Owner: Grayson County Water District Owner's Contract No.: No. 7
Engineer: Kentucky Engineering Group, PLLC Engineer's Project No.: 20016
Project: East – West Interconnect Project – Contract Name: Water Treatment Plant
Phase 2 - Water Treatment Plant Improvements Project
Improvements Project

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:

Water Treatment Plant Improvements

The Contract Price of the awarded Contract is: \$

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

a set of the Drawings will be delivered separately from the other Contract Documents.

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.
3. Other conditions precedent (if any):

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: Grayson County Water District

Authorized Signature

By:

Title:

Copy: Engineer

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

THIS AGREEMENT is by and between Grayson County Water District (“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 as follows:

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Contract No. 7 - Water Treatment Plant Improvements** consisting of one (1) new carbon adsorption vessel, three (3) new high service pumps, security fence, associated piping, valves, electrical, instrumentation and all related appurtenances as shown on the DRAWINGS

ARTICLE 3 – ENGINEER

- 3.01 The part of the Project that pertains to the Work has been designed by Kentucky Engineering Group, PLLC.
- 3.02 The Owner has retained Kentucky Engineering Group, PLLC (“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 420 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 450 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 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 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 completed.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. 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 on or about the TBD day of each month during performance of the Work as 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. 95 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. 100 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 150

percent 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 bear interest at the rate of 3.5 percent per annum.

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 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.
- E. 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.
- F. 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.
- G. 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.
- H. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

- I. 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 11, inclusive).
2. Performance bond (pages 1 to 3, inclusive).
3. Payment bond (pages 1 to 3, inclusive).
4. Other bonds.
 - a. (pages to , inclusive).

NOTE(S) TO USER:

Such other bonds might include maintenance or warranty bonds intended to manage risk after completion of the Work.

5. General Conditions (pages 1 to 73, inclusive).
 6. Supplementary Conditions (pages 1 to 8, inclusive).
 7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings (not attached but incorporated by reference) consisting of sheets with each sheet bearing the following general title: Water Treatment Plant UV Reactor Improvements **[or]** the Drawings listed on the attached sheet index.
 9. Addenda (numbers 1 to 2, inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages to , inclusive).
 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Change 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.

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.

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:

CONTRACTOR:

Grayson County Water District

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

21 Shull White Road

Leitchfield, KY 42754

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

NOTICE TO PROCEED

Owner:	Grayson County Water District	Owner's Contract No.:	No. 7
Contractor:		Contractor's Project No.:	
Engineer:	Kentucky Engineering Group, PLLC	Engineer's Project No.:	21006
Project:	East – West Interconnect Project – Phase 2 - Water Treatment Plant Improvements Project	Contract Name:	Water Treatment Plant Improvements Project
		Effective Date of Contract:	

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on _____. *[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 420, and the number of days to achieve readiness for final payment is 450.

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner: Grayson County Water District

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

SECTION 00600

INSURANCE CERTIFICATE

Certificate of Insurance shall be provided in accordance with:

OWNER'S MINIMUM INSURANCE REQUIREMENTS

The Contractor at its expense shall procure and shall maintain the insurance required in this Contract and to be provided by the Contractor. The Contractor shall require each subcontractor to procure and maintain the insurance required by this Contract and to be provided by subcontractors. At a minimum, the following insurance

Limits shall be procured:

General Liability – Commercial General Liability

Limits of Insurance - \$2,000,000 general aggregate
 \$2,000,000 products & completed operations aggregate
 \$1,000,000 personal & advertising
 \$1,000,000 each occurrence

Automobile Liability – All Owned, Non-owned & Hired vehicles

Limits of Liability - \$1,000,000 per accident

Excess or Umbrella Liability

Limits of Liability - \$2,000,000

Workmen's Compensation – Statutory Coverage in each state of operations or “all states” coverage

Limits of Liability - \$100,000 each accident bodily injury
 \$500,000 policy limit bodily injury by disease
 \$100,000 each employee bodily injury by disease

Description of Operations

Grayson County Water District and Kentucky Engineering Groups, PLLC must be added to the Commercial General Liability policy as an additional insured by Standard Endorsements CG 2010(11-85) and CG 2037 or their equivalents.

All policies, except workers compensation, shall include a waiver of subrogation.

Certificate Holder

Must list: Grayson County Water District
 21 Shull White Rd
 Leitchfield, Kentucky 42754

Cancellation

Thirty (30) days prior written notice is required.

Builders Risk/Installation Floater

May be required in an amount equal to the contract. If above ground structures are involved in the Contract, this is required.

END OF SECTION



PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

Grayson County Water District
21 Shull White Road
Leitchfield, Kentucky 42754

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

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

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

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

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

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

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

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

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

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the

Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

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

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

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

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

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated

obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

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

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

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

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

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been

made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

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

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

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

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

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

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*

Grayson County Water District
21 Shull White Rd
Leitchfield, Kentucky 42754

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract

or to related subcontracts, purchase orders, and other obligations.

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

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

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

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

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

7. The total amount of previous payments received by the Claimant; and

8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

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

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

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

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

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

18. Modifications to this Bond are as follows:



Contractor's Application for Payment No.

	Application Period:	Application Date:
To (Owner): Grayson County Water District	From (Contractor):	Via (Engineer): Kentucky Engineering Group, PLLC
Project: Water Treatment Plant Improvements	Contract: No 7	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.: 20016

**Application For Payment
Change Order Summary**

Approved Change Orders			1. ORIGINAL CONTRACT PRICE.....	\$ _____
Number	Additions	Deductions	2. Net change by Change Orders.....	\$ _____
			3. Current Contract Price (Line 1 ± 2).....	\$ _____
			4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates).....	\$ _____
			5. RETAINAGE:	
			a. X Work Completed.....	\$ _____
			b. X Stored Material.....	\$ _____
			c. Total Retainage (Line 5.a + Line 5.b).....	\$ _____
			6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c).....	\$ _____
			7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application).....	\$ _____
			8. AMOUNT DUE THIS APPLICATION.....	\$ _____
			9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above).....	\$ _____
TOTALS				
NET CHANGE BY CHANGE ORDERS				

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(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 the Work covered by prior Applications for Payment;

(2) Title to 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 the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor Signature

By: _____ Date: _____

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

is recommended by: _____ (Date)
Kentucky Engineering Group, PLLC

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

is approved by: _____ (Date)
Grayson County Water District

Approved by: _____ (Date)

Change Order No. _____

Date of Issuance:
 Owner: Grayson County Water District
 Contractor:
 Engineer: Kentucky Engineering Group, PLLC
 Project: Water Treatment Plant
 Improvements

Effective Date:
 Owner's Contract No.: No 7
 Contractor's Project No.:
 Engineer's Project No.: 20016
 Contract Name:

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

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
 Title: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Grayson County Water District	Owner's Contract No.:	No 7
Contractor:		Contractor's Project No.:	
Engineer:	Kentucky Engineering Group, PLLC	Engineer's Project No.:	20016
Project:	Water Treatment Plant Improvements	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: _____	By: _____	By: _____	By: _____
(Authorized signature)	Owner (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)	Contractor (Authorized Signature)	Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____	Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____	Date: _____	Date: _____	Date: _____

CERTIFICATE OF OWNER'S ATTORNEY AND AGENCY CONCURRENCE

CERTIFICATE OF OWNER'S ATTORNEY

PROJECT NAME: Contract 7 – Water Treatment Plant Improvements

CONTRACTOR NAME:

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows: I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Name Date

AGENCY CONCURRENCE

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

Agency Representative Date

Name

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



Endorsed by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

To prepare supplementary conditions that are coordinated with the General Conditions, use EJCDC's Guide to the Preparation of Supplementary Conditions (EJCDC® C-800, 2013 Edition). The full EJCDC Construction series of documents is discussed in the Commentary on the 2013 EJCDC Construction Documents (EJCDC® C-001, 2013 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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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 setting 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 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 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.
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 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
 - 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.
- 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.
 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 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:
 - 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.

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.
- 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.
- 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 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
 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 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.
- 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.

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 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.

- 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

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.

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.

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, 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 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.
- 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
 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 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.
 - 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 consider 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 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 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 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.

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 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.
- 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.

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 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.
 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;
 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, 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 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.

- 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.

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.

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.
- 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.

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.

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:
 - 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 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.

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.
 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 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 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, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 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.

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
 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.

- 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 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.
- 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.
 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
 - 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. Ten 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;
 - 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 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.
 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, 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.

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 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 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.

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.

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.

KEG SUPPLEMENTAL GENERAL CONDITIONS TO EJCDC GENERAL CONDITIONS

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

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

SGC-1.01.

Add the following new Paragraph after Paragraph 1.01.A.48:

49. *Abnormal Weather Conditions* – Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.

SGC-2.02

Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

- A. Owner shall furnish to Contractor five copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

SGC-4.01

Delete the following sentence from Paragraph 4.01A:

In no event will the Contract Times commence to run later than the ninetieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

SGC 4.05.C.2

Add the following:

If the Contractor and the Owner cannot agree upon an equitable adjustment in the Contract Times, delays shall be determined as follows:

- a. Contractor shall obtain weather history for the most recent five (5) years (minimum)

preceding the Bid date. Weather history shall be obtained from the National Oceanic & Atmospheric Administration (NOAA) or other source approved by the Engineer. Historical weather shall be based on data from the weather reporting station closest to the project site.

- b For delays to be considered that are associated with an abnormal amount of rain, the Contractor shall use the weather history to calculate an average number of days that rainfall exceeded 0.1-inches for the period (month, quarter, year, etc.) in question. The average value calculated shall be rounded up to the next full day. A time extension may be considered equal to the number of days, above the calculated average, that the period in question experienced rainfall in excess of 0.1-inches. A Contract Time extension will not be considered for rain amounts less than 0.1-inches.
- c For daily rain amounts in excess of 1-inch, a time extension of one day beyond the number of days calculated as described above may be considered.
- d For delays associated with other abnormal weather events, the weather history shall be used to calculate an average number of days for the type of weather considered to be the cause of a delay. (Calculation of the average number of days shall be as described above.) Where the Contractor can demonstrate that the abnormal weather event has impaired his ability to perform work, beyond the day of the abnormal event, to perform site maintenance as necessary to restore the site to a workable condition may be considered.
- e In order for the contractor to claim delay due to abnormal weather; the Contractor must have worked on both the preceding and following normal work days.

SGC-5.03

Add the following new paragraph after Paragraph 5.03B:

If any geotechnical exploration for the project was performed and reported, said report will be included as an Appendix. The geotechnical report shall be used as a reference and all recommendations included therein shall be followed in full.

SGC-5.06

Add the following new paragraph immediately after Paragraph 5.06.A.2:

- 3. If any Hazardous Conditions were reported, said report will be included as an Appendix.

SGC-6.03

Add the following paragraphs after Paragraph 6.03.J:

K. The insurance required by this Paragraph shall include specific coverage and be written for not less than the limits of liability and coverages tabulated in the prototype Certificate of Insurance included as Section 00600, or as required by law, whichever is greater.

SGC-7.06

Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:

The contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s).

SGC-10.03.A.

The Duties, Responsibilities, and Limitations of Authority of the Resident Project Representative will be as stated in the document attached to these Supplementary General Conditions.

SGC-15.01

Add the following language at the end of Paragraph 15.01.B.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

Amend Paragraph 15.01.D.1 by removing "Ten Days" and inserting "Thirty Days"

SGC-15.02

Amend Paragraph 15.02.A by striking out the following text: "no later than seven days after the time of payment by Owner" and inserting "no later than the time of payment by the Owner.":

ATTACHMENT**DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE****1.01 PROJECT REPRESENTATIVE**

Engineer shall furnish a Resident Project Representative (RPR), assistants and other field staff to assist Engineer in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of materials and equipment by the RPR and assistants, Engineer shall endeavor to provide further protection for Owner against defects and deficiencies in the Work; but, the furnishing of such services will not make Engineer responsible for or give Engineer control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs, or responsibility for Contractor's failure to perform the work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of Engineer in Engineer's agreement with the Owner and in the construction Contract Documents, and are further limited and described as follows:

1.02 GENERAL

RPR is Engineer's agent at the site will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with Engineer and Contractor keeping Owner advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner with the knowledge of and under the direction of Engineer.

1.03 DUTIES AND RESPONSIBILITIES OF RPR

- A. Conference and Meetings: Attend meetings with Contractor such as preconstruction conferences, progress meetings, job conferences and other project related meetings, and see that copies of minutes are appropriately distributed.
- B. Liaison:
 - 1. Serve as Engineer's liaison with Contractor working principally through Contractor's superintendent and assist in understanding the intent of the

- Contract Documents; and assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
2. Assist in obtaining from Owner additional details or information when required for proper execution of the Work.
- C. Shop Drawings and Samples:
1. Maintain file of Shop Drawings.
 2. Advise Engineer and Contractor of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by Engineer.
- D. Review of Work, Rejection of Defective Work, Inspections and Tests:
1. Conduct on-site observations of the Work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 2. Report to Engineer whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to 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 Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing inspection or approval.
 3. Verify that tests equipment and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owners's personnel, and that Contractor maintains adequate records thereof; and observe, record and report to Engineer appropriate details relative to the test procedures and start-ups.
 4. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to Engineer.
- E. 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.
- F. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to Engineer. Transmit to Contractor decisions as issued by Engineer.
- G. Records:
1. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract

Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.

2. Keep daily reports and a log book, recording Contractor hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders, or change conditions, list of job site visitors, 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.
3. Record names, addresses and telephone numbers of all Contractor's, subcontractors and major suppliers of materials and equipment.

H. Reports:

1. Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule.
2. Consult with Engineer in advance of scheduled major tests, inspections or start of important phases of the Work.
3. Report immediately to Engineer and Owner upon the occurrence of any accident.
4. Maintain file of Daily Reports of the job progress and conditions.

I. Payment Request: 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.

J. Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to Engineer for review and forwarding to Owner prior to final payment for the Work.

K. Completion:

1. Before Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction. Participate in Engineer's determination of Substantial Completion.
2. Conduct final inspection in the company of Engineer, Owner and Contractor and prepare a final list of items to be completed or corrected.

3. Observe that all items on final list have been completed or corrected and make recommendations to Engineer concerning acceptance.

1.04 LIMITATIONS OF AUTHORITY

Resident Project Representative:

- A. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment unless authorized by Engineer.
- B. Shall not exceed limitations of Engineer's authority as set forth in the Contract Documents.
- C. Shall not undertake any of the responsibilities of Contractor, subcontractors, suppliers or Contractor's superintendent.
- D. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such directions are specifically required by the Contract Documents.
- E. Shall not advise on, or issue directions regarding, or assume control over safety precautions and programs in connection with the Work.
- F. Shall not authorize Owner to occupy the Project in whole or in part.
- G. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Engineer.
- H. Shall not authorize the Owner to occupy the Project in whole or in part.

SUPPLEMENTAL GENERAL CONDITIONS

FOR

CLEAN WATER STATE REVOLVING FUND

DRINKING WATER STATE REVOLVING FUND

(Drinking Water and Wastewater)

Project Name: Grayson County Water District – East-West Interconnect Phase 2 – Contract No. 7 – Water Treatment Plant Improvements

Project Number: _____

The attached instructions and regulations as listed below shall be incorporated into the Specifications and comprise Special Conditions.

	<u>Attachment No.</u>
SRF Special Provisions	1
KRS Chapter 45A Kentucky Model Procurement Code	2
Equal Employment Opportunity (EEO) Documents:	
Notice of Requirement for Affirmative Action	3
Construction Contract Specifications	4
EEO Goals for Region 4 Economic Areas	5
Check List of EEO Documentation for Bidders	6
Employer Information Report EEO-1 (SF 100)	7
Labor Standards Provisions for Federally Assisted Construction	8
Certifications:	
Debarment, Suspension and Other Responsibility Matters	9
Anti-lobbying	10
Disadvantaged Business Enterprise (DBE) Program	11
Bonds and Insurance	12
Storm Water General Permit	13
Davis-Bacon Wage Rate Requirements	14
American Iron and Steel Requirement	15

SRF SPECIAL PROVISIONS

- (a) Line crossings of all roads and streets shall be done in accordance with the Kentucky Transportation Cabinet requirements as may be set forth in the Special Conditions.
- (b) Construction is to be carried out so as to prevent by-passing of flows during construction unless a schedule has been approved by the State or EPA, whichever is applicable. Siltation and soil erosion must be minimized during construction. All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The permit can be found at this [webpage](#).

If you have any questions regarding the completion of this form call the Surface Water Permits Branch at (502) 564-3410.
- (c) Restore disturbed areas to original or better condition.
- (d) Use of Chemicals: All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of either DOW or EPA. Use of all such chemicals and disposal of residues shall be in conformance with instructions on the manufacturer's label.
- (e) The construction of the project, including the letting of contracts in connection therewith, shall conform to the applicable requirements of state, territorial, and local laws and ordinances to the extent that such requirements do not conflict with Federal laws and this subchapter.
- (f) The owner shall provide and maintain competent and adequate supervision and inspection.
- (g) The Kentucky Infrastructure Authority and Kentucky Division of Water shall have access to the site and the project work at all times.
- (h) In the event Archaeological materials (arrowheads, stone tools, stone axes, prehistoric and historic pottery, bottles, foundations, Civil War artifacts, and other types of artifacts) are uncovered during the construction of this project, work is to immediately cease at the location and the Kentucky Heritage Council shall be contacted. The telephone number is (502) 564-7005. Construction shall commence at this location until a written release is received from the Kentucky Heritage Council. Failure to report a find could result in legal action.
- (i) This procurement will be subject to DOW Procurement Guidance including the Davis-Bacon Act.
- (j) Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.
- (k) No wastewater bypassing will occur during construction unless a schedule has been approved by the Kentucky Division of Water.
- (l) Change orders to the construction contract (if required) must be negotiated pursuant to DOW/KIA Procurement Guidance for Construction and Equipment Contracts.

**KRS CHAPTER 45A
KENTUCKY MODEL PROCUREMENT CODE**

45A.075 Methods of awarding state contracts.

Except as otherwise authorized by law, all state contracts shall be awarded by:

- (1) Competitive sealed bidding, pursuant to KRS 45A.080; or
- (2) Competitive negotiation, pursuant to KRS 45A.085 and 45A.090 or 45A.180; or
- (3) Noncompetitive negotiation, pursuant to KRS 45A.095; or
- (4) Small purchase procedures, pursuant to KRS 45A.100.

Effective: June 24, 2003

History: Amended 2003 Ky. Acts ch. 98, sec. 4, effective June 24, 2003. -- Created 1978 Ky. Acts ch. 110, sec. 16, effective January 1, 1979.

45A.080 Competitive sealed bidding.

(1) Contracts exceeding the amount provided by KRS 45A.100 shall be awarded by competitive sealed bidding, which may include the use of a reverse auction, unless it is determined in writing that this method is not practicable. Factors to be considered in determining whether competitive sealed bidding is not practicable shall include:

- (a) Whether specifications can be prepared that permit award on the basis of best value; and
- (b) The available sources, the time and place of performance, and other relevant circumstances as are appropriate for the use of competitive sealed bidding.

(2) The invitation for bids shall state that awards shall be made on the basis of best value. In any contract which is awarded under an invitation to bid which requires delivery by a specified date and imposes a penalty for late delivery, if the delivery is late, the contractor shall be given the opportunity to present evidence that the cause of the delay was beyond his control. If it is the opinion of the purchasing officer that there is sufficient justification for delayed delivery, the purchasing officer may adjust or waive any penalty that is provided for in the contract.

(3) Adequate public notice of the invitation for bids and any reverse auction shall be given a sufficient time prior to the date set forth for the opening of bids or beginning of the reverse auction. The notice may include posting on the Internet or publication in a newspaper or newspapers of general circulation in the state as determined by the secretary of the Finance and Administration Cabinet not less than seven (7) days before the date set for the opening of the bids and any reverse auction. The provisions of this subsection shall also apply to price contracts and purchase contracts of state institutions of higher education.

(4) Bids shall be opened publicly or entered through a reverse auction at the time and place designated in the invitation for bids. At the time the bids are opened, or the reverse auction has ended, the purchasing agency shall announce the agency's engineer's estimate, if applicable, and make it a part of the agency records pertaining to the letting of any contract for which bids were received. Each written or reverse auction bid, together with the name of the bidder and the agency's engineer's estimate, shall be recorded and be open to public inspection. Electronic bid opening and posting of the required information for public viewing shall satisfy the requirements of this subsection.

(5) The contract shall be awarded by written notice to the responsive and responsible bidder whose bid offers the best value.

(6) Correction or withdrawal of written or reverse auction bids shall be allowed only to the extent permitted by regulations issued by the secretary.

Effective: July 15, 2010

History: Amended 2010 Ky. Acts ch. 63, sec. 3, effective July 15, 2010. -- Amended 2000 Ky. Acts ch. 509, sec. 1, effective July 14, 2000. -- Amended 1998 Ky. Acts ch. 120, sec. 10, effective July 15, 1998. -- Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 27, effective May 30, 1997. -- Amended 1996 Ky. Acts ch. 60, sec. 2, effective July 15, 1996. -- Amended 1994 Ky. Acts ch. 278, sec. 1, effective July 15, 1994. -- Amended 1982 Ky. Acts ch. 282, sec. 1, effective July 15, 1982. -- Amended 1979 (1st Extra. Sess.) Ky. Acts ch. 9, sec. 1, effective February 10, 1979. -- Created 1978 Ky. Acts ch. 110, sec. 17, effective January 1, 1979.

45A.085 Competitive negotiation.

(1) When, under administrative regulations promulgated by the secretary or under KRS 45A.180, the purchasing officer determines in writing that the use of competitive sealed bidding is not practicable, and except as provided in KRS 45A.095 and 45A.100, a contract may be awarded by competitive negotiation, which may include the use of a reverse auction.

(2) Adequate public notice of the request for proposals and any reverse auction shall be given in the same manner and circumstances as provided in KRS 45A.080(3).

(3) Contracts other than contracts for projects utilizing an alternative project delivery method under KRS 45A.180 may be competitively negotiated when it is determined in writing by the purchasing officer that the bids received by competitive sealed bidding either are unreasonable as to all or part of the requirements, or were not independently reached in open competition, and for which each competitive bidder has been notified of the intention to negotiate and is given reasonable opportunity to negotiate.

(4) Contracts for projects utilizing an alternative project delivery method shall be processed in accordance with KRS 45A.180.

(5) The request for proposals shall indicate the relative importance of price and other evaluation factors, and any reverse auction procedures.

(6) Award shall be made to the responsible and responsive offeror whose proposal is determined in writing to be the most advantageous to the Commonwealth, taking into consideration price and the evaluation factors set forth in the request for proposals and the reciprocal preference for resident bidders required under KRS 45A.494.

(7) Written or oral discussions shall be conducted with all responsible offerors who submit proposals determined in writing to be reasonably susceptible of being selected for award. Discussions shall not disclose any information derived from proposals submitted by competing offerors. Discussions need not be conducted:

(a) With respect to prices, where the prices are fixed by law, reverse auction, or administrative regulation, except that consideration shall be given to competitive terms and conditions;

(b) Where time of delivery or performance will not permit discussions; or

(c) Where it can be clearly demonstrated and documented from the existence of adequate competition or prior experience with the particular supply, service, or construction item, that acceptance of an initial offer without discussion would result in fair and reasonable best value procurement, and the request for proposals notifies all offerors of the possibility that award may be made on the basis of the initial offers.

Effective: July 15, 2010

History: Amended 2010 Ky. Acts ch. 63, sec. 4, effective July 15, 2010; and ch. 162, sec. 8, effective July 15, 2010. -- Amended 2003 Ky. Acts ch. 98, sec. 5, effective June 24, 2003. -- Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 28, effective May 30, 1997. -- Amended 1979 (1st Extra. Sess.) Ky. Acts ch. 9, sec. 2, effective February 10, 1979. -- Created 1978 Ky. Acts ch. 110, sec. 18, effective January 1, 1979.

45A.090 Negotiation after competitive sealed bidding when all bids exceed available funds.

(1) In the event that all bids submitted pursuant to competitive sealed bidding under KRS 45A.080 result in bid prices in excess of the funds available for the purchase, and the chief purchasing officer determines in writing:

(a) That there are no additional funds available from any source so as to permit an award to the responsive and responsible bidder whose bid offers the best value; and

(b) The best interest of the state will not permit the delay attendant to a resolicitation under revised specifications, or for revised quantities, under competitive sealed bidding as provided in KRS 45A.080, then a negotiated award may be made as set forth in subsections (2) or (3) of this section.

(2) Where there is more than one (1) bidder, competitive negotiations pursuant to KRS 45A.085(3) shall be conducted with the three (3) (two (2) if there are only two (2)) bidders determined in writing to be the most responsive and responsible bidders, based on criteria contained in the bid invitation and the reciprocal preference for resident bidders under KRS 45A.494. Such competitive negotiations shall be conducted under the following restrictions:

(a) If discussions pertaining to the revision of the specifications or quantities are held with any potential offeror, all other potential offerors shall be afforded an opportunity to take part in such discussions; and

(b) A request for proposals, based upon revised specifications or quantities, shall be issued as promptly as possible, shall provide for an expeditious response to the revised requirements, and shall be awarded upon the basis of best value.

(3) Where, after competitive sealed bidding, it is determined in writing that there is only one (1) responsive and responsible bidder, a noncompetitive negotiated award may be made with such bidder in accordance with KRS 45A.095.

Effective: July 15, 2010

History: Amended 2010 Ky. Acts ch. 162, sec. 9, effective July 15, 2010. -- Amended 2003 Ky. Acts ch. 98, sec. 6, effective June 24, 2003. -- Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 29, effective May 30, 1997. -- Created 1978 Ky. Acts ch. 110, sec. 19, effective January 1, 1979.

45A.095 Noncompetitive negotiation.

(1) A contract may be made by noncompetitive negotiation only for sole source purchases, or when competition is not feasible, as determined by the purchasing officer in writing prior to award, under administrative regulations promulgated by the secretary of the Finance and Administration Cabinet or the governing boards of universities operating under KRS Chapter 164A, or when emergency conditions exist. Sole source is a situation in which there is only one (1) known capable supplier of a commodity or service, occasioned by the unique nature of the requirement, the supplier, or market conditions. Insofar as it is practical, no less than three (3) suppliers shall be solicited to submit written or oral quotations whenever it is determined that competitive sealed bidding is not feasible. Award shall be made to the supplier offering the best value. The names of the suppliers submitting quotations and the date and amount of each quotation shall be placed in the procurement file and maintained as a public record. Competitive bids may not be required:

(a) For contractual services where no competition exists, such as telephone service, electrical energy, and other public utility services;

(b) Where rates are fixed by law or ordinance;

(c) For library books;

(d) For commercial items that are purchased for resale;

(e) For interests in real property;

(f) For visiting speakers, professors, expert witnesses, and performing artists;

(g) For personal service contracts executed pursuant to KRS 45A.690 to 45A.725; and

(h) For agricultural products in accordance with KRS 45A.645.

(2) The chief procurement officer, the head of a using agency, or a person authorized in writing as the designee of either officer may make or authorize others to make emergency procurements when an emergency condition exists.

(3) An emergency condition is a situation which creates a threat or impending threat to public health, welfare, or safety such as may arise by reason of fires, floods, tornadoes, other natural or man-caused disasters, epidemics, riots, enemy attack, sabotage, explosion, power failure, energy shortages, transportation emergencies, equipment failures, state or federal legislative mandates, or similar events. The existence of the emergency condition creates an immediate and serious need for services, construction, or items of tangible personal property that cannot be met through normal procurement methods and the lack of which would seriously threaten the functioning of government, the preservation or protection of property, or the health or safety of any person.

(4) The Finance and Administration Cabinet may negotiate directly for the purchase of contractual services, supplies, materials, or equipment in bona fide emergencies regardless of estimated costs. The existence of the emergency shall be fully explained, in writing, by the head of the agency for which the purchase is to be made. The explanation shall be approved by the secretary of the Finance and Administration Cabinet and shall include the name of the vendor receiving the contract along with any other price quotations and a written determination for selection of the vendor receiving the contract. This information shall be filed with the record of all such purchases and made available to the public. Where practical, standard specifications shall be followed in making emergency purchases. In any event, every effort should be made to effect a competitively established price for purchases made by the state.

Effective: July 15, 2002

History: Amended 2002 Ky. Acts ch. 344, sec. 9, effective July 15, 2002. -- Amended 1997 (1st Extra. Sess.) Ky. Acts ch. 4, sec. 30, effective May 30, 1997. -- Amended 1990 Ky. Acts ch. 496, sec. 4, effective July 13, 1990. -- Created 1978 Ky. Acts ch. 110, sec. 20, effective January 1, 1979

45A.100 Small purchases by state governmental bodies.

(1) Procurements may be made in accordance with small purchase administrative regulations promulgated by the secretary of the Finance and Administration Cabinet, pursuant to KRS Chapter 13A, as follows:

(a) Up to ten thousand dollars (\$10,000) per project for construction and one thousand dollars (\$1,000) for purchases by any state governmental body, except for those state administrative bodies specified in paragraph (b) of this subsection; and

(b) Up to forty thousand dollars (\$40,000) per project for construction or purchases by the Finance and Administration Cabinet, state institutions of higher education, and the legislative branch of government.

(2) Procurement requirements shall not be artificially divided so as to constitute a small purchase under this section. Reverse auctions may be used for small purchase procurements. At least every two (2) years, the secretary shall review the prevailing costs of labor and materials and may make recommendations to the next regular session of the General Assembly for the revision of the then current maximum small purchase amount as justified by intervening changes in the cost of labor and materials.

(3) The secretary of the Finance and Administration Cabinet may grant to any state agency with a justifiable need a delegation of small purchasing authority which exceeds the agency's small purchase limit provided in subsection (1) of this section. Delegations of small purchasing authority shall be granted or revoked by the secretary of the Finance and Administration Cabinet, in accordance with administrative regulations promulgated by the cabinet pursuant to KRS Chapter 13A. These administrative regulations shall establish, at a minimum, the criteria for granting and revoking delegations of small purchasing authority, including the requesting agency's past compliance with purchasing regulations, the level of training of the agency's purchasing staff, and the extent to which the agency utilizes the Kentucky Automated Purchasing System. The administrative regulations may permit the secretary of the Finance and Administration Cabinet to delegate small purchase procurements up to the maximum amount specified in subsection (1)(b) of this section.

Effective: July 15, 2010

History: Amended 2010 Ky. Acts ch. 63, sec. 5, effective July 15, 2010. -- Amended 2002 Ky. Acts ch. 320, sec. 2, effective July 15, 2002. -- Amended 2000 Ky. Acts ch. 225, sec. 1, effective July 14, 2000. -- Amended 1996 Ky. Acts ch. 60, sec. 1, effective July 15, 1996. -- Amended 1994 Ky. Acts ch. 323, sec. 1, effective July 15, 1994. -- Amended 1990 Ky. Acts ch. 496, sec. 5, effective July 13, 1990. -- Amended 1986 Ky. Acts ch. 384, sec. 1, effective July 15, 1986. -- Amended 1984 Ky. Acts ch. 384, sec. 1, effective July 13, 1984. -- Amended 1982 Ky. Acts ch. 282, sec. 2, effective July 15, 1982. -- Amended 1980 Ky. Acts ch. 242, sec. 1, effective July 15, 1980; and ch. 250, sec. 19, effective April 9, 1980. -- Created 1978 Ky. Acts ch. 110, sec. 21, effective January 1, 1979.

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

The following excerpts are from 45 FR 65984 (October 3, 1980):

The minority and female goals apply to Federal and federally assisted construction contractors and subcontractors which have covered contracts. The goals are expressed as a percentage of the total hours worked by such a covered or subcontractor's entire onsite construction workforce, which is working on any construction site within a relevant area. The goal applies to each construction craft and trade in the contractor's entire workforce in the relevant area including those employees working on private non-federally involved projects.

Until further notice, the following goals for minority utilization in each construction craft and trade shall be included in all Federal or federally assisted construction contracts and subcontracts in excess of \$10,000 to be performed in the respective geographic area. The goals are applicable to each nonexempt contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a Federal, federally assisted or non-federally related project, contract or subcontract.

Construction contractors which are participating in an approved Hometown Plan (see 41 CFR 60-4.5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the area covered by the Hometown Plan. With regard to all their other covered construction work, such contractors are required to comply as follows:

- Goals for female participation in each trade.....6.9%
- Goals for minority participation in each trade.....Insert goals for each year
(see Attachment Number 5)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area.

The following excerpts are from 45 FR 65977 (October 3, 1980):

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

As used in this Notice, and in the contract resulting from this solicitation, the covered area is (insert description of the geographical areas where the contract is to be performed giving the state, country, and city, if any).

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

EEO Specifications

Following is the standard language, which must be incorporated into all solicitations for offers and bids on all Federal and Federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in designated geographical areas:

1. As used in these specifications:
 - (a) Covered Area means the geographical area described in the solicitation from which this contract resulted.
 - (b) Director means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority;
 - (c) Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - (d) Minority includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take a good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7-a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensively as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligation.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7-b above.

- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, lay-off, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that EEO policy and the Contractor's obligations under these specifications are being carried out.
- n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
- o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
- p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative actions obligations (7 a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7 a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example: even though the Contractor has achieved its goal for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables for affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

**EEO GOALS FOR ECONOMIC AREAS IN REGION 4
SOURCE: APPENDIX B-80 IN 45 FR 65984 (OCTOBER 3, 1980)**

Kentucky:

053 Knoxville, TN
 SMSA Counties:
 3840 Knoxville, TN..... 6.6
 TN Anderson; TN Blount; TN Knox; TN Union.
 Non-SMSA Counties 4.5
 KY Bell; KY Harlan; KY Knox; KY Laurel; KY McCreary; KY Wayne; KY
 Whitley; TN Campbell; TN Claiborne; TN Cocke; TN Cumberland; TN Fentress;
 TN Grainger, TN Hamblen; TN Jefferson; TN Loudon; TN Morgan; TN Roane;
 TN Scott; TN Sevier.

054 Nashville, TN:
 SMSA Counties:
 1660 Clarksville - Hopkinsville, TN - KY 18.2
 KY Christian; TN Montgomery.
 5360 Nashville - Davidson, TN..... 15.8
 TN Cheatham, TN Davidson; TN Dickson; TN Robertson; TN Rutherford; TN
 Sumner; TN Williamson; TN Wilson.
 Non-SMSA Counties 12.0
 KY Allen; KY Barren; KY Butler; KY Clinton; KY Cumberland; KY Edmonson;
 KY Logan; KY Metcalfe; KY Monroe; KY Simpson; KY Todd; KY Trigg; KY
 Warren; TN Bedford; TN Cannon; TN Clay; TN Coffee; TN DeKalb; TN Franklin;
 TN Giles; TN Hickman; TN Houston; TN Humphreys; TN Jackson; TN Lawrence;
 TN Lewis; TN Macon; TN Marshall; TN Maury; TN Moore; TN Overton; TN
 Perry; TN Pickett; TN Putnam; TN Smith; TN Stewart; TN Trousdale; TN Van
 Buren; TN Warren; TN Wayne; TN White.

056 Paducah, KY:
 Non-SMSA Counties 5.2
 IL Hardin; IL Massac; IL Pope; KY Ballard; KY Caldwell; KY Calloway. KY
 Carlisle; KY Crittenden; KY Fulton; KY Graves; KY Hickman; KY Livingston;
 KY Lyon. KY McCracken; KY Marshall.

057 Louisville, KY:
 SMSA Counties:
 4520 Louisville, KY-IN 11.2
 IN Clark; IN Floyd; KY Bullitt; KY Jefferson; KY Oldham.
 Non-SMSA Counties 9.6
 IN Crawford; IN Harrison; IN Jefferson; IN Orange; IN Scott; IN Washington; KY
 Breckinridge; KY Grayson; KY Hardin; KY Hart; KY Henry; KY Larue; KY
 Marion; KY Meade; KY Nelson; KY Shelby; KY Spencer; KY Trimble; KY
 Washington.

058 Lexington, KY	
SMSA Counties	
4280 Lexington-Fayette, KY	10.8
KY Bourbon; KY Clark; KY Fayette; KY Jessamine; KY Scott; KY Woodford.	
Non-SMSA Counties	7.0
KY Adair KY Anderson; KY Bath; KY Boyle; KY Breathitt; KY Casey; KY Clay;	
KY Estill; KY Franklin; KY Garrard; KY Green; KY Harrison; KY Jackson; KY	
Knott; KY Lee; KY Leslie; KY Letcher; KY Lincoln; KY Madison; KY Magoffin;	
KY Menifee; KY Mercer; KY Montgomery; KY Morgan. KY Nicholas; KY	
Owsley; KY Perry; KY Powell; KY Pulaski; KY Rockcastle; KY Russell; KY	
Taylor; KY Wolfe.	
059 Huntington, WV:	
SMSA Counties:	
3400 Huntington - Ashland, WV-KY-OH	2.9
KY Boyd; KY Greenup; OH Lawrence; WV Cabell; WV Wayne.	
Non-SMSA Counties	2.5
KY Carter; KY Elliott; KY Floyd; KY Johnson; KY Lawrence; KY Martin; KY	
Pike; KY Rowan; OH Gallia; WV Lincoln; WV Logan; WV Mason; WV Mingo.	
067 Cincinnati, OH:	
SMSA Counties:	
1640 Cincinnati, OH-KY-IN	11.0
IN Dearborn; KY Boone; KY Campbell; KY Kenton; OH Clermont; OH Hamilton;	
OH Warren.	
3200 Hamilton - Middletown, OH	5.0
OH Butler.	
Non-SMSA Counties	9.2
IN Franklin; IN Ohio; IN Ripley; IN Switzerland; KY Bracken; KY Carroll; KY	
Fleming; KY Gallatin; KY Grant; KY Lewis; KY Mason; KY Owen; KY	
Pendleton; KY Robertson; OH Adams; OH Brown; OH Clinton; OH Highland.	
080 Evansville, IN:	
SMSA Counties	
2440 Evansville, IN-KY	4.8
IN Gibson; IN Posey; IN Vanderburgh; IN Warrick; KY Henderson.	
5990 Owensboro, KY	4.7
KY Daviess.	
Non-SMSA Counties	3.5
IL Edwards; IL Gallatin; IL Hamilton; IL Lawrence; IL Saline; IL Wabash; IL	
White; IN Dubois; IN Knox; IN Perry; IN Pike; IN Spencer; KY Hancock; KY	
Hopkins; KY McLean; KY Muhlenberg; KY Ohio; KY Union; KY Webster.	

**CHECK LIST OF EEO DOCUMENTATION FOR BIDDERS ON
GRANT/LOAN CONSTRUCTION (EXECUTIVE ORDER 11246 AS AMENDED)**

The low, responsive responsible bidder must forward the following items, in duplicate, to the owner no later than ten (10) days after bid opening. The owner shall have one (1) copy available for inspection by the Office of Federal Contracts Compliance (OFCC) within 14 days after the bid opening. More information can be found on the [OFCC](#) webpage.

1. Project Number. Project Location. Type of Construction.
2. Proof of registration with the Joint Reporting Commission. (See Attachment Number 7.)
3. Copy of Affirmative Action Plan of contractor. Indicate company official responsible for EEO.
4. List of current construction contracts, with dollar amount. List contracting Federal Agency, if applicable.
5. Statistics concerning company percent workforce, permanent and temporary, by sex, race, trade, handicapped, and age. 40 CFR Part 7.
6. List of employment sources for project in question. If union sources are utilized, indicate percentage of minority membership within the union crafts.
7. Anticipated employment needs for this project, by sex, race and trade, with estimate of minority participation in specific trades.
8. List of subcontractors (name, address and telephone) with dollar amount and duration of subcontract. Subcontractor contracts over \$10,000 must submit items 1- 7. The following information must be provided for all supplier contracts regardless of contract size: name of company, contact person, address, telephone number, dollar value of the contract, and a list of the materials to be supplied to the prime contractor.
9. List of any subcontract work yet to be committed with estimate of dollar amount and duration of contract.
10. Contract Price. Duration of prime contract.
11. DBE Documents - See special instructions regarding use of Minority, and Women Owned, and Small Businesses.

EMPLOYER INFORMATION REPORT EEO-1

Under the direction of the US Equal Employment Opportunity Commission, the Joint Reporting Committee is responsible for the full-length, multi-phase processing of employment statistics collected on the Employer Information Report EEO-1. This report, also termed Standard Form 100, details the sex and race/ethnic composition of an employer's work force by job category.

The Employer Information EEO-1 survey is conducted annually under the authority of Public Law 88-352, Title VII of the Civil Rights Act of 1964, as amended by the Equal Employment Opportunity Act of 1972. All employers with 15 or more employees are covered by Public Law 88-352 and are required to keep employment records as specified by Commission regulations. Based on the number of employees and federal contract activities, certain large employers are required to file an EEO-1 Report on an annual basis.

The EEO-1 Report must be filed by:

- (A) All private employers who are: (1) subject to Title VII of the Civil Rights Act of 1964 (as amended by the Equal Employment Opportunity Act of 1972) with 100 or more employees EXCLUDING State and local governments, primary and secondary school systems, institutions of higher education, Indian tribes and tax-exempt private memberships clubs other than labor organizations; OR (2) subject to Title VII who have fewer than 100 employees if the company is owned or affiliated with another company, or there is centralized ownership, control or management (such as central control of personnel policies and labor relations) so that the group legally constitutes a single enterprise and the entire enterprise employs a total of 100 or more employees.
- (B) All federal contractors (private employers), who: (1) are not exempt as provided for by 41 CFR 60-1.5, (2) have 50 or more employees, and (a) are prime contractors or first-tier subcontractors, and have a contract, subcontract, or purchase order amounting to \$50,000 or more; or (b) serve as depository of Government funds in any amount, or (c) is a financial institution which is an issuing an paying agent for U.S. Savings Bonds and Notes.

Only those establishments located in the District of Columbia and the 50 states are required to submit the EEO-1 Report. No Reports should be filed for establishments in Puerto Rico, the Virgin Islands or other American Protectorates.

When filing for the EEO-1 Report for the first time, go to the [U.S. Equal Employment Opportunity Commission](#) webpage and select "First Time Filers". Fill out the electronic questionnaire to enter your company into Joint Reporting Committee (JRC) system. Once you have completed the registration process, you will be contacted on how to proceed with the EEO-1 Report. If you have previously registered with the JRC, follow their instructions to update your information.

**LABOR STANDARDS PROVISIONS FOR
FEDERALLY ASSISTED CONSTRUCTION**

Labor standards provisions applicable to contracts covering federally financed and assisted construction (29 CFR 5.5, Contract Provisions and Related Matters) that apply to EPA State Revolving Fund loans are:

(a)(4)(iii) *Equal employment opportunity.* The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(a)(5) *Compliance with Copeland Act requirements.* The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(a)(6) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5 (a)(1) through (10) and such other clauses as the U.S. Environmental Protection Agency may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(a)(7) *Contract termination: debarment.* A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(b) *Contractor Work Hours and Safety Standards Act.* The Administrator, EPA, shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by §5.5(a) or §4.6 of part 4 of this title. As used in this paragraph, the terms *laborers* and *mechanics* include watchmen and guards.

(b)(1) *Overtime requirements.* No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(b)(2) *Violation; liability for unpaid wages; liquidated damages.* In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for unliquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) *Withholding for unpaid wages and liquidated damages.* The U.S. Environmental Protection Agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime

contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) *Subcontracts.* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in section §5.1, the Administrator of EPA shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Administrator of EPA shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the U.S. Environmental Protection Agency and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job. (Approved by the Office of Management and Budget under OMB control numbers 1215-0140 and 1215-0017.)

CERTIFICATIONS

Debarred Firms

All prime Construction Contractors shall certify that Subcontractors have not and will not be awarded to any firm that is currently on the EPA Master List of Debarred, Suspended and Voluntarily Excluded Persons in accordance with the provisions of 40 CFR 32.500(c). Debarment action is taken against a firm for noncompliance with Federal Law.

All bidders shall complete the attached certification (Attachment Number 9) and submit to the owner with the bid proposal.

Anti-lobbying Certification

All prime Construction Contractors must certify (Attachment Number 10) that no appropriated funds were or will be expended for the purpose of lobbying the Executive or Legislative Branches of the Federal Government or Federal Agency concerning this contract (contract in excess of \$100,000). If the Contractor has made or agreed to make payment to influence any member of Congress in regard to award of this contract, a Disclosure Form must be completed and submitted to the owner with the bid proposal.

All prime Contractors must require all Subcontractors to submit the certification, which must also be submitted to the owner.

**CERTIFICATION REGARDING DEBARMENT,
SUSPENSION AND OTHER RESPONSIBILITY MATTERS**

The prospective participant certifies to the best of its knowledge and belief that it and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or Local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to 5 years, or both.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

_____ I am unable to certify to the above statements. My explanation is attached.

**CERTIFICATION REGARDING LOBBYING
CERTIFICATION FOR CONTRACTS,
GRANTS, LOANS, AND COOPERATIVE AGREEMENTS**

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

_____ I am unable to certify to the above statements. My explanation is attached.

EPA DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

EPA's Disadvantaged Business Enterprise Program rule applies to contract procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. The rule is found at Federal regulation Title 40, Part 33. Specific responsibilities are highlighted below.

Loan recipient responsibilities:

- Include in each contract with a primary contractor the following term and condition:

“The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract.” (*Appendix A to Part 33—Term and Condition*)
- Employ the six Good Faith Efforts during prime contractor procurement (§33.301).
- Require the prime contractor to comply with the following prime contractor requirements of Title 40 Part 33:
 - To pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§33.302(a)).
 - To notify recipient in writing prior to any termination of a DBE subcontractor for convenience by the prime contractor (§33.302(b)).
 - To employ the six Good Faith Efforts described in §33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason (§33.302(c)).
 - To employ the six Good Faith Efforts described in §33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33 (§33.302(d)).
 - To provide EPA Form 6100-2 – *DBE Program Subcontractor Participation Form* to all DBE subcontractors (§33.302(e)). **NOTE: this requirement has been suspended.**
 - To submit EPA Forms 6100-3 – *DBE Program Subcontractor Performance Form* and 6100-4 *DBE Program Subcontractor Utilization Form* as part of the bid package or proposal (§33.302(f) and (g)). **NOTE: this requirement has been suspended.**
 - To employ the six Good Faith Efforts steps in paragraphs (a) through (f) of §33.301 while procuring any subcontracts (§33.302(i)).
- Conduct an Availability Analysis and negotiate fair share objectives with EPA (§33.401), or adopt the fair share objectives of the oversight state agency revolving loan fund for comparable infrastructure (§33.405(b)(3)).
- Maintain all records documenting its compliance with the requirements of Title 40 Part 33, including documentation of its, and its prime contractors', good faith efforts (§33.501(a)).

- Create and maintain a bidders list and require the prime contractor to create and maintain a bidders list (§33.501(b)). This list must include all firms that bid or quote on prime contracts, or bid or quote subcontracts, including both MBE/WBEs and non-MBE/WBEs. This list must be kept until the project period for the identified loan has ended. The following information must be obtained from all prime and subcontractors:
 - (a) Entity's name with point of contact,
 - (b) Entity's mailing address, telephone number, and email address,
 - (c) The procurement on which the entity bid or quoted, and when, and,
 - (d) Entity's status as an MBE/WBE or non-MBE/WBE.

Prime Contractor Responsibilities:

- Include in each contract with a subcontractor the following term and condition:

“The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract.” (*Appendix A to Part 33—Term and Condition*)
- Employ the six Good Faith Efforts during subcontractor procurement (§33.301).
- Pay subcontractors for satisfactory performance no more than 30 days from receipt of payment from the recipient (§33.302(a)).
- Notify recipient in writing prior to termination of a DBE subcontractor for convenience (§33.302(b)).
- Employ the six Good Faith Efforts described in §33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§33.302(c)).
- Employ the six Good Faith Efforts described in §33.301 even if the fair share objectives have been achieved under subpart D of Part 33 (§33.302(d)).
- Provide EPA Forms 6100-2 – *DBE Program Subcontractor Participation Form* and 6100-3 – *DBE Program Subcontractor Performance Form* to each DBE subcontractor prior to opening of the subcontractor's bid or proposal (§33.302(e) and (f)). **NOTE: this requirement has been suspended.**
- Complete EPA Form 6100-4 – *DBE Program Subcontractor Utilization Form* (§33.302(g)). **NOTE: this requirement has been suspended.**
- Submit to recipient with the bid package or proposal the completed EPA Form 6100-4, plus an EPA Form 6100-3 for each DBE subcontractor used in the bid or proposal (§33.302(f) and (g)). **NOTE: this requirement has been suspended.**
- Maintain all records documenting its compliance with the requirements of Title 40 Part 33, including documentation of its, and its subcontractors', good faith efforts (§33.501(a)).
- Create and maintain a bidders list and require the subcontractor to create and maintain a bidders list (§33.501(b)). This list must include all firms that bid or quote on subcontracts, including both

MBE/WBEs and non-MBE/WBEs. This list must be kept until the project period for the identified loan has ended. The following information must be obtained from all subcontractors:

- (a) Entity's name with point of contact,
- (b) Entity's mailing address, telephone number, and email address,
- (c) The procurement on which the entity bid or quoted, and when, and,
- (d) Entity's status as an MBE/WBE or non-MBE/WBE.

Subcontractor Responsibilities:

- May submit EPA Form 6100-2 – *DBE Program Subcontractor Participation Form* directly to DOW Project Manager (§33.302(e)). **NOTE: this requirement has been suspended.**
- Must complete EPA Form 6100-3 – *DBE Program Subcontractor Performance Form* and submit it to the prime contractor soliciting services prior to the prime contractor opening bids or quotes. **NOTE: this requirement has been suspended.**

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION POLICY

PROJECT NAME: _____ BID DATE: _____

1. Name, address and telephone number of contact person on all DBE matters:

Prime Contractor's Name: _____
Contact Person: _____
Address: _____
Phone: _____
Cell Phone: _____
Email: _____
Total Contract Amount: _____

2. Total dollar amount/percent of contract of MBE participation: _____

3. Total dollar amount/percent of contract of WBE participation: _____

4. Are certifications* for each MBE/WBE/DBE subcontractor enclosed; if no, please explain: Yes No _____

5. Are MBE/WBE/DBE subcontracts or letters of intent signed by both parties enclosed; if no, please explain: Yes No _____

6. List of MBE Subcontractors:

Name: _____
Contact Person: _____
Address: _____
Phone: _____
Cell Phone: _____
Email: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

7. List of WBE Subcontractors:

Name: _____
Contact Person: _____
Address: _____
Phone: _____
Cell Phone: _____
Email: _____
Type of Contract: _____
Work to be Done: _____
Amount: _____

Attach Additional Sheets, If Necessary

*Self-certification: Self certification of MBE/WBE/DBE firms will NOT be accepted as a valid form of certification of MBE/WBE/DBE status.

8. Information and documentation concerning efforts taken to comply with EPA’s “six good faith efforts”

(i). Ensure DBE construction firms or material suppliers are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing DBEs on solicitation lists and soliciting them whenever they are potential sources. A good source for a list of DBEs is the Kentucky Transportation’s [Certified DBE Directory](#) webpage.

The prime contractor certifies that a solicitation list of qualified DBE vendors was developed for current and future solicitations. *Submit a copy of the list as documentation.*

(ii). Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process; including, whenever possible, posting solicitation for bids or proposals for a sufficient amount of time as to receive a competitive bid or proposal pool.

The prime contractor certifies that every opportunity was provided to a number of DBEs to encourage their participation in the competitive process and that an adequate amount of time was provided for response. Must do at least one of the below.

a. List each DBE construction firm or material supplier to which a solicitation was attempted. *Submit copies of letters, emails, faxes, telecommunication logs, certified mail receipts, returned envelopes, certified mail return receipts, etc. as documentation.*

Company name and phone number: _____

Area of work expertise: _____

Date of any follow-ups and person spoke to: _____

b. Advertisements, if applicable: List each publication in which an announcement or notification was placed. *Submit original advertisement or a copy of the advertisement with an affidavit of publication for each announcement as documentation.*

Name of publication: _____

Date(s) of advertisement: _____

Specific subcontract areas announced: _____

c. Other, if applicable: List each notification method in which an announcement or outreach was used; list serve, public meeting, etc. *Submit applicable information to document effort.*

Method of notification: _____

Date(s) of notification: _____

(iii). Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs; including dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

The prime contractor certifies that the project was broken into its basic elements (i.e., dirt hauling, landscaping, painting, pipe installation, material supplies, etc.) and that a determination was made whether it’s economically feasible to bid the elements separately and that the analysis of this effort was documented with a short memo to the project file.

- (iv). Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women’s business enterprises.
 - The prime contractor certifies that they established delivery schedules which would allow DBEs to participate in the project and the effort was documented with a short memo to the project file.

- (v). Use the services and assistance of the Small Business Administration (SBA). The easiest way to utilize their services is to visit the [SBA](#) webpage and use the electronic tools available there or you may send the nearest SBA office a certified letter that generally describes the solicitation, the dates it will be open, the types of vendors you are seeking and applicable Standard Industrial Classification (SIC) or North American Industry Classification System (NAIC) codes if known. Or, you may use the services and assistance of the Kentucky Procurement Technical Assistance Center (PTAC) **and** the Kentucky Department of Transportation (KDOT). The easiest way to utilize the services of Kentucky PTAC and KDOT is to send an email to kyptacinfo@kstc.com and Melvin.Bynes2@ky.gov and generally describe the solicitation, the dates it will be open, the types of vendors you are seeking and applicable SIC or NAIC codes if known.
 - The prime contractor certifies that the assistance of the SBA or PTAC **and** KDOT was utilized. *Submit pages printed off the SBA websites which evidence efforts to register a solicitation on the site or submit copies of the letter sent and certified mail receipt as documentation; or submit copies of emails sent to PTAC and DOT as documentation.*

- (vi). If a Prime contractor awards any subcontracts, require the subcontractor to take the steps in numbers (i) through (v) above.
 - The prime contractor certifies that subcontractors used for this project will be required to follow the steps of the “six good faith efforts” as listed above.

9. Signature and date:

To the best of my knowledge and belief, all “six good faith efforts” have been met and the information contained in this document is true and correct; the document has been duly authorized by the legal representative.

Signature

Print name and title

Date

BONDS AND INSURANCE

The minimum requirements shall be as follows:

Bonding requirements for contracts of \$100,000 or less are contained in 40 CFR 31.36(h).

Bond requirements for contracts in excess of \$100,000 are:

- Bid guarantee equivalent to five percent of the bid price. The bid guarantee shall consist of a firm commitment such as a certified check or bid bond submitted with the bid;
- Performance bond equal to 100 percent of the contract price, and
- Payment bond equal to 100 percent of the contract price. Bonds must be obtained from companies holding Certificates of Authority as acceptable sureties, issued by the U.S. Treasury.

Insurance requirements are contained in the General Conditions of the contract. In addition to the other required insurance, the owner or the contractor, as appropriate, must acquire any flood insurance made available by the Federal Emergency Management Agency as required by 44 CFR Parts 59-79, if construction will take place in a flood hazard area identified by the Federal Emergency Management Agency. The owner's requirements on Flood Insurance are contained in the Special Conditions Section of the Contracts Documents.

STORM WATER GENERAL PERMIT

All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The permit can be found at this [webpage](#).

If you have any questions regarding the completion of this form call the Surface Water Permits Branch, at (502) 564-3410.

DAVIS-BACON WAGE RATE REQUIREMENTS

CWSRF: The recipient agrees to include in all agreements to provide assistance for the construction of treatment works carried out in whole or in part with such assistance made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.), or with such assistance made available under section 205(m) of that Act (33 U.S.C. 1285(m)), or both, a term and condition requiring compliance with the requirements of section 513 of that Act (33 U.S.C. 1372) in all procurement contracts and sub-grants, and require that loan recipients, procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions. All contracts and subcontracts for the construction of treatment works carried out in whole or in part with assistance made available as stated herein shall insert in full in any contract in excess of \$2,000 the contract clauses as set forth below titled “Wage Rate Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6)”. This term and condition applies to all agreements to provide assistance under the authorities referenced herein, whether in the form of a loan, bond purchase, grant, or any other vehicle to provide financing for a project, where such agreements are executed on or after October 30, 2009.

DWSRF: The recipient agrees to include in all agreements to provide assistance for any construction project carried out in whole or in part with such assistance made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12), a term and condition requiring compliance with the requirements of section 1450(e) of the Safe Drinking Water Act (42 U.S.C.300j-9(e)) in all procurement contracts and sub-grants, and require that loan recipients, procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions. All contracts and subcontracts for any construction project carried out in whole or in part with assistance made available as stated herein shall insert in full in any contract in excess of \$2,000 the contract clauses as set forth below entitled “Wage Rate Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6)”. This term and condition applies to all agreements to provide assistance under the authorities referenced herein, whether in the form of a loan, bond purchase, grant, or any other vehicle to provide financing for a project, where such agreements are executed on or after October 30, 2009.

Wage Rate Requirements under the Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6)

Preamble

With respect to the Clean Water and Safe Drinking Water State Revolving Funds, EPA provides capitalization grants to each State which in turn provides subgrants or loans to eligible entities within the State. Typically, the subrecipients are municipal or other local governmental entities that manage the funds. For these types of recipients, the provisions set forth under Roman Numeral I, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients’ compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section 3(ii)(A), below and for compliance as described in Section I-5.

Occasionally, the subrecipient may be a private for profit or not for profit entity. For these types of recipients, the provisions set forth in Roman Numeral II, below, shall apply. Although EPA and the State remain responsible for ensuring subrecipients’ compliance with the wage rate requirements set forth herein, those subrecipients shall have the primary responsibility to maintain payroll records as described in Section II-3(ii)(A), below and for compliance as described in Section II-5.

I. Requirements under the Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) for Subrecipients that are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the FY 2013 Continuing Resolution with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. The recipient or subrecipient may also obtain additional guidance from [Department of Labor's](#) webpage.

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the FY 2013 Continuing Resolution, DB prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the subrecipient shall monitor the [General Services Administration](#) website weekly to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

(ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor the [General Services Administration](#) website on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(b) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from the [General Services Administration](#) website into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage

determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's [General Services Administration](#) website.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient (s) to the State award official. The State award official will transmit the request, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s), shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the [Wage and Hour Division's](#) webpage or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under §5.5(a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5(a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman’s hourly rate) specified in the contractor’s or subcontractor’s registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice’s level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for

the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (a)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient, upon written request of the EPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification.

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable, the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour [District Office](#).

II. Requirements under the Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) for Subrecipients that are not Governmental Agencies

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2013 Continuing Resolution with respect to subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. The recipient or subrecipient may also obtain additional guidance from [DOL's](#) webpage.

Under these terms and conditions, the subrecipient must submit its proposed DB wage determinations to the State recipient for approval prior to including the wage determination in any solicitation, contract task orders, work assignments, or similar instruments to existing contractors.

1. Applicability of the Davis- Bacon (DB) prevailing wage requirements.

Under the FY 2013 Continuing Resolution, Davis-Bacon prevailing wage requirements apply to the construction, alteration, and repair of treatment works carried out in whole or in part with assistance made available by a State water pollution control revolving fund and to any construction project carried out in whole or in part by assistance made available by a drinking water treatment revolving loan fund. If a subrecipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the subrecipient must discuss the situation with the recipient State before authorizing work on that site.

2. Obtaining Wage Determinations.

(a) Subrecipients must obtain proposed wage determinations for specific localities from the U.S. Department of Labor's [General Services Administration](#) website. After the Subrecipient obtains its proposed wage determination, it must submit the wage determination to (insert contact information for State recipient DB point of contact for wage determination) for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing contractors (ordering instruments unless subsequently directed otherwise by the State recipient Award Official).

(b) Subrecipients shall obtain the wage determination for the locality in which a covered activity subject to DB will take place prior to issuing requests for bids, proposals, quotes or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the subrecipient shall monitor the U.S. Department of Labor's [General Services Administration](#) website on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The subrecipients shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e. bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the subrecipients may request a finding from the State recipient that there is not a reasonable time to notify interested contractors of the modification of the wage determination. The State recipient will provide a report of its findings to the subrecipient.

(ii) If the subrecipient does not award the contract within 90 days of the closure of the solicitation, any modifications or supersedes DOL makes to the wage determination contained in the solicitation shall be effective unless the State recipient, at the request of the subrecipient, obtains an extension of the 90 day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The subrecipient shall monitor the U.S. Department of Labor's [General Services Administration](#) website on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from the U.S. Department of Labor's [General Services Administration](#) website into the ordering instrument.

(c) Subrecipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract

or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Subrecipients may obtain wage determinations from the U.S. Department of Labor's [General Services Administration](#) website.

(ii)(A) The subrecipient(s), on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The State award official shall approve a request for an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the subrecipient(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), documentation of the action taken and the request, including the local wage determination shall be sent by the subrecipient(s) to the State award official. The State award official will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210 and to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification request within 30 days of receipt and so advise the State award official or will notify the State award official within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request, and the local wage determination, including the views of all interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The subrecipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the

site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the [Wage and Hour Division's](#) webpage or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5(a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5(a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the State, EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or State may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and

Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of \$100,000.

(a) Contract Work Hours and Safety Standards Act. The subrecipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act.

These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The subrecipient shall upon the request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (a)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Subrecipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Subrecipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

5. Compliance Verification.

(a) The subrecipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The subrecipient must use Standard Form 1445 (SF 1445) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(b) The subrecipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. Subrecipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Subrecipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The subrecipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The subrecipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, if practicable the subrecipient should spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Subrecipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The subrecipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour [District Office](#) or its successor site.

AMERICAN IRON AND STEEL REQUIREMENT

The Contractor acknowledges to and for the benefit of the _____ (“Purchaser”) and the State of Kentucky (the “State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement.

The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser).

While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

Sample Certification

The following information is provided as a sample letter of step certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name
Company Address
City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. XXXX
2. XXXX
3. XXXX

Such process took place at the following location:

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

SECTION 01010**SUMMARY OF WORK****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. The contract shall include but not be limited to the work described in these specifications
- B. Project Identification **CONTRACT 7 - WATER TREATMENT PLANT IMPROVEMENTS** for the Grayson County Water District
- C. Engineer: Kentucky Engineering Group, PLLC. Versailles Kentucky 40383
- D. The following major Work items are included in the Contract:
 - 1. One (1) new dual carbon adsorption vessel system, three (3) new high service pumps, security fence, associated piping, valves, electrical, instrumentation and all related appurtenances
- E. The Contractor shall include all materials, labor and equipment necessary to complete all site work. The contract Documents are intended to provide the basis for completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonably implied or necessary for proper performance of the Project shall be included.
- F. All work shall be in accordance with these Specifications and include all work necessary for a finished product.
- G. All excavation is bid unclassified.
- H. Continuous operations: The existing system must be maintained in continuous operation in such a manner that it meets all local, state, and federal requirements. The contractor is responsible not to deactivate, demolish, or interfere with any system component required for the continuous operation until a new or temporary permanent-like system has been installed and is operational. The Contractor is responsible for payment of all fines resulting from any action or inaction on his part or the part of his subcontractors during performance of the Work that causes the facility/facilities to operate in an illegal manner or fail to operate in a legal manner.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

- END OF SECTION -

SECTION 01015**WORK SEQUENCE****PART 1 - GENERAL****1.01 WORK INCLUDED**

The Contractor shall submit to the Engineer for review and acceptance a complete schedule of his proposed sequence of construction operations prior to commencement of work. However, the Engineer shall not accept a construction schedule that fails to utilize the entire time allocated for the construction of the new water treatment plant. This schedule requirement in no way prevents the Contractor from completing the project in a shorter time frame than scheduled. The construction schedule shall be submitted and approved by the Owner prior to the submittal of the first partial payment request. A revised construction schedule shall be submitted with every subsequent partial payment request. This revised schedule must be approved by the Owner prior to payment. The contractor shall use the following sequence of construction while working on the water treatment plant for the Grayson County Water District.

1. Notify the Grayson County Water District a minimum of 48 hours prior to plant shutdowns.
2. Contractor is responsible for any repairs to the existing utilities and/or property during construction.
3. Contractor must maintain continuous service (water) unless obtaining permission from Owner/Engineer.
4. Scheduled outages are permitted for various areas and processes within the plant, with durations varying depending on the process and redundancy. Within the treatment plant and raw water pump station, equipment may be taken out of service for up to four hours at any time of day, provided the Owner is provided with 48 hours notice. Longer outages may be permitted during second or third shift operation (5 pm through 7 am) on a case-by-case basis.

1.02 RELATED WORK

- A. Section 01010 - Summary of Work.

1.03 ADDITIONAL INFORMATION

Any delays caused by the Contractor shall be at his expense and at no cost to the Owner or Engineer.

- END OF SECTION -

SECTION 01016**OCCUPANCY****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. The Contractor shall be aware that after each major portion of the project is completed, the Contractor shall notify the Engineer that those specific operations are complete and prior to replacing that portion of the work into service shall request an interim inspection of the work to be returned to or placed into service.
- B. The interim inspection requested by the Contractor shall not preclude or supersede the final inspection of the project or reduce the Contractor's responsibility for the completed portion prior to final acceptance of the work by the Owner.
- C. The Contractor shall provide all necessary temporary controls and other items required for operation of all work placed into service prior to final acceptance as required. At such time as new controls, etc. are complete and functioning, the Contractor shall remove all temporary installed items.

- END OF SECTION -

SECTION 01025**MEASUREMENT AND PAYMENT****PART 1 - GENERAL****1.01 DESCRIPTION OF REQUIREMENTS**

- A. The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, service and other necessary supplies and perform all work shown on the Drawing and/or described in the Specifications and Contract Documents at the lump sum price as indicated by the Bidder in the Bid.
- B. The Bidder declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examine the Plans, Specification and Contract Documents for the Work, and has read all special provisions furnished prior to the opening of bids; and that he has further satisfied himself relative to the Work to be performed.
- C. All excavation required of the work shall be done as part of the total price for the complete project. All excavation shall be unclassified.
- D. Owner shall make payments on account of the Contract Price on the basis of Contractor's applications for Payment as recommended by the Engineer, on or about the ___ day of each month during construction. All progress payments will be on the basis of the progress of the Work measured by the Schedule of Values established in Paragraph 2.07 of the General Conditions or, in the event there is no schedule of values, as provided in the General Requirements
- E. The Progress payments shall include the cost of Stored Materials plus 90% of the work completed to date. Stored materials are defined as materials and equipment not incorporated in the Work but delivered, suitably stored and accompanied by documentation satisfactory to the Owner as provided in Article 15 of the General Conditions. The 10% is held as retainage.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION (Not Applicable)**

- END OF SECTION -

SECTION 01030**LABOR PROVISIONS****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. The Contractor shall conform to all provisions of the Kentucky Department of Labor, Wage Decisions (latest revisions), relative to minimum wages and hours as they may apply to the work to be accomplished under these specifications.
- B. In addition to the above, certain Federal laws and regulations shall govern the work and shall supplement or supplant the Kentucky Department of Labor Wage Decisions cited above, as the case may be.

1.02 RELATED SECTIONS

- A. Section 3 - Part 1 Hours and Wages

1.03 WAGE RATES

Prevailing wage rates DO apply to this project. The Contractor will utilize, when feasible, local labor and will pay them wages commensurate with the wages prevailing in the Community.

1.04 LABOR PREFERENCE

Where feasible, the Contractor will utilize local labor.

1.05 HOURS OF WORK

- A. Hours of work shall be as set out in Kentucky Department of Labor Wage Decisions (latest revisions); that is, not more than eight (8) hours in one calendar day, nor more than forty (40) hours in one week, except in case of emergency caused by fire, flood or damage to life and property.
- B. Any laborer, workman, mechanic, helper, assistant or apprentice working in excess of forty (40) hours per week, except in case of emergency, shall be paid not less than 1-1/2 times the wage rate. Whenever overtime work is scheduled, the Contractor shall give prior notice to the Owner.

- END OF SECTION -

SECTION 01040**COORDINATION****PART 1 - GENERAL****1.01 COORDINATION OF THE WORK**

The Contractor shall coordinate the work of all the crafts, trades and subcontractors engaged on the Work, and he shall have final responsibility as regards the schedule, workmanship and completeness of each and all parts of the Work.

All crafts, trades and subcontractors shall be made to cooperate with each other and with others as they may be involved in the installation of work which adjoins, incorporates, precedes or follows the work of another. It shall be the Contractor's responsibility to point out areas of cooperation prior to the execution of subcontract agreements and the assignment of the parts of the Work. Each craft, trade and subcontractor shall be made responsible to the Owner, for furnishing embedded items, giving directions for doing all cutting and fitting, making all provisions for accommodating the Work, and for protecting, patching, repairing and cleaning as required to satisfactorily perform the Work.

The Contractor shall be responsible for all cutting, digging and other action of his subcontractors and workmen. Where such action impairs the safety or function of any structure or component of the Project, the Contractor shall make such repairs, alterations and additions as will, in the opinion of the Engineer, bring said structure or component back to its original design condition at no additional cost to the Owner.

Each subcontractor is expected to be familiar with the General Requirements and all sections of the Detailed Specifications for all other trades and to study all Drawings applicable to his work to the end that complete coordination between trades will be affected. Each Contractor shall consult with the Engineer if conflicts exist on the Drawings.

- END OF SECTION -

SECTION 01120 - GENERAL PROVISIONS**PART 1 - GENERAL****1.01 DESIGNATION OF PARTIES**

- A. All references in the Specifications, Contract Documents and Drawings to "Owner" shall mean Grayson County Water District; all references to "Engineer" shall mean Kentucky Engineering Group, PLLC., 101 High St, Kentucky 40383.

1.02 EXPERIENCE CLAUSE

- A. Wherever experience is required of equipment manufacturers in manufacturing or in records of satisfactory operation for a specified period of time, in lieu of the experience, the manufacturer may furnish a 100 percent (100%) performance guarantee bond or a cash deposit. The bond or cash deposit provided by the manufacturer shall guarantee replacement of the equipment process in the event of failure or unsatisfactory service. The period of time for which the bond or cash deposit is required shall be the same as the experience period of time specified.

1.03 ACCESS TO INSPECTION OF WORK

- A. Representatives of the State Department of Health, the State Department for Natural Resources and Environmental Protection, local public health agencies, Owner, and Engineer shall at all times have full access to the project site for inspection of the work accomplished under this Contract and for inspection of all materials intended for use under the Contract. The Contractor shall provide proper facilities for such access and inspection.

1.04 EQUIPMENT LUBRICATION

- A. The Contractor shall make suitable provision for the proper lubrication of all equipment furnished under this Contract. Accessible grease fittings shall be provided where required. A supply of oil, grease and other lubricants of proper quality, as recommended by the manufacturer of the equipment, shall be furnished. Lubricants shall be furnished in their original, unopened containers, in sufficient quantity for initial fillings and for at least one (1) year after Substantial Completion.

1.05 PRE-CONSTRUCTION CONFERENCE

- A. The Contractor, Engineer and Owner, or their duly appointed representative, shall meet in a preconstruction conference prior to the initiation of construction to organize, schedule and determine responsibilities for the work as it pertains to each party of the Contract.

1.06 CONSTRUCTION SCHEDULE CHART

- A. Prior to start of any construction, the Contractor shall furnish a construction schedule or progress chart. The schedule or chart shall be subject to the approval of the Engineer, and be of sufficient detail to show the chronological relationship of all activities of the project, the order in which the Contractor proposes to carry on the work, estimated starting and completion dates of major features, procurement of materials, and scheduling of equipment. The schedule shall be in a form suitable for appropriately indicating the percentage of work scheduled for completion at any time. The schedule shall be kept current and shall reflect completion of all work under the Contract within the specified time and in accordance with these Specifications.

1.07 CONSTRUCTION PROGRESS MEETINGS

- A. Monthly construction progress meetings shall be held at the project site or at a designated location established by the Owner. The Contractor, appropriate Sub-Contractors, the Engineer and the Owner shall meet to review construction progress, equipment or material submittals, construction schedules, etc.

1.08 PRECONSTRUCTION PHOTOGRAPHS

- A. Prior to construction and mobilization of equipment, Contractor shall take record photographs of all areas of the project site.
- B. In lieu of photographs, a video record may be made of the project site.

1.09 SPARE PARTS

- A. Spare parts for routine maintenance and minor repairs shall be provided for specified equipment items in the respective technical sections of these Specifications. Required spare parts to be provided are listed in the particular equipment Specifications.
- B. Parts shall be coated to protect them from a moist atmosphere. All spare parts shall be plainly tagged, marked for identification and reordering, and shall be delivered properly boxed. Required identification includes (but is not limited to):
 - 1. Name of the manufacturer or supplier of equipment.
 - 2. Name of the unit for which the part is intended.
 - 3. Name of the spare part.
 - 4. Name of the supplier of the spare part.
 - 5. Manufacturer's catalogue part number.
 - 6. Precautionary information.
 - 7. Any other identifying information deemed appropriate.
- C. All spare parts for a single equipment item shall be crated together in containers suitable for handling with hoisting equipment and designed for prolonged storage and stenciled to identify contents.
- D. Where oil or grease lubricated equipment is concerned, sufficient oil or grease of types recommended by the equipment manufacturer shall be supplied for one year after Substantial Completion.
- E. The Contractor shall furnish and deliver the spare parts to the Owner at such time as he (Owner) may direct but prior to Contract expiration date. Furnish to the Engineer for record purposes a list of spare parts delivered to the Owner.

1.10 CLEANING

- A. The Contractor shall at all times keep the construction site and the surrounding area presentable to the public, and clean of rubbish caused by the Contractor's operation. At completion of the work, the Contractor shall remove all the rubbish, all tools, equipment,

temporary work and surplus materials, from and about the premises, and shall leave the site clean and ready for use.

- B. After completion of all work and before final acceptance of the work, the Contractor shall thoroughly clean all equipment and materials and shall remove all foreign matter such as grease, dirt, plaster, labels, stickers, etc., from the exterior of the piping, equipment and all associated fabrication.
- C. All waste and excess materials shall be disposed of off the project site and at no additional expense to the Owner. In no case shall waste materials (any removed concrete, piping, equipment, etc.) be buried on the site. Burning is not permitted unless prior approved by the Owner and/or Local Authority.
- D. Upon completion of the project, the Contractor is responsible for leaving the project site in as good as or better condition than the original. This includes site grading, landscaping, replacement of sidewalks, driveways, curbs, mailboxes, clotheslines, fences, etc. and removal of all construction debris.

1.11 TAXES

- A. Proposals shall be made to include any applicable taxes on payrolls, materials, equipment, vehicles, utilities, etc., including State sales taxes and shall include compensation for such taxes on all work under this Contract.

1.12 LINES AND GRADES

- A. The Engineer will set a benchmark or marks near the site and furnish the Contractor with the elevation of same. The Engineer will assist the Contractor in laying out the axes of the structures. The Contractor shall be responsible for all other lines and grades required for the construction of structures. The Contractor shall set line and grade stakes for all gravity sewers, offset from the centerline of the trench or the axes of the pipelines.
- B. The Contractor shall use a laser beam instrument to set the grades on gravity sewer lines. In using such an instrument, the Contractor shall be responsible for maintaining grades and elevations as called for on the drawing profiles, and any variances found shall be corrected by the Contractor at his expense. The Contractor shall verify invert elevation at each manhole for a check. A blower shall be used with the laser beam instrument during warm or hot weather to assure accurate line and grade for the laser beam.
- C. When water lines, process piping and other such buried pressure pipelines are involved, the Engineer will assist the Contractor in the location of these lines; however, any detailed layout requiring surveying, or excavation including that required for establishing the grade of the pipeline, shall be accomplished by the Contractor.
- D. The Contractor shall furnish all materials, stakes and grade boards that are required for layout by the Contractor's forces. In addition, the Contractor shall furnish any necessary survey personnel to mark the location of the various facilities on the ground, establishing bench levels and determining as-built conditions after work is completed. The Contractor's personnel engaged in the layout work described herein and the aides furnished to the Engineer shall be fully capable of performing the duties set out herein and shall be fully qualified as required. Contractor shall be responsible for verifying all profiles and elevations prior to construction.

1.13 BLASTING

- A. All blasting operations shall be conducted in strict accordance with the Rules and Regulations of the State Department of Mine and Minerals, Division of Explosives and Blasting, which shall be deemed to be included in these Specifications the same as though herein written in full. The Contractor shall also comply with applicable municipal ordinances, Federal Safety Regulations and Section 9 of the Manual of Accident Prevention in Construction, published by the Associated General Contractor's of America, Inc. All explosives shall be stored in conformity with said ordinances, laws and safety regulations. No blasting shall be done within five feet of any water mains, or ten feet of any gas mains except with light charges of explosives. Any damage done by blasting is the responsibility of the Contractor and shall be promptly and satisfactorily repaired by him. All blast events shall be designed in accordance with state laws. These guidelines are established to limit peak particle velocities occurring as a result of blasting to protect structures from damage due to ground motions from blast events. The peak particle velocity is the maximum velocity of particle excitation measured along any of the three orthogonal axes (longitudinal, vertical or transverse). In addition the following guidelines shall be applicable to new concrete.

Age of Concrete, Days*	Maximum Permissible Particle Velocity, IPS**
0 to 1	0.25
2	0.50
3-or more	1.00

* Concrete is defined as properly designed and placed, well-consolidated Portland Cement concrete achieving a normal increase in strength with age.

** Measured at location of concrete, by probe fixed in or on soil surface.

As an option, a scaled distance (distance from blast to concrete/-square root of charge weight) of 130 or more can be used conservatively to design blast events.

- B. Unless otherwise required by ordinance or law, each excavation crew shall be provided with two metal boxes equipped with suitable locks. One of these boxes shall be for storing explosives and one for caps. The boxes shall always be locked except when in actual use. They shall be painted a bright color and stenciled with appropriate warning signs. At night, explosives and caps shall be stored in separate magazines.
- C. If any possibility exists of rock or any other debris leaving the site during a blast event, the shot shall be covered with rope, heavy timber or rubber mats, to prevent the aforementioned.
- D. The Contractor shall keep a blasting log and, for each blast, shall record the date, time of blast, number of holes, type of explosive, number of delays, amount of charge per delay; stemming type, and number of caps; and all other items as required by State laws and regulations.
- E. All blasting shall be supervised and performed by qualified personnel and shall be monitored to ensure compliance with the particle velocity requirements. The Contractor shall submit a monitoring plan to the Engineer prior to beginning blasting activities.
- F. A pre-blast survey shall be performed by the Contractor. The pre-blast survey shall be accurate and up to date at the time of the blast event. The survey shall be a compilation of the condition, type, and general appearance of all nearby structures. It shall also include a listing of any vibration-sensitive equipment or conditions which exist at adjacent facilities. The owners and occupants of these facilities shall be notified of the intent to blast and the

blasting schedule. The survey shall be conducted by a competent engineering firm or other qualified firm and sufficiently documented by photographs, video, measurements, and diagrams. The survey shall include all structures within 200' of the project or any such structure the Contractor feels may be reasonably affected by ground and/or air vibrations from blasting. Pre-blast survey results shall be submitted to the Owner upon request.

- G. Shot rock which is excavated shall be disposed of offsite by the Contractor. No rock larger than one-half cubic foot will be permitted in the backfill.

1.14 COMPLIANCE WITH SAFETY REGULATIONS

- A. The equipment items furnished shall comply with all governing federal and state laws regarding safety, including all current requirements of the Occupational Safety and Health Act (OSHA). Contractor shall be solely responsible for job safety in accordance with all laws, regulations, methods, etc. of OSHA and the state.
- B. Compliance with OSHA (P.L. 91-596) and the Contract Work Hours and Safety Standards Act (P.L. 91-54) are required.

1.15 MAINTENANCE AND OPERATIONS MANUAL

- A. Every piece of equipment furnished and installed shall be provided with complete maintenance and operations manuals. These shall be detailed in instructions to the Owner's personnel. They shall be attractively bound for the Owner's records. See Section 01340 and Section 01780 for requirements. The manuals shall be submitted to the Engineer for review as to adequacy and completeness. Provide four copies each, unless otherwise noted.

1.16 OBSTRUCTIONS

- A. In cases where storm sewers, sanitary sewers, gas lines, water lines, telephone lines, electric lines or other underground structures are encountered, they shall not be displaced or molested unless necessary, in which case they shall be replaced in as good a condition as found and as quickly as possible.
- B. The Contractor is responsible for notifying the appropriate utility companies and coordinating the protection of the utility. All such lines or underground structures damaged or molested in the construction shall be replaced at the Contractor's expense, unless in the opinion of the Engineer, such damage was caused through no fault of the Contractor.

1.17 STORAGE FACILITIES

- A. The Contractor shall be responsible for proper and adequate storage of all materials and equipment used on the site. Any additional off-site space required for construction purposes shall be the Contractor's responsibility to obtain.
- B. Upon completion of the work, the Contractor shall remove all storage facilities, surplus materials and equipment and restore the site to its original condition, or to the finished condition as required by the Contract.

1.18 STANDARDS OF WORKMANSHIP

- A. Work of all crafts and trades shall be laid out to lines and elevations as established by the Contractor from the Drawings or from instructions by the Engineer. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The work shall be accurately measured and fitted to

tolerance as established by the best practices of the crafts and trades involved and shall be as required to fit all parts of the work carefully and neatly together.

1.19 PERFORMANCE AND PAYMENT BONDS

- A. Performance and payment bonds, as specified in the General Conditions, shall run for a period of one (1) year after final acceptance of the work by the Owner. These bonds shall be executed on the forms provided as a part of the Contract Documents.

1.20 INITIAL START-UP AND OPERATION

- A. The initial operation period provided for herein is to check and provide the satisfactory mechanical operation of the facilities. These requirements for start-up and operation in no way relieve the Contractor of his responsibility with respect to guaranty of work as specified in the "General Conditions." The manufacturer's representatives shall be present during this period to instruct the operators in the care, operation and maintenance of the equipment. When the shakedown period is completed, the Owner will assume responsibility for maintenance and operation, provided that all major items of the Work are operating satisfactorily.
- B. If any or all of the facilities are not operating satisfactorily at the end of the shakedown period, the Contractor shall continue to maintain those facilities that are incomplete or not operating satisfactorily until they are complete and acceptable to the Owner. Maintenance by the Contractor shall include all mechanical facilities such as pumps and like equipment. Prior to start-up, the Contractor will be required to prepare an operating schedule detailing the proposed start-up and his plans for manpower and auxiliary facilities to be provided.

1.21 GUARANTY

- A. Except as otherwise specified herein, the Contractor shall guarantee all work from latent defects in materials, equipment and workmanship for one (1) year from the date of substantial completion of the Contract. The date of final completion shall be that date upon which the final estimate is approved by the Owner or the date of substantial completion as defined in Section 01700 of the technical Specifications. In case any date but the date of final completion is established to govern the time of the Guaranty, such date shall be duly recorded together with the terms and conditions of such agreement.
- B. The Contractor agrees that he will obtain from the manufacturers of equipment and materials, furnished under this Contract, guarantees against defective materials and workmanship, and if those guarantees furnished by the manufacturer do not extend for the term of one (1) year from and after the substantial completion date that is formally approved by the Owner or other established date as set forth hereinbefore, he shall make the necessary arrangements and assume all cost for extending this guarantee for the required period. In addition, extended warranties as listed under each individual equipment specification shall begin after the substantial completion date.
- C. The Contractor shall promptly make such repairs or replacement as may be required under the above specified guarantee, and, when the repairs or replacements involve one or more items of installed equipment, shall provide the services of qualified factory-trained servicemen in the employ of the equipment manufacturers to perform or supervise the repairs or replacements.
- D. When the Engineer or the Owner deems it necessary, and so orders, such replacements or repairs under this section shall be undertaken by the Contractor within twenty-four (24) hours after service of notice. If the Contractor unnecessarily delays or fails to make the

ordered replacements or repairs within the time specified, or if any replacements or repairs are of such nature as not to admit of the delay incident to the service of a notice, then the Owner shall have the right to make such replacements or repairs, and the expense thereof shall be paid by the Contractor or deducted from any moneys due the Contractor.

- E. The Performance Bond shall remain in full force and effect throughout the Guaranty period.
- F. All warranties and guarantees remaining in effect at and beyond the Guaranty expiration date shall be relinquished and transferred to the Owner. Copies of such warranty/guaranty shall be submitted to the Engineer prior to date of the start of the guaranty period.

1.22 TRAFFIC CONTROL AND MAINTENANCE

- A. Traffic shall be maintained on all highways and streets at all times during construction of pipe lines across or along side said highways and streets. Access to all existing subdivisions and private residences shall also be kept open. Work shall be performed in accordance with applicable City, County, and State Department of Transportation guidelines. Traffic control shall include proper signing and flagging per these guidelines.
- B. Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices. Work shall include all labor and materials necessary for construction and maintenance of traffic control devices and markings.
- C. Traffic control shall also include all flag persons and traffic control devices such as, but not limited to, flashers, signs, barricades and vertical panels, plastic drums (steel drums will not be permitted) and cones necessary for the control and protection of vehicular and pedestrian traffic as specified by the Manual on Uniform Traffic Control Devices.
- D. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the Contractor when no longer needed.
- E. The Contractor shall maintain a two-lane traveled way with a minimum lane width of 10 feet; however, during working hours, one-way traffic may be allowed at the discretion of the Engineer, provided adequate signing and flagpersons are at the location.
- F. The Contractor shall fully cover with plywood any signs, either existing, permanent or temporary, which do not properly apply to the current traffic phasing and shall maintain the covering until the signs are applicable or are removed.
- G. In general, all traffic control devices shall be placed starting and proceeding in the direction of the flow of traffic and removed starting and proceeding in the direction opposite to the flow of traffic.
- H. The Engineer and Contractor shall review the signing before traffic is allowed to use lane closures, crossovers, or detours, and all signing shall be approved by the Engineer before work can be started by the Contractor.
- I. If traffic should be stopped due to construction operations and an emergency vehicle on an official emergency run arrives on the scene, the Contractor shall make provisions for the passage of that vehicle immediately.

1.23 FLOOD INSURANCE

- A. Contractor is required to carry flood insurance for projects which are located in designated flood hazard areas unless Federal Flood Insurance is not available.

1.24 UTILITY LINE ACTIVITIES COVERED UNDER NATIONWIDE PERMIT # 12

All activities involving utility line construction covered under NATIONWIDE PERMIT # 12 shall meet the following conditions:

- A. The general Water Quality Certification is limited to the crossing of intermittent and perennial streams by utility lines.
- B. The construction of permanent or temporary access roads will impact less than 300 linear feet of intermittent and perennial streams and less than one acre of jurisdictional wetlands.
- C. Sewer lines shall be located at least 50 feet away from a stream which appears as a blue line on a USGA 7 ½ minute topographic map except where the sewer alignment crosses the stream. Utility lines that cross streams shall be constructed by methods that maintain normal stream flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to re-entering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the sewer line excavation shall not be allowed to enter the flowing portion of the stream.
- D. The activities shall not result in any permanent changes in preconstruction elevation contours in waters or wetlands or stream dimension, pattern or profile.
- E. Utility line construction projects through jurisdictional wetlands shall not result in conversion of the area to non-wetland status.
- F. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
- G. Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access. Effective erosion and sedimentation control measures must be employed at all times during the project to prevent degradation of waters of the Commonwealth. Site regrading and reseeded will be accomplished within 14 days after disturbance.
- H. To the maximum extent practicable, all in stream work under this certification shall be performed during low flow.
- I. Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances where such in stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- J. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If riprap is utilized, it is to be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- K. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.
- L. Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms

of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/928-2380.

1.25 PROTECTION OF VEGETATION

- A. Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

1.26 PIPE AND MANHOLE REPLACEMENT

- A. Where indicated in the Contract Documents, pipe and manholes to be replaced shall be removed from the site and disposed of by the Contractor. Material shall not be placed back in the trench or buried on the site.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01200**SUBSTITUTIONS****PART 1 - GENERAL**

- A. If the CONTRACTOR wishes to furnish or use a substitute item of material or equipment or construction method he shall make written application to the Contracting Officer within thirty (30) days after execution of the Contract, certifying that the proposed substitute will perform adequately the functions called for by the general design, be similar and of equal substance to that specified and be suited to the same use and capable of performing the same functions as that specified. Requests for review of substitute items of material and equipment will not be accepted by the ENGINEER from anyone other than CONTRACTOR.
- B. In making request for substitution, CONTRACTOR represents:
1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
 2. He will provide the same or better guarantee for substitution as for product or method specified.
 3. He will coordinate installation of accepted substitution into work, making such changes as required in all respects.
 4. He waives all claims for additional costs related to substitution that consequently become apparent.
 5. Cost data is complete and includes all related costs under this Contract.

1.01 SUBMITTALS

- A. The CONTRACTOR shall submit requests for substitution. Include in request the following:
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 2. Indication whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty.
 3. For Products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature with product description, performance and test data, and reference standards.
 - c. Samples.
 - d. Name and address of similar projects on which product was used, data of installation, and product performance and maintenance records.
 4. For Construction Methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
 5. Itemized comparison of proposed substitution with product or method specified.

6. Data relating to changes in construction schedule.
 7. Relation to separate contracts, if any.
 8. Accurate cost data on proposed substitution in comparison with product or method specified.
- D. Substitutions will not be accepted if:
1. They are only shown or implied on Shop Drawings.
 2. Acceptance will require substantial revision of Contract Documents.
 3. Substitutions would change design concepts or Specifications.
 4. Substitutions would delay completion of the Work.
 5. Substitutions involve items for which a manufacturer was declared at time of bidding.
- E. The ENGINEER will determine whether substitute brands or products are equal to those specified in the Contract Documents. No substitute will be ordered or installed without the ENGINEER's prior written acceptance.
- F. The OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute.
- G. If the ENGINEER determines that a substitute is not equal to that named in the Specifications, the CONTRACTOR shall furnish one of the brands or products specified, at no additional cost to the OWNER.
- H. The time required by the ENGINEER to evaluate and either accept or reject proposed substitutes is included in the Contract Time and no extension of the Contract Time shall be allowed therefore.

1.02 ENGINEERING COSTS

- A. The ENGINEER will record all time required in evaluating substitutions proposed by CONTRACTOR and in making any change in the Drawings or Specifications occasioned thereby. Whether or not the ENGINEER accepts a proposed substitute, the CONTRACTOR will reimburse the OWNER for the actual costs of the ENGINEER for evaluating any proposed substitute which either does not meet the requirements of the Drawings and Specifications, or the acceptance of which would require changes to other portions of the work.
- B. CONTRACTOR shall reimburse OWNER for all associated engineering costs, including redesign, additional shop drawing reviews, investigations, consultant fees and revision of the Contract Documents required because of the substitution.

- END OF SECTION -

SECTION 01300**SUBMITTALS****PART 1 - GENERAL****1.01 WORK INCLUDED**

Shop drawings, descriptive literature, project data and samples (when samples are specifically requested) for all manufactured or fabricated items shall be submitted by the Contractor to the Engineer for examination and review in the form and in the manner required by the Engineer. All SUBMITTALS shall be furnished digitally through a system provided by the engineer and shall be checked, reviewed and signed by the Contractor before submission to the Engineer. The review of the Drawings by the Engineer shall not be construed as a complete check but only for conformance with the design concept of the Project and for compliance with information given in the Contract Documents. Review of such drawings will not relieve the Contractor of the responsibility for any errors that may exist, as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work.

1.02 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. General Provision.
- B. Section 01720 - Project Record Documents (As-Built).
- C. Section 01730 Operating and Maintenance Data

1.03 DEFINITIONS

The term "submittals" shall mean shop drawings, manufacturer's drawings, catalog sheets, brochures, descriptive literature, diagrams, schedules, calculations, material lists, performance charts, test reports, office and field samples, and items of similar nature which are normally submitted for the Engineer's review for conformance with the design concept and compliance with the Contract Documents.

1.04 GENERAL CONDITIONS

- A. Review by the Engineer of shop drawings or SUBMITTALS of material and equipment shall not relieve the Contractor from the responsibilities of furnishing same of proper dimension, size, quality, quantity, materials and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Review shall not relieve the Contractor from responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents.
- B. Review of shop drawings shall not be construed as releasing the Contractor from the responsibility of complying with the Specifications.

1.05 GENERAL REQUIREMENTS FOR SUBMITTALS

- A. Shop Drawings:
 - 1. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Drawings. Where applicable, show fabrication, layout, setting and erection details.

2. Shop drawings are defined as original drawings prepared by the Contractor, subcontractors, suppliers, or distributors performing work under this Contract. Shop drawings illustrate some portion of the work and show fabrication, layout, setting or erection details of equipment, materials and components.
- B. Project data shall include manufacturer's standard schematic drawings modified to delete information which is not applicable to the Project, and shall be supplemented to provide additional information applicable to the Project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the Project.
- C. Where samples are required, they shall be adequate to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and material, with integrally related parts and attachment devices, along with a full range of color samples.
- D. All submittals shall be referenced to the applicable item, section and division of the Specifications, and to the applicable Drawing(s) or Drawing schedule(s).
- E. The Contractor shall review and check SUBMITTALS, and shall indicate his review by initials and date.
- F. If the submittals deviate from the Contract Drawings and/or Specifications, the Contractor shall advise the Engineer, in letter of transmittal of the deviation and the reasons therefor. All changes shall be clearly marked on the submittal with a bold red mark. Any additional costs for modifications shall be borne by the Contractor.
- G. In the event the Engineer does not specifically reject the use of material or equipment at variance to that which is shown on the Drawings or specified, the Contractor shall, at no additional expense to the Owner, and using methods reviewed by the Engineer, make any changes to structures, piping, controls, electrical work, mechanical work, etc., that may be necessary to accommodate this equipment or material. Should equipment other than that on which design drawings are based be accepted by the Engineer, shop drawings shall be submitted detailing all modification work and equipment changes made necessary by the substituted item.
- H. Additional information on particular items, such as special drawings, schedules, calculations, performance curves, and material details, shall be provided when specifically requested in the technical Specifications.
- I. Submittals for all electrically operated items (including instrumentation and controls) shall include complete wiring diagrams showing leads, runs, number of wires, wire size, color coding, all terminations and connections, and coordination with related equipment.
- J. Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers and fabricators; the Contractor shall be responsible for insuring the compatibility of such coatings with the field-applied paint products and systems.
- K. Fastener specifications of manufacturer shall be indicated on equipment shop drawings.
- L. Where manufacturers' brand names are given in the Specifications for building and construction materials and products, such as grout, bonding compounds, curing compounds, masonry cleaners, waterproofing solutions and similar products, the Contractor shall submit names and descriptive literature of such materials and products he proposes to use in this Contract.

- M. No material shall be fabricated or shipped unless the applicable drawings or submittals have been reviewed by the Engineer and returned to the Contractor.
- N. All bulletins, brochures, instructions, parts lists, and warranties packaged with and accompanying materials and products delivered to and installed in the Project shall be saved and transmitted to the Owner through the Engineer.

1.06 CONTRACTOR RESPONSIBILITIES

- A. Verify field measurements, field construction criteria, catalog numbers and similar data.
- B. Coordinate each submittal with requirements of Work and of Contract Documents.
- C. Notify Engineer, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.
- D. Begin no work, and have no material or products fabricated or shipped which required submittals until return of submittals with Engineer's stamp and initials or signature indicating review.

1.07 SUBMITTAL PROCEDURES

- A. General: Refer to the General Conditions and Paragraph 1.1 hereinbefore for basic requirements for submittal handling.
- B. Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.
- C. Coordination of Submittal Times: Prepare and transmit each submittal to the Architect/Engineer sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Architect/Engineer's need to review submittals concurrently for coordination.
- D. Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Architect/Engineer on each submittal, as to whether processing time is critical to the progress of the work and if the work would be expedited if processing time could be shortened.
 - 1. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Architect/Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.
 - 2. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect/Engineer sufficiently in advance of the work.
- E. Submittal Preparation: Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.
 - 1. Project name.
 - 2. Date.
 - 3. Name and address of Architect/Engineer.

4. Name and address of Contractor.
 5. Name and address of subcontractor.
 6. Name and address of supplier.
 7. Name of manufacturer.
 8. Number and title of appropriate specification section.
 9. Drawing number and detail references, as appropriate.
 10. Similar definitive information as necessary.
- I. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect/Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".
- J. Electronic Submittals: Submittals will be processed through a digital file transfer system. Each item of the submittal documents shall be in .pdf format and shall be oriented so that they are read from upper left corner to lower right corner, with no rotation of said document being required after receiving it. The .pdf file shall be named so that it describes the item being submitted. All other requirements herein are part of the electronic submittal process with the exception of the duplicate copies. Contractor stamp indicating review and any comments or notes must be on the .pdf submittal. Once electronic Submittals have been reviewed the Contractor shall print 1 hardcopies of the final reviewed shop drawing showing both. 1 Copy shall be provided to the resident project representative. The second copy shall be kept on the job site by the contractor.

- END OF SECTION -

SECTION 01380**CONSTRUCTION PHOTOGRAPHY****PART 1 - GENERAL****1.01 WORK INCLUDED**

The Contractor shall be responsible for video taping the entire project site both prior to construction and immediately after completion and acceptance of all work. Video tapes shall be produced by a videographer acceptable to the Engineer and of a professional quality.

1.02 VIDEO TAPE

The video tape shall be of a high-quality format. Videos shall show the time, date, and project location on screen during playback.

1.03 SUBMITTALS

The Contractor shall provide two copies of the Videos on a portable hard drive or "thumb drive". Both the hard drives shall be clearly labeled with project name start date and completion date as shown below.

Project Name and Contract No.

Owner Name

Start Date: _____

Completion Date: _____

-END OF SECTION-

SECTION 01500**TEMPORARY FACILITIES AND CONTROLS****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. The Contractor shall make his own provisions for temporary electricity and water and maintain strict supervision of use of temporary utility services as follows:
 - 1. Enforce compliance with applicable standards.
 - 2. Enforce safety practices
 - 3. Prevent abuse of services.
 - 4. Pay all utility charges required.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

- A. The Contractor shall obtain and pay for all permits as required by governing authorities.
- B. Obtain and pay for temporary easements required across property other than that of Owner or that is shown on the Contract Drawings.
- C. The Contractor shall comply with applicable codes.

1.03 REMOVAL

- A. The Contractor shall completely remove temporary materials, equipment, and offices upon completion of construction.
- B. The Contractor shall repair damage caused by installation and restore to specified or original condition.

1.04 TEMPORARY LIGHTING

- A. The Contractor shall furnish and install temporary lighting required for:
 - 1. Construction needs.
 - 2. Safe and adequate working conditions.
 - 3. Public Safety.
 - 4. Security lighting.
 - 5. Temporary office and storage area lighting.
- B. Service periods for safety lighting shall be as follows:
 - 1. Within construction area: All times that authorized personnel are present.
 - 2. Public areas: At all times.

- C. Costs of Installation and Preparation: Contractor shall pay all installation, maintenance and removal costs of temporary lighting.
- D. Maintenance of temporary lighting service (replacement of bulbs, etc.) shall be the sole responsibility of the General Contractor.

1.05 TEMPORARY WATER

The Contractor shall provide the water necessary for testing and disinfection. Water purchased from the owner for flushing and testing shall be paid for at the whole sale price by the contractor. The Contractor shall supply his own hoses, chlorine for disinfection, etc.

1.06 SANITARY FACILITIES

Contractor shall provide sanitary facilities as set forth in General Provisions (GP-2.04.Sanitary Regulations).

1.07 FIELD OFFICE (Office Trailer not Required for this Contract)

The Contractor shall make his own provisions for providing the electricity, telephone, gas, water, sewer, and other utilities to his office trailer that are required or as necessary for completion of the work.

The Contractor shall be responsible for all utility charges.

PART 2 - PRODUCTS

Not used.

PART 3 – EXECUTION

3.01 IMPLEMENTATION

- B. The Contractor shall provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to storm drains, adjacent areas and walkways prior to the start of any site work.
- C. Straw bale dikes, silt fencing and synthetic filter fabric shall be used as necessary to protect adjacent lands, surface waters, and vegetation to achieve environmental objectives.
- D. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Soil deposited on pavement by construction and other contractor vehicles shall be removed and the pavement swept as required.
- F. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- G. Minimize amount of bare soil exposed at one time.
- H. Provide temporary measures such as berms, dikes, drains, hay bales, gabions, etc., as directed by the Engineer so as to minimize siltation due to runoff.

- I. Construct fill and waste areas by selective placement to avoid erosive exposed surface of silts or clays.
- J. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

3.02 OPERATION AND MAINTENANCE

- A. The Contractor shall inspect, repair, and maintain erosion and sediment control measures until final stabilization has been established.

3.03 REMOVAL OF FACILITIES

- A. The Contractor shall remove the temporary facilities after final stabilization has been established. Used devices (including old straw bales) shall be disposed of as Construction & Demolition debris.

3.04 DUST CONTROL

- A. Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

- END OF SECTION -

SECTION 01580**PROJECT IDENTIFICATION AND SIGNS****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. The Contractor shall provide all signs required by these specifications near the site of the work. The sign shall set forth the description of the work and the names of the Owner, Engineer and Contractor as shown on the Plans or in these Specifications.
- B. The Contractor shall furnish and install One (1) sign on the Project. One sign shall conform to the specifications and painted as shown on Figure I on the following page. The location of signs shall be determined by the Owner and/or Engineer at the pre-construction meeting.

PART 2 - PRODUCT**2.01 SIGN**

The sign shall be constructed of 3/4" thick APA A-B Exterior grade or marine plywood. Posts shall be 4" x 4" of fencing type material. Prime all wood with white primer. Sign shall be as shown in Figure I and II.

PART 3 - EXECUTION**3.01 MAINTENANCE**

The sign shall be maintained in good condition until completion of the Project.

3.02 LOCATION

The location of the project signs shall be determined at the pre-construction conference after the contract has been awarded.

-END OF SECTION-

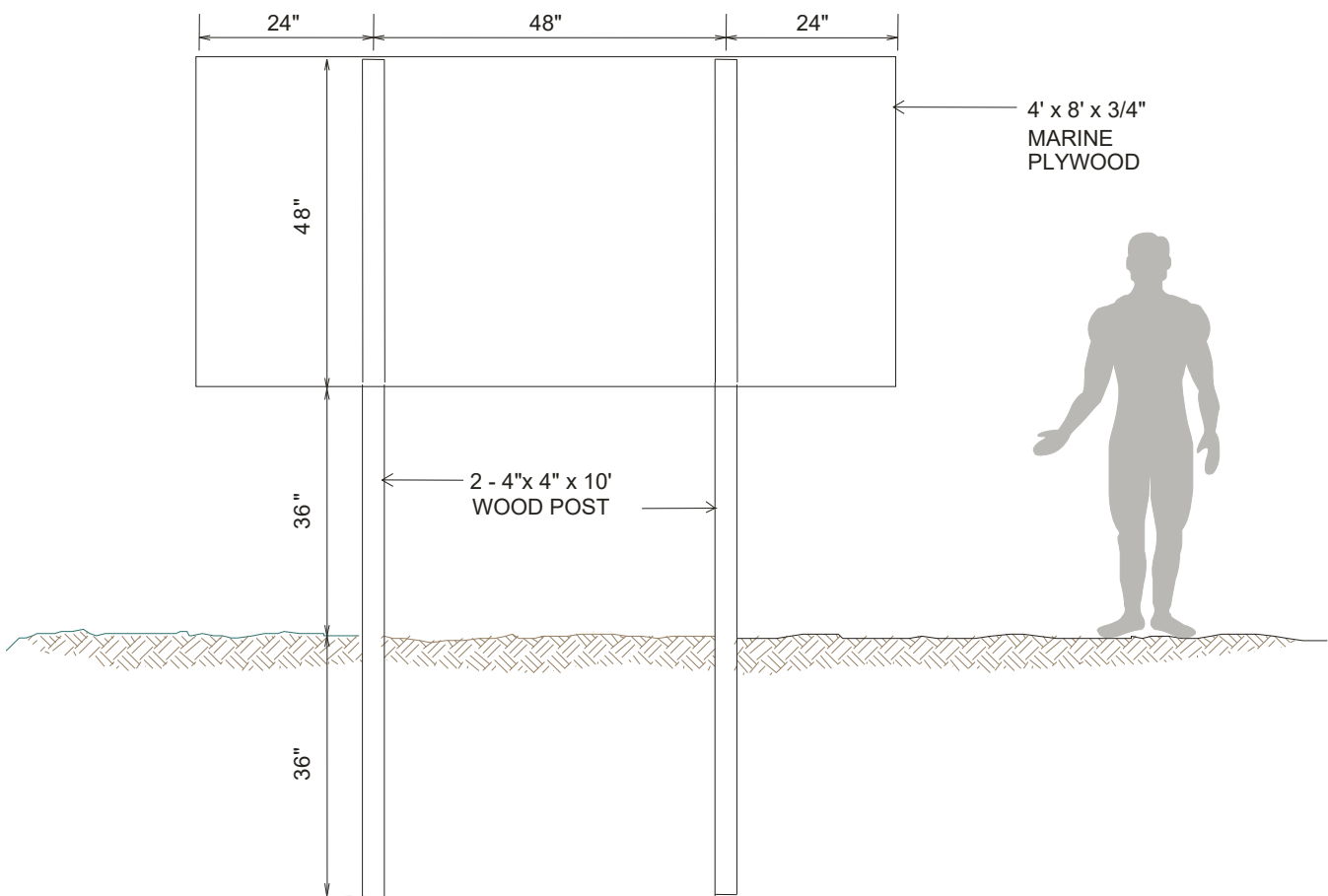
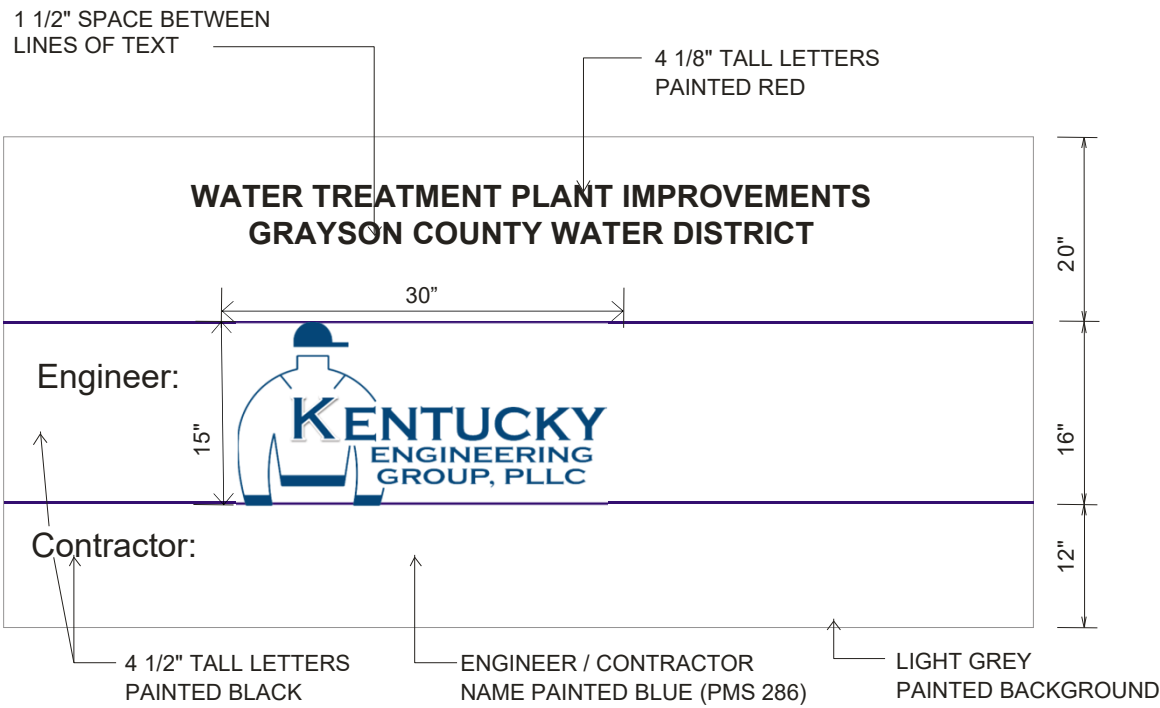


FIGURE 1
01580-2

SECTION 01610**TRANSPORTATION AND HANDLING****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. Handling and Distribution:
1. The Contractor shall handle, haul, and distribute all materials and all surplus materials on the different portions of the work, as necessary or required; shall provide suitable and adequate storage room for materials and equipment during the progress of the work, and be responsible for the protection, loss of, or damage to materials and equipment furnished by him, until the final completion and acceptance of the work.
 2. Storage and demurrage charges by transportation companies and vendors shall be borne by the Contractor.
- B. Storage of Materials and Equipment: All excavated materials and equipment to be incorporated in the work shall be placed so as not to injure any part of the work or the existing facilities and so that free access can be had at all times to all parts of the work and to all public utility installations in the vicinity of the work. Materials and equipment shall be kept neatly piled and compactly stored in such locations as will cause a minimum of inconvenience to public travel and adjoining owners, tenants and occupants.

- END OF SECTION -

SECTION 01700**PROJECT CLOSEOUT****PART 1 - GENERAL****1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE**

- A. Liquidated Damages: General Provisions-11.20. CHARGES FOR DELAY CAUSED BY THE CONTRACTOR
- B. Cleaning: Section 01710.
- C. Project Record Documents: Section 01720.

1.02 SUBSTANTIAL COMPLETION

- A. Contractor:
 - 1. Submit written certification to Engineer that project is substantially complete.
 - 2. Submit list of major items to be completed or corrected.
- B. Engineer will make an inspection within seven days after receipt of certification, together with Owner's Representative.
- C. Should Engineer consider that work is substantially complete:
 - 1. Contractor shall prepare, and submit to Engineer, a list of items to be completed or corrected, as determined by the inspection.
 - 2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:
 - a. Date of Substantial Completion.
 - b. Contractor's list of items to be completed or corrected, verified and amended by Engineer.
 - c. The time within which Contractor shall complete or correct work of listed items.
 - d. Time and date Owner will assume possession of work or designated portion thereof.
 - e. Responsibilities of Owner and Contractor for:
 - (1) Insurance
 - (2) Utilities
 - (3) Operation of mechanical, electrical and other systems.
 - (4) Maintenance and cleaning.
 - (5) Security

- f. Signatures of:
 - (1) Engineer.
 - (2) Contractor.
 - (3) Owner.

- 3. Owner occupancy of Project or Designated Portion of Project:
 - a. Contractor shall:
 - (1) Obtain certificate of occupancy.
 - (2) Perform final cleaning in accordance with Section 01710.
 - b. Owner will occupy Project, under provisions stated in Certificate of Substantial Completion.

- 4. Contractor shall complete work listed for completion or correction, within designated time.

- D. Should Engineer consider that work is not substantially complete.
 - 1. He shall immediately notify Contractor, in writing, stating reasons.
 - 2. Contractor shall complete work, and send second written notice to Engineer, certifying that Project, or designated portion of Project is substantially complete.
 - 3. Engineer will reinspect work.

1.03 FINAL INSPECTION

- A. Contractor shall submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Project has been inspected for compliance with Contract Documents.
 - 3. Work has been completed in accordance with Contract Documents.
 - 4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
 - 5. Project is completed and ready for final inspection.

- B. Engineer will make final inspection within seven (7) days after receipt of certification.

- C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Closeout submittals.

- D. Should Engineer consider that work is not finally complete:
 - 1. He shall notify Contractor, in writing, stating reasons.
 - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Engineer certifying that work is complete.

3. Engineer will reinspect work.

1.04 FINAL CLEAN UP

The Work will not be considered as completed and final payment made until all final clean up has been done by the Contractor in a manner satisfactory to the Engineer. See Section 01710 for detailed requirements.

1.05 CLOSEOUT SUBMITTALS

Project Record Documents: To requirements of Section 01720.

1.06 FINAL APPLICATION FOR PAYMENT

Contractor shall submit final applications in accordance with requirements of GENERAL PROVISIONS.

1.07 FINAL CERTIFICATE FOR PAYMENT

- A. Engineer will issue final certificate in accordance with provisions of GENERAL PROVISIONS.
- B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Semi-Final Certificate for Payment.

- END OF SECTION -

SECTION 01710**CLEANING****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. During its progress the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible.
- B. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures, by work done under this contract, or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, channels, drains, pipes, structures, and work, etc., shall, upon completion of the work, be left in a clean and neat condition.
- C. On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools, and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect, and cover all organic matter and material containing organics in, under, and around privies, houses, and other buildings used by him; shall remove all rubbish from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition.
- D. The Contractor shall thoroughly clean all materials and equipment installed by him and his subcontractors, and on completion of the work shall deliver it undamaged and in fresh and new appearing condition.
- E. The Contractor shall restore or replace, when and as directed, any public or private property damaged by his work, equipment, or employees, to a condition equal or better than that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk, and landscaping work. Suitable materials, equipment, and methods shall be used for such restoration. The restoration of existing property or structures shall be done as promptly as practicable as work progresses and shall not be left until the end of the contract period.

1.02 DESCRIPTION

- A. Related Requirements Specified Elsewhere:
 - 1. Project Closeout: Section 01700.
 - 2. Cleaning for Specific Products or Work: Specification Section for that work.
- B. On a continuous basis, maintain premises free from accumulations of waste, debris, and rubbish, caused by operations.

- C. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.

1.03 SAFETY REQUIREMENTS

- A. Hazards Control:
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes, which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- B. Conduct cleaning and disposal operations in compliance with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on Project site without written permission from the Owner.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or fuel in open drainage ditches or storm or sanitary drains.
 - 3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION

- A. Execute cleaning to ensure that grounds and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to minimize blowing dust.
- C. At reasonable intervals during progress of Work, clean site and public properties, and dispose of waste materials, debris and rubbish.
- D. Provide on-site containers for collection of waste materials, debris and rubbish.
- E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off construction site.
- F. The Contractor shall thoroughly clean all materials and equipment installed.

3.02 FINAL CLEANING

- A. Employ experienced workmen, or professional cleaners, for final cleaning.
- B. In preparation for substantial completion, conduct final inspection of project area(s).
- C. Broom clean paved surfaces; rake clean other surfaces of grounds.
- D. Maintain cleaning until Project, or portion thereof, is accepted by Owner.

- END OF SECTION -

SECTION 01720**PROJECT RECORD DOCUMENTS****PART 1 - GENERAL****1.01 WORK INCLUDED**

The Contractor shall obtain from the Engineer, one (1) set of prints of the Contract Drawings. These prints shall be kept and maintained in good condition at the project site and a qualified representative of the Contractor shall enter upon these prints, from day-to-day, the actual "as-built" record of the construction progress. Entries and notations shall be made in a neat and legible manner and these prints shall be delivered to the Engineer upon completion of the construction. APPROVAL FOR FINAL PAYMENT WILL BE CONTINGENT UPON COMPLIANCE WITH THIS PROVISION.

1.02 RELATED REQUIREMENTS SPECIFIED ELSEWHERE:

- A. Section 01300 - Submittals.
- B. General Provisions

1.03 MAINTENANCE OF DOCUMENTS

- A. Maintain at job site, one copy of:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Reviewed Shop Drawings
 - 5. Change Orders
 - 6. Other Modifications to Contract
- B. Store documents in approved location, apart from documents used for construction.
- C. Provide files and racks for storage of documents.
- D. Maintain documents in clean, dry legible condition.
- E. Do not use record documents for construction purposes.
- F. Make documents available at all times for inspection by Engineer and Owner.

1.04 MARKING DEVICES

Provide colored pencil or felt-tip marking pen for all marking.

1.05 RECORDING

- A. Label each document "PROJECT RECORD" in 2-inch high printed letters.

- B. Keep record documents current.
- C. Do not permanently conceal any work until required information has been recorded.
- D. Contract Drawings: Legibly mark to record actual construction:
 - 1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - 2. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - 3. Field changes of dimension and detail.
 - 4. Changes made by Change Order or Field Order.
 - 5. Details not on original Contract Drawings.
- E. Specifications and Addenda: Legibly mark up each Section to record:
 - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 - 2. Changes made by Change Order or Field Order.
 - 3. Other matters not originally specified.
- F. Shop Drawings: Maintain as record documents; legibly annotate Shop Drawings to record changes made after review.

1.06 SUBMITTAL

- A. At completion of project, deliver record documents to Engineer.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
 - 1. Date.
 - 2. Project Title and Number.
 - 3. Contractor's Name and Address.
 - 4. Title and Number of each Record Document.
 - 5. Certification that each Document as Submitted is Complete and Accurate.
 - 6. Signature of Contractor, or his authorized Representative.

- END OF SECTION -

SECTION 01730**OPERATING AND MAINTENANCE DATA****PART 1 - GENERAL****1.01 WORK INCLUDED**

A. Compile product data and related information appropriate for Owner's maintenance and operation of equipment furnished under the contract. Prepare operating and maintenance data as specified.

B. Instruct Owner's personnel in the maintenance and operation of equipment and systems as outlined herein and/or in other Divisions.

C. In addition to maintenance and operations data, the manufacturer's printed recommended installation practice shall also be included. If not part of the operations and maintenance manual, separate written installation instructions shall be provided, serving to assist the Contractor in equipment installation.

D. Related Requirements Specified Elsewhere:

1. Section 01300 - Submittals.
2. Section 01700 - Project Closeout.
3. Section 01720 - Project Record Documents.
4. Section 01740 - Warranties and Bonds.
5. General Provisions

1.02 MAINTENANCE AND OPERATIONS MANUAL

Every piece of equipment furnished and installed shall be provided with complete maintenance and operations manuals. These shall be detailed in instructions to the Owner's personnel. They shall be attractively bound for the Owner's records.

The manuals shall be submitted to the Engineer for review as to adequacy and completeness. Provide three (3) copies each.

1.03 FORM OF SUBMITTALS

A. Prepare data in the form of an instructional manual for use by Owner's personnel.

B. Format:

1. Size: 8-1/2 x 11 in.
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten.
4. Drawings:
 - a. Provide reinforced punched binder tab, bind with text.
 - b. Fold large drawings to the size of the text pages where feasible.
 - c. For all drawings included within manuals, furnish a 3 mil mylar copy in standard size drawings 36" x 24", 8" x 16" or 8-1/2" x 11".
 - d. For flow or piping diagrams that cannot be detailed on the standard size drawings, a larger, appropriate size drawing may be submitted.
5. Provide fly-leaf for each separate product, or each piece of operating equipment.

- a. Provide typed description of product, and major component parts of equipment.
 - b. Provide indexed tabs.
- 6. Cover: Identify each volume with types or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - a. Title of Project.
 - b. Identity of separate structure as applicable.
 - c. Identity of general subject matter covered in the manual.
- C. Binders:
 - 1. Commercial quality, durable and cleanable, 3-hole, 3" or 4" post type binders, with oil and moisture resistant hard covers.
 - 2. When multiple binders are used, correlate the data into related consistent grouping.
 - 3. Labeled on the front cover and side of each binder shall be the name of the Project, the Contract Number and Volume Number.
- D. Digital Copy:
 - 1. A digital copy of the initial O&M manual shall be provided on a portable solid state hard drive or "Thumb Drive". The contractor may submit multiple O&M manuals on 1 hard drive for ease of review and storage.
 - 2. A final copy of all O&M manuals shall be provided to the owner on a portable solid state hard drive along with two (2) hard copies.

1.04 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
 - 1. Contractor, name of responsible principal, address and telephone number.
 - 2. A list of each product required to be included, indexed to the content of the volume.
 - 3. List, with each product, the name, address and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.
 - c. Identify the area of responsibility of each.
 - d. Local source of supply for parts and replacement.
 - 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
- B. Product Data:
 - 1. Include only those sheets which are pertinent to the specific product. References to other sizes and types or models of similar equipment shall be deleted or lined out.
 - 2. Annotate each sheet to:
 - a. Clearly identify the specific product or part installed.
 - b. Clearly identify the data applicable to the installation.
 - c. Provide a parts list for all new equipment items, with catalog numbers and other data necessary for ordering replacement parts.

- d. Delete references to inapplicable information.
 3. Clear and concise instructions for the operation, adjustment, lubrication, and other maintenance of the equipment including a lubrication chart.
- C. Drawings:
1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
 2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
 3. Do not use Project Record Documents as maintenance drawings.
- D. Written text, as required to supplement product data for the particular installation:
1. Organize in a consistent format under separate headings for different procedures.
 2. Provide a logical sequence of instructions for each procedure.
- E. Copy of each warranty, bond and service contract issued: Provide information sheet for Owner's personnel.
1. Proper procedures in the event of failure.
 2. Instances which might affect the validity of warranties or bonds.
- F. These manuals shall be delivered to the Engineer at the time designated by the Engineer. The manuals must be approved by the Engineer before final payment on the equipment is made.

- END OF SECTION -

SECTION 01740
WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Compile specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute submittals when so specified.
- D. Review submittals to verify compliance with Contract Documents.
- E. Related requirements specified elsewhere:
 - 1. Bid Bond: Instructions to Bidders.
 - 2. Performance and Payment Bonds: General Provisions.
 - 3. Guaranty: General Provisions.
 - 4. General Warranty of Construction: General Provisions.
 - 5. Project Closeout: Section 01700.
 - 6. Warranties and Bonds required for specific products: As listed herein.
 - 7. Provisions of Warranties and Bonds, Duration: Respective specification sections for particular products.
 - 8. Operating and Maintenance Data: Section 01730.

1.02 SUBMITTALS REQUIREMENTS

- A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.
- B. Furnish two (2) original signed copies.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - 1. Product, equipment or work item.
 - 2. Firm name, address and telephone number.
 - 3. Scope
 - 4. Date of beginning of warranty, bond or service and maintenance contract.
 - 5. Duration of warranty, bond or service and maintenance contract.

6. Provide information for Owner's personnel:
 - a. Proper procedure in case of failure.
 - b. Instances which might affect the validity of warranty or bond.
7. Contractor name, address and telephone number.

1.03 FORM OF SUBMITTALS

- A. Prepare in duplicate packets.
- B. Format:
 1. Size 8-1/2 in. x 11 in., punch sheets for 3-ring binder: Fold larger sheets to fit into binders.
 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
 - a. Title of Project.
 - b. Name of Contractor.
- C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.

1.04 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during progress of construction: Submit documents within 10 days after inspection and acceptance.
- B. Otherwise, make submittals within 10 days after date of substantial completion, prior to final request for payment.
- C. For items of work, where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing the date of acceptance as the start of the warranty period.

1.05 SUBMITTALS REQUIRED

Submit warranties, bonds, service and maintenance contracts as specified in the respective sections of the Specifications.

- END OF SECTION -

SECTION 02200**SITE CLEARING****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. Clear site within construction limits of plant life.
- B. Remove grass and topsoil in area of access road and foundation.
- C. Remove root system of trees and shrubs.
- D. Remove surface debris

1.02 RELATED WORK

- A. Section 02220 – Earthwork.

1.03 REGULATORY REQUIREMENTS

Conform to applicable local codes and ordinances for disposal of debris.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION**3.01 CLEARING**

- A. Clear areas required for access to site and execution of work.
- B. Remove trees, shrubs, brush, and other vegetable matter such as snags, bark, and refuse.

3.02 PROTECTION

The Contractor shall not cut or injure any trees or other vegetation outside the easement lines and outside the areas to be cleared, as indicated on the Drawings, without written permission from the Engineer. The Contractor shall be responsible for all damage done outside these lines.

3.03 GRUBBING

From areas to be grubbed, the Contractor shall remove completely all stumps, remove to a depth of at least 24 inches below subgrade elevation all roots larger than 1 1/2 in. in diameter, and remove to a depth of 12 in. all roots larger than 1/2 in. in diameter. Such depths shall be measured from the existing ground surface, the proposed finished grade or subgrade, whichever is lower.

3.04 STRIPPING

All stumps, roots, foreign matter, topsoil, loam, and unsuitable earth shall be stripped from the ground surface. The topsoil and loam shall be utilized insofar as possible, for finished surfacing. Loam shall not be taken from the site.

3.05 DISPOSAL

- A. All material resulting from clearing and grubbing and not scheduled for reuse or stockpiling shall become the property of the Contractor and shall be suitably disposed of off site, unless otherwise directed by the Engineer, in accordance with all applicable laws, ordinances, rules and regulations.
- B. Such disposal shall be performed as promptly as possible after removal of the material and shall not be left until the final period of cleaning up.

3.06 FENCES

Wherever fences need to be removed to provide access to the work or are damaged during the progress of work, they shall be restored or repaired to as good a condition as existed prior to construction at the Contractor's expense. Contractor is responsible for notifying and coordinating with property owner at least one week prior to any fence demolition and shall maintain satisfactory temporary fencing until permanent fence repair is made.

- END OF SECTION -

SECTION 02211**ROUGH GRADING****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. Remove topsoil and stockpile for later reuse.
- B. Excavate subsoil and stockpile for later reuse as directed in Section 02226, Trenching, Backfilling and Compacting.
- C. Grade and rough contour site.

1.02 RELATED WORK

- A. Section 02220 – Earthwork.
- B. Section 02226 – Trenching, Backfilling, and Compacting.

1.03 PROJECT RECORD DOCUMENTS

- A. Submit documents under provisions of Section 01720.
- B. Accurately record location of utilities remaining, rerouted utilities, new utilities by horizontal dimensions, elevations or inverts, and slope gradients.

1.04 PROTECTION

- A. Protect trees and other features remaining as portion of final landscaping.
- B. Protect bench marks, existing structures, fences, roads, sidewalks and other features not designated for demolition.
- C. Protect above or below grade utilities which are to remain.
- D. Contractor shall be responsible for repairing any damage to those items not designated for demolition or removal in a manner satisfactory to the Owner at no additional cost to the Owner.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Topsoil: Excavated material, graded free of roots, rocks larger than one inch, subsoil, debris, and large weeds.
- B. Subsoil: Excavated material, graded free of lumps larger than 12 inches, rocks larger than 12 inches, and debris.

PART 3 - EXECUTION**3.01 PREPARATION**

- A. Identify required lines, levels, contours, and datum.
- B. Identify known below grade utilities. Stake and flag locations.
- C. Identify and flag above grade utilities.
- D. Maintain and protect existing utilities remaining which pass through work area.
- E. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Engineer.

3.02 TOPSOIL EXCAVATION

- A. Excavate topsoil from areas to be further excavated, and stockpile in area designated on site by the Engineer.
- B. Do not excavate wet topsoil.
- C. Stockpile topsoil to depth not exceeding 8 feet.

3.03 SUBSOIL EXCAVATION

- A. Excavate subsoil from indicated areas and stockpile in area designated on site. Excess subsoil may be reused according to Section 02220, Backfilling.
- B. Do not excavate wet subsoil.
- C. Stockpile subsoil to depth not exceeding 8 feet.
- D. When excavation through roots is necessary, perform work by hand and cut roots with a sharp axe.

3.04 TOLERANCES

Top Surface of Subgrade: Plus or minus three inches.

- END OF SECTION -

SECTION 02219**DEMOLITION & SALVAGE****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required for demolition as shown on the Drawings and specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Earthwork: Section 02300

1.03 PROCEDURE

- A. The procedures proposed for the accomplishment of salvage and demolition work shall be submitted for review. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress and timely disconnection of utility services. The procedures shall include a detailed description of the methods and equipment to be used for each operation, and the sequence of operations.
- B. It is the responsibility of the Contractor to visit the site to familiarize himself with the amount of Work that is included under this Section.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.01 DUST CONTROL**

- A. The amount of dust resulting from the demolition shall be controlled to prevent the spread of dust to occupied portions of the plant and to avoid creation of a nuisance in the surrounding area. Use of water will not be permitted when it will result in, or create, hazardous or objectionable conditions such as ice, flooding and pollution.

3.02 DISCONNECTION OF UTILITY SERVICES

- A. Utilities shall be disconnected at the points indicated by the Owner or Engineer and left in a safe condition.

3.03 BURNING

- A. The use of burning at the project site for the disposal of refuse and debris will not be permitted, unless authorized in writing by the Owner.

3.04 PROTECTION OF EXISTING WORK

- A. Existing work to remain shall be protected from damage. Work damaged by the Contractor shall be repaired to match existing work.

3.05 BACKFILL OF STRUCTURES

- A. The portion of the demolished structures remaining below grade shall be backfilled with concrete, masonry, etc., from the demolition or any backfill material which is acceptable to the Engineer. The top two (2) feet of the backfill shall be made up of topsoil and graded to match the existing ground. It shall be free of any of the demolition material. The entire backfill shall be compacted in such a manner as to prevent settlement. All existing demolished basins shall have some method of positive drainage thru the bottom slab as approved by the Engineer.
- B. It is the responsibility of the Contractor to dispose of all excess demolition material from the site as soon as practicable.

3.06 SALVAGE MATERIAL

- A. All equipment, pumps, controls, valves, piping, etc., is the property of the Owner and care shall be taken in its removal so not to damage it in any way. Such salvage material shall be removed and delivered to the Owner to a site designated by him. The Owner has the right to refuse any salvage material, and in such cases it is the responsibility of the Contractor to dispose of the unwanted material.

END OF SECTION

SECTION 02220**EARTHWORK****PART 1 - GENERAL****1.01 DESCRIPTION OF WORK**

- A. Extent of earthwork is indicated on the Drawings.
 - 1. Preparation of subgrade for pavements is included as part of this work.
 - 2. Engineered fill for support of building or basin slabs is included as part of this work.
 - 3. Backfilling of tanks, basins, basements and trenches within building line is included as part of this work.
- B. Excavation for Mechanical/Electrical Work: Excavation and backfill required in conjunction with underground mechanical and electrical utilities and buried mechanical and electrical appurtenances is included as work of this Section.
- C. Definition: "Excavation" consists of removal of all material encountered to subgrade elevations and subsequent disposal or reuse of materials removed.

1.02 REFERENCES

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications, except where more stringent requirements have been specified herein:
 - 1. American Society for Testing and Materials (ASTM)
 - a. A328 Specification for Steel Sheet Piling
 - b. D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³)
 - c. D1556 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
 - d. D1760 Specification for Pressure Treatment of Timber Products
 - e. D2922 Test Methods for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)

1.03 DEFINITIONS

- A. Excavation (or Trenching)
 - 1. Grubbing, stripping, removing, storing and rehandling of all materials of every name and nature necessary to be removed for all purposes incidental to the construction and completion of all the work under construction.

2. All sheeting, sheetpiling, bracing and shoring, and the placing, driving, cutting off and removing of the same.
 3. All diking, ditching, fluming, cofferdamming, pumping, bailing, draining, well pointing, or otherwise disposing of water.
 4. The removing and disposing of all surplus materials from the excavations in the manner specified.
 5. The maintenance, accommodation and protection of travel and the temporary paving of highways, roads and driveways.
 6. The supporting and protecting of all tracks, rails, buildings, curbs, sidewalks, pavements, overhead wires, poles, trees, vines, shrubbery, pipes, sewers, conduits or other structures or property in the vicinity of the work, whether over- or underground or which appear within or adjacent to the excavations, and the restoration of the same in case of settlement or other injury.
 7. All temporary bridging and fencing and the removing of same.
- B. Earth
1. All materials such as sand, gravel, clay, loam, ashes, cinders, pavements, muck, roots or pieces of timber, soft or disintegrated rock, not requiring blasting, barring, or wedging from their original beds, and specifically excluding all ledge or bedrock and individual boulders or masonry larger than one-half cubic yard in volume.
- C. Backfill
1. The refilling of excavation and trenches to the line of filling indicated on the Contract Drawings or as directed using materials suitable for refilling of excavations and trenches; and the compacting of all materials used in filling or refilling by rolling, ramming, watering, puddling, etc., as may be required.
- D. Spoil
1. Surplus excavated materials not required or not suitable for backfills or embankments.
- E. Embankments
1. Fills constructed above the original surface of the ground or such other elevation as specified or directed.
- F. Limiting Subgrade
1. The underside of the pipe barrel for pipelines
 2. The underside of footing lines for structures
- G. Excavation Below Subgrade
1. Excavation below the limiting subgrades of structures or pipelines.

2. Where materials encountered at the limiting subgrades are not suitable for proper support of structures or pipelines, the Contractor shall excavate to such new lines and grades as required.

1.04 RELATED WORK

- A. Dewatering is included elsewhere in this specification.
- B. Erosion and sedimentation control is included in this Division, Section 02270.
- C. Pipe Fitting and Installation is included in this Division, Section 02600.
- D. Seeding is included in this Division, Section 02900.

1.05 QUALITY ASSURANCE

- A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
- B. Testing and Inspection Service: The Owner shall engage the services of a qualified geotechnical engineering, inspection, and testing firm for quality control testing during earthwork operations.

1.06 SUBMITTALS

- A. Test Reports - Excavating: Copies of all test reports and field reports shall be made available to the Owner and the Engineer.
- B. The Contractor shall provide access to site areas, borrow pits and other areas for testing. The Contractor shall also indicate the need for tests to be performed. The Contractor may prepare any tests necessary for the conduct of his work.

1.07 JOB CONDITIONS

- A. Site Information:
 1. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that the Owner will not be responsible for interpretation or conclusions drawn therefrom by Contractor. Data are made available for convenience of Contractor.
 2. Additional test borings and other exploratory operations may be made by Contractor at no cost to Owner.
 3. A geotechnical investigation has been carried out at the site and a report is available upon request. The Contractor shall obtain a copy of this report and shall read, understand follow all the recommendations and requirements contained therein.
- B. Existing Utilities: Prior to commencement of work, the Contractor shall locate existing underground utilities in areas of the work. If utilities are to remain in place, provide adequate means of protection during earthwork operations where required.
- C. Use of Explosives: SEE SECTION 02228

- D. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.
 - 1. Operate warning lights as recommended by authorities having jurisdiction.
 - 2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS - DEFINITIONS

- A. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand.
- B. Drainage Fill: Washed, uniformly graded mixture of crushed stone or crushed gravel conforming to No. 57 of Kentucky Department of Highways Standard Specifications.
- C. Backfill and Non-Structural Fill Materials: Satisfactory soil materials free of debris, waste, frozen materials, vegetable, and other deleterious matter. No. 57 stone is also used as backfill material at selected structures.
- D. Granular Structural Fill: Granular structural fill shall be used in areas where indicated in this specification. Granular structural fill shall consist of a crushed stone conforming to gradation requirements of Kentucky Department of Highways and having less than 5% passing the No. 200 sieve. Placing and compaction of the granular structural fill shall be in general accordance with Kentucky Department of Highways Standard Specifications and this specification.

2.02 FILTER FABRIC

- A. Material shall be non-woven polyester or polypropylene geotextile having an equivalent opening size no finer than U.S. Standard Sieve No. 200 and no coarser than a U.S. Standard Sieve No. 140.
- B. An acceptable product is Tyvar 3601 manufactured by the Dupont Corporation. Other equivalent products shall be submitted to the Engineer for review and approval prior to usage.

PART 3 - EXECUTION

3.01 PREPERATION

- A. Identify required lines, levels, contours, and datum.
- B. Identify known below grade utilities. Stake and flag locations.
- C. Identify and flag above grade utilities.
- D. Maintain and protect existing utilities remaining which pass-through work area.
- E. Complete exploratory excavations at points of interest to determine subgrade material and conditions. Upon discovery of unknown utility or concealed conditions, discontinue affected work; notify Engineer.

3.02 EXCAVATION

- A. Excavation includes excavation to subgrade elevations including excavation of earth, rock, bricks, wood, cinders, and other debris. All excavation of materials shall be included in the lump sum portion of the work and will be UNCLASSIFIED AND NO ADDITIONAL PAYMENT WILL BE MADE REGARDLESS OF TYPE OF MATERIAL ENCOUNTERED.
- B. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be at Contractor's expense.
1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to the Engineer.
 2. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification.
 3. All material which slides, falls or caves into the established limits of excavations due to any cause whatsoever, shall be removed and disposed of at the Contractor's expense and no extra compensation will be paid the Contractor for any materials ordered for refilling the void areas left by the slide, fall or cave-in.
- C. Additional Excavation: When excavation has reached required subgrade elevations, notify the Geotechnical Engineer who will make an inspection of conditions. The surface of the excavated area shall be "proofrolled" with a loaded truck or other heavy construction equipment.
1. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavation deeper and replace excavated material as directed in writing by the Engineer.
 2. Removal of unsuitable material and its replacement as directed will be paid on basis of Contract conditions relative to changes in work.
- D. Stability of Excavations:
1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
 2. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
- E. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces, in good serviceable condition.
1. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
 2. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
 3. Provide permanent steel sheet piling or pressure crested timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under adjacent structures. Cut off tops as required and leave permanently in place. In the

event the Owner directs the Contractor to leave shoring materials in place, the Owner will reimburse the Contractor for the reasonable cost of leaving such materials in place.

- F. Dewatering: It is anticipated that dewatering may be required at excavations.
- G. Material Storage:
1. Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
 2. Dispose of excess soil material and waste materials offsite at no additional cost to the Owner.
- H. Excavation for Structures
1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.
 2. In excavating for footings and foundations, take care not to disturb bottom of excavation. All loose material shall be removed from the excavation just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.
 3. Protruding rock formations that would interfere with uniform footing bearing shall be removed such that the structure will bear upon uniform engineered fill at least 24 inches thick.
- I. Excavation for Pavements: Cut surface under pavements to comply with cross-sections, elevations, and grades as shown.
- J. Trench Excavation:
1. The Contractor shall include in his lump sum bid all trenching and backfill necessary for installation of all pipe as planned and specified. Trenching shall include clearing and grubbing of all trash, and debris encountered in the trenching. The Contractor shall dispose of such material offsite at no extra cost to the Owner.
 2. All existing facilities shall be protected from danger or damage while pipelines are being constructed and backfilled, and from damage due to settlement of the backfill.
 3. In the event any existing structure is damaged, repair and restoration shall be made at once and backfill shall not be replaced until this is done. Restoration and repair shall be such that the damaged structure is equal to or better than its original condition and can serve its purpose as completely as before. All such restoration and repair shall be done without extra cost to the Owner.
 4. Trenches must be dug to lines and grades shown on the Drawings. Hand trenching may be required in areas where machine trenching would result in undue damage to existing structures and facilities.
 5. Sheeting and shoring of trenches shall be provided at the expense of the Contractor where necessary to protect life, property and the new or existing structures from

damage or to maintain maximum permissible trench widths at top of pipe. All necessary materials, including, but not limited to, sheeting, sheet piling, trench jacks, braces, shores and stringers, shall be used to hold trench walls. Sheeting and shoring may be withdrawn as the trenches are being backfilled, after backfill has been tamped over top of the pipe at least 18-inches. If removal before backfill is completed to surface endangers adjacent structures, such as buildings, pipelines, street paving, and sidewalks, then the sheeting and shoring shall be left in place until such danger has passed, and then pulled if practical. Voids caused by sheeting withdrawal shall be backfilled and tamped. If not withdrawn, sheeting shall be cut off at least 18-inches below final surface grade, so there is no obstruction at the ground level. In the event the Owner directs the Contractor to leave shoring materials in place, the Owner will reimburse the Contractor for the reasonable cost of leaving such materials in place.

6. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the Engineer may order stabilization by various means. Exclusive of dewatering normally required for construction, and instability caused by neglect of the Contractor, the payment necessary for stabilization shall be negotiated.
7. The location of the pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before construction on any line is started that would indicate desirable changes in location. The Owner reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by extra units of materials and construction actually involved. The Owner is under no obligation to locate pipelines, so they may be excavated by machine.
8. The Contractor shall only have sufficient trench open ahead of the pipe laying work as necessary for the prosecution of the work, that day. Dig trenches to the uniform width required for the particular item to be installed, sufficiently wide to provide ample working room. Provide a minimum of 9" clearance on both sides of pipe or conduit.
 - a. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
 - b. Where rock is encountered, carry excavation 6-inches below required elevation and backfill with a 6-inch layer of crushed stone or gravel prior to installation of pipe.
 - c. For pipes or conduit 3-inches or less in nominal size and for flat-bottomed, multiple-duct conduit units, excavate to subbase depth indicated or, if not indicated, then to 4-inches below bottom of work to be supported.
 - d. For pipes or conduit 6-inches or larger in nominal size, and mechanical/electrical work indicated to receive subbase, excavate to subbase depth indicated or, if not otherwise indicated, to 6-inches below bottom of work to be supported.
 - e. Except as otherwise indicated, excavate for exterior water piping (water, drainage) so top of piping is no less than 3-feet 6-inches below finish grade.
 - f. Grade bottom of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.

- g. Encase pipe with concrete (full encasement) where trench excavations pass within 18 inches of column or wall footings and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing(s).
 - h. Concrete is specified in Division 3.
 - i. Do not backfill trenches until tests and inspections have been made and backfilling authorized by the Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.
 - j. For piping or conduit less than 3-feet 6-inches below surface of roadways, furnish and install steel casing pipe, minimum wall thickness of 5/16", of sufficient diameter to carry the pipe or conduit to at least two feet beyond outside edge of pavement.
- K. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F (1°C).

3.02 REMOVAL OF WATER

A. General

1. The Contractor shall at all times provide and maintain proper and satisfactory means and devices for the removal of all water entering the excavations, and shall remove all such water as fast as it may collect, in such manner as shall not interfere with the prosecution of the work or the proper placing of pipes, structures, or other work.
2. Unless otherwise specified, all excavations which extend down to or below the static groundwater elevations shall be dewatered by lowering and maintaining the groundwater beneath such excavations at all times when work thereon is in progress, during subgrade preparation and the placing of the structure or pipe thereon.
3. Water shall not be allowed to rise over or come in contact with any masonry, concrete or mortar, until at least 24 hours after placement, and no stream of water shall be allowed to flow over such work until such time as the Engineer may permit.
4. Where the presence of fine grained subsurface materials and a high groundwater table may cause the upward flow of water into the excavation with a resulting quick or unstable condition, the Contractor shall install and operate a well point system to prevent the upward flow of water during construction.
5. Water pumped or drained from excavations, or any sewers, drains or water courses encountered in the work, shall be disposed of in a suitable manner without injury to adjacent property, the work under construction, or to pavements, roads, drives, and water courses. No water shall be discharged to sanitary sewers. Sanitary sewage shall be pumped to sanitary sewers or shall be disposed of by an approved method.
6. Any damage caused by or resulting from dewatering operations shall be the sole responsibility of the Contractor.

B. Work Included

1. The construction and removal of cofferdams, sheeting and bracing, and the furnishing of materials and labor necessary therefor.
2. The excavation and maintenance of ditches and sluiceways.
3. The furnishing and operation of pumps, well points, and appliances needed to maintain thorough drainage of the work in a satisfactory manner.

C. Well Point Systems**1. Installation**

- a. The well point system shall be designed and installed by or under the supervision of an organization whose principal business is well pointing and which has at least five consecutive years of similar experience and can furnish a representative list of satisfactory similar operations.
- b. Well point headers, points and other pertinent equipment shall not be placed within the limits of the excavation in such a manner or location as to interfere with the laying of pipe or trenching operations or with the excavation and construction of other structures.
- c. Detached observation wells of similar construction to the well points shall be installed at intervals of not less than 50 feet along the opposite side of the excavation from the header pipe and line of well points, to a depth of at least 5 feet below the proposed excavation. In addition, one well point in every 50 feet shall be fitted with a tee, plug and valve so that the well point can be converted for use as an observation well. Observation wells shall be not less than 1-½ inches in diameter.
- d. Standby gasoline or diesel powered equipment shall be provided so that in the event of failure of the operating equipment, the standby equipment can be readily connected to the system. The standby equipment shall be maintained in good order and actuated regularly not less than twice a week.

2. Operation

- a. Where well points are used, the groundwater shall be lowered and maintained continuously (day and night) at a level not less than 2 feet below the bottom of the excavation. Excavation will not be permitted at a level lower than 2 feet above the water level as indicated by the observation wells.
- b. The effluent pumped from the well points shall be examined periodically by qualified personnel to determine if the system is operating satisfactorily without the removal of fines.
- c. The water level shall not be permitted to rise until construction in the immediate area is completed and the excavation backfilled.

3.03 STORAGE OF MATERIALS

- A. Sod
 - 1. Any sod cut during excavation shall be removed and stored during construction so as to preserve the grass growth. Sod damaged while in storage shall be replaced in like kind at the sole expense of the Contractor.
- B. Topsoil
 - 1. Topsoil suitable for final grading shall be removed and stored separately from other excavated material.
- C. Excavated Materials
 - 1. All excavated materials shall be stored in locations so as not to endanger the work, and so that easy access may be had at all times to all parts of the excavation. Stored materials shall be kept neatly piled and trimmed, so as to cause as little inconvenience as possible to public travel or to adjoining property holders.
 - 2. Special precautions must be taken to permit access at all times to fire hydrants, fire alarm boxes, police and fire department driveways, and other points where access may involve the safety and welfare of the general public.

3.04 BACKFILL AND FILL

- A. General:
 - 1. All material to be used as backfill material shall be tested and approved by the Geotechnical Engineer prior to backfilling excavations.
 - 2. With the exception of the organic and inorganic debris, and topsoil, the on-site soil removed from the excavations could be used as non-structural fill or backfill material provided the moisture content of the soil is within acceptable limits. However, offsite borrow material may be required for use as non-structural fill. The use of off-site borrow material shall not result in additional compensation for the Contractor.
 - 3. Place acceptable backfill material in maximum 6-8" lifts (loose thickness) to required subgrade elevations, for each area classification listed below.
 - a. In excavations, use satisfactory excavated or borrow material.
 - b. Under slabs, use drainage fill material for a minimum depth of 6-inches. Below drainage fill use satisfactory excavated or borrow material.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
 - 1. Acceptance of construction below finish grade.
 - 2. Inspection, testing, approval, and recording locations of underground utilities.
 - 3. Removal of concrete formwork.

4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
5. Removal of trash and debris.

C. Compaction:

1. Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.
 - a. Fill under slab-on-grade shall be compacted to 98% Standard Proctor Density, ASTM D698, at a moisture content between 2 percent below to 3 percent above the optimum moisture content.
 - b. Granular structural fill under foundation elements, i.e., footings and base slabs for tanks and basins shall be compacted to 98% Standard Proctor Density, ASTM D698, at a moisture content between 2 percent below to 3 percent above the optimum moisture content.
2. Moisture Control
 - a. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface or subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - b. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
 - c. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing, or pulverizing until moisture content is reduced to the optimum moisture for compaction.
3. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

D. Backfilling Trenches:

1. Backfilling shall be accomplished as soon as practical after pipe has been laid and jointing and alignment approved. Packing of crushed rock between joints shall be uniform and progress as the pipe laying progresses. This is in order to avoid danger of misalignment from slides, flooding or other causes. The Engineer shall be given a maximum of 24 hours for inspection before backfilling.
2. The backfill over the pipe shall be in accordance with the details shown on the Drawings for bedding and backfilling pipe.

3. In case maximum permissible trench widths (as designated by the pipe manufacturer) are exceeded, the Contractor shall furnish crushed rock backfill to a minimum of 12-inches over the top of pipe at no extra cost to the Owner.
4. If additional earth is required for back filling, it must be obtained and placed by the Contractor.
5. In the case of street, highway, railroad, sidewalk and driveway crossings; or within any roadway paving; or about manholes, valve and meter boxes; the backfill must be mechanically tamped in not over 6 inch layers, measured loose. Alternate method of compacting backfill shall be used, if refill material is in large hard lumps (crushed rock excepted) which cannot be consolidated without leaving voids.
6. Where traffic on streets, driveways, railroads, sidewalks and highways requires temporary surfacing, backfilling shall be terminate 4-inches below original ground level and 4-inches to 6-inches of dense graded aggregate shall be placed on the trench. Backfill shall be maintained easily passable to traffic at original ground level, until acceptance of project or replacement of paving or sidewalks.
7. The Contractor shall protect all sewer, gas, electric, telephone, water, and drain pipes or conduits from damage while pipelines are being constructed and backfilled, and from danger due to settlement of trench backfill.
8. No extra payment shall be made for backfilling of any kind, except as specified hereinbefore. Backfilling shall be included as a part of the lump sum bid. No extra payment will be made to the Contractor for supplying outside materials for backfill.
9. On completion of the project, all backfill shall be dressed; holes filled; and surplus material hauled away. All permanent walks, street paving, roadway, etc., shall be restored and repaved to match existing pavement thickness over a width equal to the trench width plus 2 feet. A compacted subbase of 12" of KDOT DGA crushed stone with less than 5% passing the No. 200 sieve shall be added under concrete pavements (10" under asphalt concrete pavement).

3.05 GRADING

- A. General: Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.
- B. Grading Outside Building Lines:
 1. All materials used for backfill around structures shall be of a quality acceptable to the Engineer and shall be free from large or frozen lumps, wood and other extraneous material. All spaces excavated and not occupied by footings, foundations, walls or other permanent work shall be refilled with earth up to the surface of the surrounding ground, unless otherwise specified, with sufficient allowance for settlement. In making the fills and terraces around the structures, the fill shall be placed in layers not exceeding 8-inches in depth and shall be kept smooth as the work progresses. Each layer of the fill shall be compacted. Sections of the fill immediately adjacent to buildings or structures shall be thoroughly compacted by means of mechanical tamping or hand tamping as may be required by the conditions encountered. All fills shall be placed so as to load structures symmetrically.

2. As set out hereinbefore, rough grading shall be held below finished grade and then the topsoil, which has been stockpiled, shall be evenly spread over the surface. The grading shall be brought to the levels shown on the Drawings. Final dressing shall be accomplished by hand work or machine work, or a combination of these methods as may be necessary to produce a uniform and smooth finish to all parts of the regrade. The surface shall be free from clods greater than 2-inches in diameter. Excavated rock may be placed in the fills, but it shall be thoroughly covered. Rock placed in fills shall not be closer than 12-inches from finished grade.
3. Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:
 - a. Walks: Shape surface of areas under walks to line, grade, and cross-section, with finish surface not above or 1.0 inch below required subgrade elevation.
 - b. Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than 1.0 in. below required subgrade elevation.
- C. Grading Surface of Fill Under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1.0 in. above or 1.0 in. below required subgrade elevation when tested with a 10-ft. straightedge.
- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or standard proctor density for each area classification.
- E. Slope Protection and Erosion Control: Conform to the requirements of Section 02270 for permanent slope protection and erosion control.

3.06 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction:
 1. Allow the Geotechnical Engineer to inspect and report to the Engineer on findings and approve subgrades and fill layers before further construction work is performed.
 2. Perform field density tests in accordance with ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2992 (nuclear density method), as applicable and at a frequency necessary to be reasonably assured that adequate compaction is achieved.
- B. If in the opinion of the Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense to the Owner.

3.07 MAINTENANCE

- A. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.
- B. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, or other finish), add backfill material, compact, and

replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.08 DISPOSAL OF EXCESS NON-ORGANIC SOIL AND ROCK

- A. General: All excess excavated material shall become the property of the Contractor and shall be disposed by him outside the project limits. It is the Contractor's responsibility to locate a suitable waste area off-site, obtain necessary permits or use of the waste area and be in compliance with applicable laws and regulations.

-- END OF SECTION --

SECTION 02226**TRENCHING, BACKFILLING AND COMPACTING****PART 1 GENERAL****1.01 SUMMARY**

- A. This Section includes excavation and backfill as required for pipe installation or other construction in the trench, and removal and disposal of water, in accordance with the applicable provisions of the Section entitled "Earthwork" unless modified herein.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION**3.01 EXCAVATION**

- A. The trench excavation shall be located as shown on the Contract Drawings or as specified. Under ordinary conditions, excavation shall be by open cut from the ground surface. Where the depth of trench and soil conditions permit, tunneling may be required beneath cross walks, curbs, gutters, pavements, trees, driveways, railroad tracks and other surface structures. No additional compensation will be allowed for such tunneling over the price bid for open cut excavation of equivalent depths below the ground surface unless such tunnel excavation is specifically provided for in the Contract Documents.
- B. Trenches shall be excavated to maintain the depths as shown on the Contract Drawings or as specified for the type of pipe to be installed.
- C. The alignment and depth shall be determined and maintained by the use of a string line installed on batter boards above the trench, a double string line installed along side of the trench or a laser beam system.
- D. The minimum width of trench excavation shall be 6-inches on each side of the pipe hub for 21-inch diameter pipe and smaller and 12-inches on each side of the pipe hub for 24-inch diameter pipe and larger.
- E. Trenches shall not be opened for more than 300 feet in advance of pipe installation nor left unfilled for more than 100 feet in the rear of the installed pipe when work is in progress without the consent of the Engineer. Open trenches shall be protected and barricaded as required.
- F. Bridging across open trenches shall be constructed and maintained where required.

3.02 SHORING, SHEETING, AND BRACING OF EXCAVATION

- A. Where unstable material is encountered or where the depth of excavation in earth exceeds five (5) feet, the sides of the trench or excavation shall be supported by substantial sheeting, bracing, and shoring, or the sides sloped to the angle of repose. Sloping the sides of the ditch to the angle will not be permitted in streets, roads, narrow rights-of-way or other constricted

areas unless otherwise specified. The design and installation of all sheeting, sheet piling, bracing and shoring shall be based on computations of pressure exerted by the materials to be retained under obtaining conditions. Adequate and proper shoring of all excavations shall be the entire responsibility of the Contractor; however, the Engineer may require the submission of shoring plans (accompanied by supporting computations) for approval prior to the Contractor undertaking any portion of the work. The standards of the Federal Occupational Safety and Health Act and the Kentucky Labor Cabinet shall be followed.

- B. Foundations, adjacent to where the excavation is to be made below the depth of the existing foundation, shall be supported by shoring, bracing or underpinning as long as the excavation shall remain open, or thereafter if required to insure the stability of the structure supported by the foundation, and the Contractor shall be held strictly responsible for any damage to said foundations.
- C. Solid sheeting will be required for wet or unstable material. It shall consist of continuous vertical sheet piling of timber or steel with suitable wales and braces.
- D. Care shall be taken to avoid excessive backfill loads on the completed pipelines and the trench width requirements at the level of the crown of the pipe and at the level of a road or street be strictly observed.
- E. Trench sheeting shall not be removed until sufficient backfill has been placed to protect the pipe.
- F. All sheeting, planking, timbering, bracing and bridging shall be placed, renewed and maintained as long as is necessary.

3.03 SUBGRADE PREPARATION FOR PIPE

- A. Where pipe is to be laid on undisturbed bottom of excavated trench, mechanical excavation shall not extend lower than the finished subgrade elevation at any point.
- B. Where pipe is to be laid on special granular material the excavation below subgrade shall be to the depth specified or directed. The excavation below subgrade shall be refilled with special granular material as specified or directed, shall be deposited in layers not to exceed 6 inches and shall be thoroughly compacted prior to the preparation of pipe subgrade.
- C. The subgrade shall be prepared by shaping with hand tools to the contour of the pipe barrel to allow for uniform and continuous bearing and support on solid undisturbed ground or embedment for the entire length of the pipe.
- D. Pipe subgrade preparation shall be performed immediately prior to installing the pipe in the trench. Where bell holes are required they shall be made after the subgrade preparation is complete and shall be only of sufficient length to prevent any part of the bell from becoming in contact with the trench bottom and allowing space for joint assembly.

3.04 STORAGE OF MATERIALS

- A. Where conditions do not permit storage of materials adjacent to the trench, the material excavated from a length as may be required, shall be removed by the Contractor, at his cost and expense, as soon as excavated. The material subsequently excavated shall be used to refill the trench where the pipe had been built, provided it be of suitable character. The excess material shall be removed to locations selected and obtained by the Contractor.

1. The Contractor shall, at his cost and expense, bring back adequate amounts of satisfactory excavated materials as may be required to properly refill the trenches.
- B. If directed by the Engineer, the Contractor shall refill trenches with select fill or other suitable materials and excess excavated materials shall be disposed of as spoil.

3.05 REMOVAL OF WATER AND DRAINAGE

- A. The Contractor shall at all times provide and maintain proper and satisfactory means and devices for the removal of all water entering the trench and shall remove all such water as fast as it may collect, in such manner as shall not interfere with the prosecution of the work.
- B. The removal of water shall be in accordance with the Section entitled "Earthwork".

3.06 PIPE EMBEDMENT

- A. All pipe shall be protected from lateral displacement and possible damage resulting from superimposed backfill loads, impact or unbalanced loading during backfilling operations by being adequately embedded in suitable pipe embedment material. To ensure adequate lateral and vertical stability of the installed pipe during pipe jointing and embedment operations, a sufficient amount of the pipe embedment material to hold the pipe in rigid alignment shall be uniformly deposited and thoroughly compacted on each side, and back of the bell, of each pipe as laid.
- B. Concrete cradle and encasement of the class specified shall be installed where and as shown on the Contract Drawings or ordered by the Engineer. Before any concrete is placed, the pipe shall be securely blocked and braced to prevent movement or flotation. The concrete cradle or encasement shall extend the full width of the trench as excavated unless otherwise authorized by the Engineer. Where concrete is to be placed in a sheeted trench it shall be poured directly against sheeting to be left in place or against a bond-breaker if the sheeting is to be removed.
- C. Embedment materials placed above the centerline of the pipe or above the concrete cradle to a depth of 12 inches above the top of the pipe barrel shall be deposited in such manner as to not damage the pipe. Compaction shall be as required for the type of embedment being installed.

3.07 BACKFILL ABOVE EMBEDMENT

- A. The remaining portion of the pipe trench above the embedment shall be refilled with suitable materials compacted as specified.
 1. Where trenches are within the ditch-to-ditch limits of any street or road or within a driveway or sidewalk, or shall be under a structure, the trench shall be refilled in horizontal layers not more than 8 inches in thickness, and compacted to obtain 95% maximum density, and determined as set forth in the Section entitled "Earthwork".
 2. Where trenches are in open fields or unimproved areas outside of the ditch limits of roads, the backfilling may be by placing the material in the trench and mounding the surface.
 3. Hand tamping shall be required around buried utility lines or other subsurface features that could be damaged by mechanical compaction equipment.

- B. Backfilling of trenches beneath, across or adjacent to drainage ditches and water courses shall be done in such a manner that water will not accumulate in unfilled or partially filled trenches and the backfill shall be protected from surface erosion by adequate means.
 - 1. Where trenches cross waterways, the backfill surface exposed on the bottom and slopes thereof shall be protected by means of stone or concrete rip-rap or pavement.
- C. All settlement of the backfill shall be refilled and compacted as it occurs.
- D. Temporary pavement shall be placed as specified in the Section 02700 entitled "Restoration of Surfaces".

-END OF SECTION-

SECTION 02255**CRUSHED STONE AND DENSE GRADED AGGREGATE****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Furnish and install crushed stone for miscellaneous uses as shown on the Drawings, as called for in the Specifications.
- B. Sizes, types, and quality of crushed stone are specified in this Section, but its use for replacement of unsuitable material, pavement base, and similar uses is specified in detail elsewhere in the Specifications. The Engineer may order the use of crushed stone for purposes other than those specified in other Sections, if, in his opinion, such use is advisable. Payment for same will be subject to negotiation.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. When referred to in these Specifications, crushed stone shall be Number 57 graded in accordance with the Kentucky Department of Highways, Standard Specifications, latest edition, unless otherwise noted.
- B. When referred to in these Specifications, dense graded aggregate (DGA) shall be crushed stone classified by the Kentucky Department of Highways, Standard Specifications, latest edition, and conforming to the following requirements:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 Inch	100
3/4 Inch	70 - 100
1/2 Inch	50 - 80
#4	30 - 65
#10	17 - 50
#40	8 - 30
#200	2 - 10

PART 3 - EXECUTION**3.01 INSTALLATION**

- A. Crushed stone shall be placed and compacted in accordance with the Kentucky Department of Highways, Standard Specifications.
- B. Crushed stone shall be placed in those areas as shown on the Drawings.

-- END OF SECTION --

SECTION 02270**SLOPE PROTECTION AND EROSION CONTROL****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. The Contractor shall do all work and take all measures necessary to control soil erosion resulting from construction operations, shall prevent the flow of sediment from the construction site, and shall contain construction materials (including excavation and backfill) within his protected working area to prevent damage to adjacent property.
- B. The Contractor shall not employ any construction method that violates a rule, regulation, guideline, or procedure established by Federal, State, or local agencies having jurisdiction over the environmental effects of construction. The Contractor shall be responsible for obtaining all associated permits.
- C. Pollutants such as chemicals, fuels, lubricants, bitumen, raw sewage, and other harmful waste shall not be discharged into or alongside of any body of water or into natural or man-made channels leading thereto.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Temporary Slope Protection and Erosion Control:

Bales may be hay or straw and shall be reasonably clean and free of noxious weeds and deleterious materials. Filter fabric for sediment traps shall be of suitable materials acceptable to the Engineer.
- B. Permanent Slope Protection and Erosion Control:

On slopes 2H:1V and steeper and where shown on the drawings place Type A Dumped Rock Fill with a 24-inch minimum thickness over non-woven geotextile filter fabric.

PART 3 - EXECUTION**3.01 METHODS OF CONSTRUCTION**

- A. The Contractor shall use any of the acceptable methods necessary to control soil erosion and prevent the flow of sediment to the maximum extent possible. These methods shall include, but not be limited to, the use of water diversion structures, diversion ditches and settling basins.
- B. Construction operations shall be restricted to the areas of work indicated on the Drawings and to the area which must be entered for the construction of temporary or permanent facilities. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of the wetlands and adjacent watercourses. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, or other control devices or methods as necessary to control erosion.

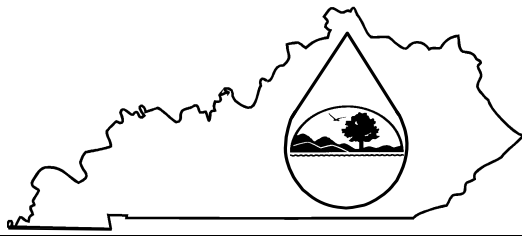
- C. Excavated soil material shall not be placed adjacent to the wetlands or watercourses in a manner that will cause it to be washed away by high water or runoff. Earth berms or diversions shall be constructed to intercept and divert runoff water away from critical areas. Diversion outlets shall be stable or shall be stabilized by means acceptable to the Engineer. If for any reason construction materials are washed away during construction, the Contractor shall remove those materials from the fouled areas as directed by the Engineer.
- D. For work within easements, all materials used in construction such as excavation, backfill, roadway, and pipe bedding and equipment shall be kept within the limits of the easements.
- E. The Contractor shall not pump silt-laden water from trenches or other excavations into the wetlands, or adjacent watercourses. Instead, silt-laden water from his excavations shall be discharged within areas surrounded by baled hay or into sediment traps to ensure that only sediment-free water is returned to the watercourses. Damage to vegetation by excessive watering or silt accumulation in the discharge area shall be avoided.
- F. Prohibited construction procedures include, but are not limited to, the following:
 1. Dumping of spoil material into any streams, wetlands, surface waters, or unspecified locations.
 2. Indiscriminate, arbitrary, or capricious operation of equipment in wetlands or surface waters.
 3. Pumping of silt-laden water from trenches or excavations into surface waters, or wetlands.
 4. Damaging vegetation adjacent to or outside of the construction area limits.
 5. Disposal of trees, brush, debris, paints, chemicals, asphalt products, concrete curing compounds, fuels, lubricants, insecticides, wash water from concrete trucks or hydro seeders, or any other pollutant in wetlands, surface waters, or unspecified locations.
 6. Permanent or unauthorized alteration of the flow line of any stream.
 7. Open burning of debris from the construction work.
- G. Any temporary working roadways required shall be clean fill approved by the Engineer. In the event fill is used, the Contractor shall take every precaution to prevent the fill from mixing with native materials of the site. All such foreign fill materials shall be removed from the site following construction.

3.02 EROSION CHECKS

The Contractor shall furnish and install baled hay or straw erosion checks in all locations indicated on the Drawings, surrounding the base of all deposits of stored excavated material outside of the disturbed area, and where indicated by the Engineer. Checks, where indicated on the Drawings, shall be installed immediately after the site is cleared and before trench excavation is begun at the location indicated. Checks located surrounding stored material shall be located approximately 6 ft. from that material. Bales shall be held in place with two 2 in. by 2 in. by 3 ft. wooden stakes. Each bale shall be butted tightly against the adjoining bale to preclude short circuiting of the erosion check.

- END OF SECTION -

KPDES FORM NOI-SW



**Kentucky Pollutant Discharge Elimination System
 (KPDES)
 Notice of Intent (NOI)
 for Storm Water Discharges
 Associated with Industrial Activity Under the
 KPDES General Permit**

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:		Phone:	
Address:		Status of Owner/Operator:	
City, State, Zip Code:			

II. Facility/Site Location Information

Name:			
Address:			
City, State, Zip Code:			
County:			
Site Latitude: (degrees/minutes/seconds)		Site Longitude: (degrees/minutes/seconds)	

III. Site Activity Information

MS4 Operator Name:				
Receiving Water Body:				
Are there existing quantitative data?	Yes <input type="checkbox"/>	If Yes, submit with this form.		
	No <input type="checkbox"/>			
SIC or Designated Activity Code Primary		2nd		3rd
				4th
If this facility is a member of a Group Application, enter Group Application Number:				
If you have other existing KPDES Permits, enter Permit Numbers:				

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:		Completion Date:	
Estimated Area to be disturbed (in acres):			
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:			
Signature:		Date:	

**Kentucky Pollutant Discharge Elimination System (KPDES)
Instructions
Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity
To Be Covered Under The KPDES General Permit**

WHO MUST FILE A NOTICE OF INTENT (NOI) FORM

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the **Storm Water Contact, Industrial Section, Kentucky Division of Water at (502) 564-3410.**

WHERE TO FILE NOI FORM

NOIs must be sent to the following address:

**Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601**

COMPLETING THE FORM

Type or print legibly in the appropriate areas only. If you have any questions regarding the completion of this form call the **Storm Water Contact, Industrial Section, at (502) 564-3410.**

SECTION I - FACILITY OPERATOR INFORMATION

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility.

F = Federal M = Public (other than federal or state)
S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code.

SECTION III - SITE ACTIVITY INFORMATION

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges. If data is available submit with this form.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section II of this application.

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other KPDES permits presently issued for the facility or site listed in Section II, list the permit numbers.

SECTION IV - ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION ACTIVITIES ONLY

Construction activities must complete Section IV in addition of Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION V - CERTIFICATION

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

KPDES FORM NOT-SW

	<p>Kentucky Pollutant Discharge Elimination System (KPDES)</p> <p>NOTICE OF TERMINATION (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Industrial Activity</p>
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Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the KPDES program.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.
(Please see instructions on back before completing this form.)

I. PERMIT INFORMATION

KPDES Storm Water General Permit Number:
Check here if you are no longer the Operator of the Facility: <input type="checkbox"/>
Check here if the Storm Water Discharge is Being Terminated: <input type="checkbox"/>

II. FACILITY OPERATOR INFORMATION

Name:
Address:
City/State/Zip Code:
Telephone Number:

III. FACILITY/SITE LOCATION INFORMATION

Name:
Address:
City/State/Zip Code:

Certification: I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a KPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity of waters of the Commonwealth is unlawful under the Clean Water Act and Kentucky Regulations where the discharge is not authorized by a KPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Kentucky Revised Statutes.

NAME (Print or Type)	TITLE
SIGNATURE	DATE

INSTRUCTIONS
NOTICE OF TERMINATION (NOT) OF COVERAGE UNDER THE KPDES GENERAL PERMIT
FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26 (b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a KPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles have been employed.

Where to File NOT Form

Send this form to the following address:

**Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
14 Reilly Road, Frankfort Office Park
Frankfort, KY 40601**

Completing the Form

Type or print legibly in the appropriate areas and according to the instructions given for each section. If you have questions about this form, call the Storm Water Contact, Industrial Section, at (502) 564-3410.

Section I - Permit Information

Enter the existing KPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, **call the Storm Water Contact, Industrial Section at (502) 564-3410.**

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II - Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III - Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

Section IV - Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principal executive

SECTION 02500**BITUMINOUS PAVEMENT****PART 1 - GENERAL****1.01 DESCRIPTION OF THE WORK**

Extent of bituminous pavement paving is shown on the Drawings, including roads, driveways and parking areas.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Unless noted, all specification designations refer to the Kentucky Department of Highways Standard Specifications, (KDOHSS) Latest Edition. Appropriate portions of the referenced sections of the Specifications shall apply, but all work shall be included in bid items described herein unless otherwise specified or shown on the Drawings.
- B. Preparation of subbase is specified in this Division, Section 02200.
- C. Crushed stone and dense graded aggregate are specified in this Division, Section 02255.

1.03 QUALITY ASSURANCE

- A. Performance: Bituminous seal coat that fails as the result of not meeting the requirements of these Specification shall be corrected at the Contractor's expense.
- B. The design plant mix shall be submitted to the Engineer for review and acceptance. The submittal shall include the last date the mixture was approved by the Kentucky Department of Highways for use on a state road project; and the location where the mixture was recently used, and the name and address of the paving contractor.

PART 2 - PRODUCTS**2.01 BITUMINOUS CONCRETE SURFACE MATERIAL**

- A. Aggregates shall meet the applicable requirements of the KDOHSS.
- B. Bituminous materials shall meet the applicable requirements of the KDOHSS.
- C. Bituminous materials for tack coat shall be one of the following: SS-1, SS-1h, CSS-1, CSS-1h, AE-60, RS-1, CRS-1, RC-70 or RC-250.
- D. Steel, wood or other suitable material shall be of size and strength necessary to resist movement during bituminous placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects.

2.02 BITUMINOUS SEAL COAT MATERIAL

- A. Coarse aggregate shall be Kentucky Department of Highways Standard Size No. 8, meeting applicable requirements of Section 805 of KDOHSS.
- B. Bituminous materials shall meet applicable requirements of Section 806 of KDOHSS.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

The road shall be swept with an approved mechanical sweeper and with wire hand brooms, when necessary. Special care shall be taken to clean the edges of the surface so that full width of the roadway to be treated shall be uniformly clean. Where any mud or earth exists, it shall be removed sufficiently in advance of application of bituminous material to allow the surface to become thoroughly dry.

3.02 BITUMINOUS CONCRETE PAVING

- A. Composition of Mixtures: Surface pavement mixture, meeting requirements of the KDOHSS shall be used as determined by local plant mix availability. The mixture shall have been approved recently by the Kentucky Department of Highways, used recently on a state project, and conform to the requirements below when tested in accordance with ASTM D 1559-76:

Stability, minimum pounds	1200
Flow, 0.01 inch	Min. 6, Max. 16
Percent air voids	Min. 4, Max. 8
Minimum voids in mineral aggregate, percent: 3/4 inch	14
1 inch	13

- B. Construction Methods: Construction requirements shall conform to applicable requirements of the KDOHSS.
- C. A tack coat shall be required to bond new paving to the surface of concrete or brick pavements and bases or existing bituminous surfaces. It shall be applied in accordance with Section 407 of KDOHSS.
- D. Where bituminous paving is placed against vertical surfaces such as curbs, gutters, manhole frames, valve boxes, etc., the vertical face shall be tack coated to seal the surface. Where these surfaces are inaccessible to pressure distributor, the tack coat may be brushed or broomed into place. The tack coat shall not be allowed to spill over onto any horizontal surface outside the area to be paved.
- E. Unless otherwise indicated on the Drawings or in these Specifications, the compacted thickness of the bituminous concrete paving shall be a minimum of 2 inches and the minimum ambient temperature for placing shall be 40 deg F. Mixing and laying temperatures shall be as follows:

Aggregates	Min. 240 deg F Max. 325 deg F
Asphalt Cement	Min. 225 deg F Max. 325 deg F
Mixture at Plant (measured in truck)	Min. 240 deg F Max. 325 deg F
Mixture when Placed (measured in truck when discharging)	275 deg \pm 20 deg F**

**The 275 deg F + 20 deg F mixture placing temperature is based on 275 deg F being about the ideal temperature for obtaining optimum compaction under average conditions. However, when the distance between asphalt plant and the job is such that specified placing temperatures cannot be maintained even though maximum mixing temperatures are covered, insulated hauling equipment as described below are used, the minimum placing temperature shall be 225 deg F.

- F. Trucks for hauling bituminous mixtures shall have tight, clean and smooth metal beds that have been sprayed with a minimum amount of soap emulsion, paraffin oil, or other approved material

that is not detrimental to the mixture to prevent the mixture from adhering to the beds. All trucks shall be equipped with covers of sufficient size to completely cover the located material and all covers shall be securely fastened in place before the truck leaves the plant. Truck beds shall be insulated, when necessary, to maintain the specified temperature to the point of delivery. Any truck causing excessive segregation of material by its spring suspension or other contributing factors shall be discharged from the work until such conditions are corrected.

- G. The Contractor shall have an accurate thermometer on the job at all times for verifying all temperature requirements and for taking temperature measurements whenever requested by the Engineer or Owner. The Contractor shall closely control temperature and compaction requirements to achieve quality bituminous paving and related work.
- H. Bituminous paving that fails as the result of not meeting the requirements of these Specifications shall be removed and replaced at the Contractor's expense.

- END OF SECTION -

SECTION 02502
RESTORATION OF SURFACES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes restoration and maintenance of all types of surfaces, sidewalks, curbs, gutters, culverts and other features disturbed, damaged or destroyed during the performance of the work under or as a result of the operations of the Contract.
- B. The quality of materials and the performance of work used in the restoration shall produce a surface or feature equal to the condition of each before the work began.

1.02 REFERENCES

- A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:
 - 1. American Society for Testing and Materials (ASTM)
 - a. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³)

1.03 SUBMITTALS

- A. In addition to those submittals identified in the General Provisions, the following items shall be submitted:
 - 1. A schedule of restoration operations. After an accepted schedule has been agreed upon it shall be adhered to unless otherwise revised with the approval of the Engineer.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 GENERAL

- A. In general, permanent restoration of paved surfaces will not be permitted until one months' time has elapsed after excavations have been completely backfilled as specified. A greater length of time, but not more than nine months may be allowed to elapse before permanent restoration of street surfaces is undertaken, if additional time is required for shrinkage and settlement of the backfill.
- B. The replacement of surfaces at any time, as scheduled or as directed, shall not relieve the Contractor of responsibility to repair damages by settlement or other failures.

3.02 TEMPORARY PAVEMENT

- A. Immediately upon completion of refilling of the trench or excavation, the Contractor shall place a temporary pavement over all disturbed areas of streets, driveways, sidewalks, and other traveled places where the original surface has been disturbed as a result of his operations.
- B. Unless otherwise specified or directed the temporary pavement shall consist of compacted run-of-crusher limestone to such a depth as required to withstand the traffic to which it will be subjected.
- C. Where concrete pavements are removed, the temporary pavement shall be surfaced with "cold patch". The surface of the temporary pavement shall conform to the slope and grade of the area being restored.
- D. For dust prevention, the Contractor shall treat all surfaces, not covered with cold patch, as frequently as may be required.
- E. The temporary pavement shall be maintained by the Contractor in a safe and satisfactory condition until such time as the permanent paving is completed. The Contractor shall immediately remove and restore all pavement as shall become unsatisfactory.

3.03 PERMANENT PAVEMENT REPLACEMENT

- A. The permanent and final repaving of all streets, driveways and similar surfaces where pavement has been removed, disturbed, settled or damaged by or as a result of performance of the Contract shall be repaired and replaced by the Contractor, by a new and similar pavement.
 - 1. The top surface shall conform with the grade of existing adjacent pavement and the entire replacement shall meet the current specifications of the local community for the particular types of pavement.
 - 2. Where the local community has no specification for the type of pavement, the work shall be done in conformity with the State Department of Transportation Standard which conforms the closest to the type of surfacing being replaced, as determined by the Engineer.

3.04 PREPARATION FOR PERMANENT PAVEMENT

- A. When scheduled and within the time specified, the temporary pavement shall be removed and a base prepared, at the depth required by the local community or Highway Permit, to receive the permanent pavement.
 - 1. The base shall be brought to the required grade and cross-section and thoroughly compacted before placing the permanent pavement.
 - 2. Any base material which has become unstable for any reason shall be removed and replaced with compacted base materials.
- B. Prior to placing the permanent pavement all service boxes, manhole frames and covers and similar structures within the area shall be adjusted to the established grade and cross-section.

- C. The edges of existing asphalt pavement shall be cut a minimum of 1 foot beyond the excavation or disturbed base whichever is greater.
 - 1. All cuts shall be parallel or perpendicular to the centerline of the street.

3.05 ASPHALT PAVEMENT

- A. The permanent asphalt pavement replacement for streets, driveways and parking area surfaces shall be replaced with bituminous materials of the same depth and kind as the existing unless otherwise specified.
- B. Prior to placing of any bituminous pavement a sealer shall be applied to the edges of the existing pavement and other features.
- C. The furnishing, handling and compaction of all bituminous materials shall be in accordance with the State Department of Transportation Standards.

3.06 CONCRETE PAVEMENT AND PAVEMENT BASE

- A. Concrete pavements and concrete bases for asphalt, brick or other pavement surfaces shall be replaced with Class "B" Concrete, air-entrained.
- B. Paving slabs or concrete bases shall be constructed to extend 1 foot beyond each side of the trench and be supported on undisturbed soil. Where such extension of the pavement will leave less than 2 feet of original pavement slab or base, the repair of the pavement slab or base shall be extended to replace the slab to the original edge of the pavement or base unless otherwise indicated on the Contract Drawings.
- C. Where the edge of the pavement slab or concrete base slab falls within the excavation, the excavation shall be backfilled with Special Backfill compacted to 95% maximum dry density as determined by ASTM D 698 up to the base of the concrete.
- D. The new concrete shall be of the same thickness as the slab being replaced and shall contain reinforcement equal to the old pavement.
 - 1. New concrete shall be placed and cured in accordance with the applicable provisions of the State Department of Transportation Standards.

3.07 STONE OR GRAVEL PAVEMENT

- A. All pavement and other areas surfaced with stone or gravel shall be replaced with material to match the existing surface unless otherwise specified.
 - 1. The depth of the stone or gravel shall be at least equal to the existing.
 - 2. After compaction the surface shall conform to the slope and grade of the area being replaced.

3.08 CONCRETE WALKS, CURBS AND GUTTER REPLACEMENT

- A. Concrete walks, curbs and gutters removed or damaged in connection with or as a result of the construction operations shall be replaced with new construction.
 - 1. The minimum replacement will be a flag or block of sidewalk and 5 feet of curb or gutter.

- B. Walks shall be constructed of Class "B" concrete, air-entrained with KY-DOT #2 stone aggregate on a 4-inch base of compacted gravel or stone.
 - 1. The walk shall be not less than 4 inches in thickness or the thickness of the replaced walk where greater than 4 inches, shall have construction joints spaced not more than 25 feet apart, shall have expansion joints spaced not more than 50 feet apart and shall be sloped at right angles to the longitudinal centerline approximately inch per foot of width.
- C. 1/2-inch expansion joint material shall be placed around all objects within the sidewalk area as well as objects to which the new concrete will abut, such as valve boxes, manhole frames, curbs, buildings and others.
- D. Walks shall be hand-floated and broom-finished, edged and grooved at construction joints and at intermediate intervals matching those intervals of the walk being replaced.
 - 1. The intermediate grooves shall be scored a minimum of 1/4 of the depth of the walk.
 - 2. The lengths of blocks formed by the grooving tool, and distances between construction and expansion joints shall be uniform throughout the length of the walk in any one location.
- E. The minimum length of curb or gutter to be left in place or replaced shall be 5 feet. Where a full section is not being replaced, the existing curb or gutter shall be saw cut to provide a true edge.
 - 1. The restored curb or gutter shall be the same shape, thickness and finish as being replaced and shall be built of the same concrete and have construction and expansion joints as stated above for sidewalks.
- F. All concrete shall be placed and cured as specified in the Section for concrete.

3.09 LAWNS AND IMPROVED AREAS

- A. The area to receive topsoil shall be graded to a depth of not less than 4 inches or as specified, below the proposed finished surface.
 - 1. If the depth of existing topsoil prior to construction was greater than 4 inches, topsoil shall be replaced to that depth.
- B. The furnishing and placing of topsoil, seed and mulch shall be in accordance with the Section entitled "Topsoil and Seeding".
- C. When required to obtain germination, the seeded areas shall be watered in such a manner as to prevent washing out of the seed.
- D. Any washout or damage which occurs shall be regraded and reseeded until a good sod is established.
- E. The Contractor shall maintain the newly seeded areas, including regrading, reseeding, watering and mowing, in good condition.

3.10 CULTIVATED AREA REPLACEMENT

- A. Areas of cultivated lands shall be graded to a depth to receive topsoil of not less than the depth of the topsoil before being disturbed. All debris and inorganic material shall be removed prior to the placing of the topsoil.
- B. The furnishing and placing of topsoil shall be in accordance with the Section entitled "Topsoil and Seeding".
- C. After the topsoil has been placed and graded, the entire area disturbed during construction shall be cultivated to a minimum depth of 12-inches with normal farm equipment.
 - 1. Any debris or inorganic materials appearing shall be removed.
 - 2. The removal of stones shall be governed by the adjacent undisturbed cultivated area.
- D. Grass areas shall be reseeded using a mixture equal to that of the area before being disturbed, unless otherwise specified.

3.11 OTHER TYPES OF RESTORATION

- A. Trees, shrubs and landscape items damaged or destroyed as a result of the construction operations shall be replaced in like species and size.
 - 1. All planting and care thereof shall meet the standards of the American Association of Nurserymen.
- B. Water courses shall be reshaped to the original grade and cross-section and all debris removed. Where required to prevent erosion, the bottom and sides of the water course shall be protected.
- C. Culverts destroyed or removed as a result of the construction operations shall be replaced in like size and material and shall be replaced at the original location and grade. When there is minor damage to a culvert and with the consent of the Engineer, a repair may be undertaken, if satisfactory results can be obtained.
- D. Should brick pavements be encountered in the work, the restoration shall be as set forth in the Special Provisions or as directed.

3.12 MAINTENANCE

- A. The finished products of restoration shall be maintained in an acceptable condition for and during a period of one year following the date of Substantial Completion or other such date as set forth elsewhere in the Contract Documents.

-END OF SECTION-

SECTION 02700**SITE RESTORATION****PART 1 - GENERAL****1.01 CLEAN-UP**

Upon completion of the installation of the sewer main and appurtenances, the Contractor shall remove all debris and surplus construction materials resulting from his work. The Contractor shall grade the ground along each side of the pipe trench and/or structure in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

PART 2 - PRODUCTS**2.01 SEEDING**

- A. All graded areas shall be seeded at the rate of six (6) pounds of seed per 1,000 square feet. The mixture shall consist of:
- | | |
|---------------------|-----|
| Kentucky 31 Fescue | 60% |
| Creeping Red Fescue | 20% |
| Annual Rye Grass | 20% |
- B. After seed has been distributed, the Contractor shall cover areas with straw to a depth of 1-1/2". Any necessary re-seeding or repairing shall be accomplished by the Contractor before final acceptance. Seeding is not a pay item.

PART 3 - EXECUTION**3.01 SITE RESTORATION**

- A. After installation of water lines, the construction site will be restored to its original condition or better. All paved streets, roads, sidewalks, curbs, etc. removed or disturbed during construction shall be replaced, and all materials and workmanship shall conform to standard practices and specifications of the Owner, and/or to the Kentucky Department of Highways requirements, and specifications, whichever applies. Gravel, cinder or dirt streets, drives and shoulders shall be replaced and sufficiently compacted to provide a surface suitable for carrying the type of traffic normally imposed at the location.
- B. All seeded areas shall be watered daily during the germination period, unless rain supplies the required moisture. The Contractor shall replace, at his own expense, trees, shrubs, etc. disturbed during construction.
- C. The Contractor shall remove from the site all equipment, unused materials and other items at his expense. The construction site shall be left in a neat, orderly condition, clear of all unsightly items, before the Work is finally accepted.

- END OF SECTION -

SECTION 02830**CHAIN LINK FENCES AND GATES****PART 1 - GENERAL****1.01 WORK INCLUDED**

- A. The Contractor shall furnish and erect the chain link fence and gates as indicated on the Drawings and as herein specified.
- B. The chain link fence shall have a top rail and bottom tension wire.
- C. The chain link fence materials and installation shall meet or exceed the standards of the Chain Link Fence Manufacturers Institute, New York, N.Y., except as otherwise specified in this section. Also, fence materials shall meet or exceed Fed. Spec. RR-F-191H/GEN for Fencing, Wire and Post Metal (and Gates, Chain Link Fence Fabric, and Accessories), and shall conform to the ASTM Standard Specifications hereinafter noted.
- D. Fence framework, fabric, and accessories.
- E. Excavation for post bases.
- F. Concrete anchorage for posts.
- G. Manual gates and related hardware.

1.02 RELATED WORK

- A. Division 3 - Concrete
- B. Section 16741 - Security Gate Video Intercommunication System

1.03 REFERENCES

- A. ANSI/ASTM A123 - Zinc (Hot Galvanized) Coatings of Products Fabricated from Rolled, Pressed, and Forged Steel Shapes, Plates, Bars and Strips
- B. ANSI/ASTM F567 - Installation of Chain Link Fence
- C. ASTM A120 - Pipe, Steel, Black and Hot-dipped Zinc-coated (Galvanized) Welded and Seamless, for Ordinary Uses
- D. ASTM C94 - Ready-Mixed Concrete
- E. FS RR-F-191 - Fencing, Wire and Post, Metal, Type I or Type II

1.04 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in commercial quality chain link fencing with two (2) years experience.
- B. Installation: ANSI/ASTM F567.

1.05 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01300. Complete wiring diagrams shall be included.
- B. Include plan layout, grid, spacing of components, accessories, fittings, hardware, anchorages, and schedule of components.
- C. Submit manufacturer's installation instructions under provisions of Section 01300.
- D. Submit samples under provisions of Section 01300.
- E. Submit the following samples illustrating each fence material and fabric finish.
 - 1. A 2-inch length of each type of post.
 - 2. A 2-inch length of each type of brace and railing.
 - 3. A 2-inch length of framework for gates.
 - 4. A 2-inch length of diagonal truss brace.
 - 5. A 2-inch length of tension wire.
 - 6. Each type of fitting used at terminal posts.
 - 7. Fittings used at line posts.
 - 8. Fittings for the gate leaf frame.
 - 9. Gate hinge.
 - 10. Gate latch.
 - 11. Stretcher bar, 2-inch length.
 - 12. Bolt and nut fastener.
 - 13. Fence fabric, two (2) weaves, two (2) meshes long.
 - 14. Tie.
- F. Accompanying the samples, the Contractor shall submit two statements, one on his and one on his subcontractor's letterhead stating that the samples submitted comply with the requirements of these Contract Documents. Samples shall be submitted for review at least 30 days before fence erection.

1.06 AMERICAN IRON AND STEEL

Under the requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies to American Iron and Steel requirement to this project. All listed iron and steel products used in this project must be produced in the United States.

PART 2 - PRODUCTS

2.01 MATERIALS

Framework: ASTM A120; Schedule 40 steel pipe, standard weight, one piece without joints.

2.02 CONCRETE MIX

- A. Concrete: As specified in Section 03300.
- B. Concrete: ASTM C94; Portland Cement; 2500 min. psi at 38 days; 3-inch slump/1-inch maximum sized aggregate.

2.03 COMPONENTS

- A. Type I metal fittings, posts, fence, and gate framework, and all accessories shall be galvanized with a heavy coating of 1.8 oz. pure zinc spelter per square foot of surface area to be coated using the hot-dip process. Type II shall be triple coated with 102 zinc, 15 MG of chromate and 0.3 mils cross link polyurethane.
- B. All fabrication and welding shall be done before hot-dip galvanizing. All welding shall conform to the American Welding Society standards.
- C. The chain link fence fabric shall be galvanized steel chain link fabric conforming to ASTM Standard Specification for Zinc-Coated Steel Chain Link Fence Fabric, Designation A392-74, with Class 2 zinc coating (2.0 oz. of zinc per square foot of uncoated wire surface). The fabric shall be woven in 2-inch mesh from No. 9 gauge wire in a 7-foot width with barbed selvages top and bottom.
- D. The barbed wire shall be galvanized steel barbed wire consisting of two strands of twisted No. 12 1/2-gage wires with 4-point barbs spaced three (3) inches apart and conforming to ASTM Standard Specification of Zinc-Coated (Galvanized) Steel Barbed Wire, Designation A121-77, with Class 3 zinc coating (minimum of 0.80 oz. of zinc per square foot of uncoated wire surface for No. 12 1/2-gauge wire).
- E. The tension wire shall be No. 7-gauge coil spring steel wire with galvanized finish having minimum of 0.80 oz. of zinc coating per square foot of uncoated wire surface.
- F. Tie wires for fastening fence fabric to line posts and rails shall be not less than No. 6 gauge aluminum wire.
- G. Line posts shall be 2-3/8-inch (2.375") outside diameter steel pipe weighing not less than 3.65 lb. per ft. for Type I or 3.117 lb. per ft. for Type II, or 1⁷/₈-inch high carbon steel H-beams weighing not less than 2.70 lb. per ft.
- H. End, corner, and pull posts shall be 2-7/8-inch (2.875) outside diameter steel pipe weighing not less than 5.79 lb. per ft. for Type I or 4.64 lb. per ft. for Type II, or 2¹/₂-inch square steel tube weighing not less than 5.14 lb. per ft., or 3¹/₂-inch by 3¹/₂-inch roll-formed steel corner section weighing not less than 5.14 lb. per ft.
- I. Gate posts for gate leaves up to and including six (6) feet wide shall be 2⁷/₈-inch outside diameter steel pipe weighing not less than 5.79 lb. per ft., or 2¹/₂-inch square steel tube weighing not less than 5.14 lb. per ft., 3¹/₂-inch by 3¹/₂-inch roll-formed steel corner section weighing not less than 5.14 lb. per ft.

- J. Gate posts for gate leaves over six (6) feet wide and up to and including 13 feet wide, shall be 4-inch outside diameter steel pipe weighing not less than 9.10 lb. per ft. for Type I or 3½-inch Type II at 5.71 lb. per ft.
- K. Top railings and railings for top, middle, and bottom braces between terminal posts and adjacent line posts shall be 1⁵/₈-inch outside diameter steel pipe weighing not less than 2.27 lb. per ft., or 1⁵/₈-inch by 1¼-inch 14-gauge roll-form section.
- L. Diagonal truss braces between terminal and adjacent line posts and for gate framework shall be 3/8" diameter steel rod.
- M. Barbed wire support arms shall project outward from the top of the posts at 45 degrees and shall be capable of withstanding a 200-pound downward pull on the outermost end of the arm, without failure. The arms shall have provision for the attachment of three (3) strands of evenly spaced barbed wire. Arms shall be integral with post top weather caps having holes for the passage of the top rail at intermediate posts.
- N. Fittings shall be heavy duty malleable iron or pressed steel of suitable size to produce strong construction.
- O. Stretcher bars for attaching fabric to terminal posts such as end, corner, pull, or gate posts and gate frames, shall be flat bars with minimum cross-section dimensions of not less than 1/4" by 3/4". The stretcher bars shall be the full height of the fabric and shall be secured with bar bands of not less than 11-gauge sheet steel, spaced approximately 15 inches on centers and bolted with 3/8-inch diameter bolts.
- P. Gate leave framework shall be 1⁷/₈-inch outside diameter steel pipe weighing not less than 2.72 lb. per ft. for Type I or 2.28 lb. per ft. for Type II.
- Q. If bolted or riveted corner fittings are not used, the gate frame shall be hot-dip galvanized after welding.
- R. Gate hinges shall be of heavy pattern of adequate strength for the gate size with large bearing surfaces for clamping or bolting in position.
- S. The gates shall be provided with a suitable latch accessible from both sides and with provision for padlocking.
- T. Double leaf swing gates shall have a center bolt, center stop, and automatic backstops to hold leaves in open position.
- U. Gate padlocks shall have solid brass cases, hardened steel shackles, removable core cylinders, and galvanized steel chains attached to the shackle by a clevis. Padlocks shall be manufactured by Eaton Corp. Lock & Hardware Div., of Emhart Corp., Berlin, Conn.; Best Universal Lock Co., Inc., Indianapolis, Ind.; or be an acceptable equivalent product. The padlocks shall be furnished with two (2) keys each.

2.04 FINISHES

- A. Galvanized: ANSI/ASTM A120; 1.8 oz./sq. ft. coating and 22 mils of black PVC coating, Bonded to Core Wire.
- B. Accessories: Same finish as framing and fabric.

2.05 AUTOMATIC CANTILEVER SLIDE GATE OPERATOR

- A. A pre-wired, self-contained, slide gate operator for horizontal sliding gates, including all selected attachments and accessory equipment, shall be provided for where shown on the drawings.
- B. Operation shall be by means of a metal rail passing between a pair of hydraulically driven solid metal wheels with polyurethane treads. Operator motors shall be hydraulic, gear roller type, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 pounds without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 1000 pounds. Gate panel velocity shall not be less than 1.0 feet per second and shall be stopped gradually to prevent shock loads to the gate and operator assembly.
- C. Standard mechanical components shall include as a minimum:
 - 1. Supporting arms: Cast aluminum channel. Arms shall incorporate a fully bushed, 1-1/2" bronze bearing surface, acting on arm pivot pins. (item 2 below)
 - 2. Arm pivot pins: 3/4" diameter, stainless steel, with integral tabs for ease of removal.
 - 3. Tension spring: 2-1/2" heavy duty, 800-pound capacity.
 - 4. Tension adjustment: Finger tightened nut, not requiring the use of tools.
 - 5. Drive release: Must instantly release tension on both drive wheels, and disengage them from contact with drive rail in a single motion, for manual operation.
 - 6. Limit switches: Fully adjustable, toggle types, Nema 4.
 - 7. Electrical enclosure: Oversized, metal, with hinged lid gasketed for protection from intrusion of foreign objects, and providing ample space for the addition of accessories.
 - 8. Chassis: 1/4" steel base plate, and 10 Ga. sides and back welded and ground smooth.
 - 9. Cover: 16GA. galvanized sheet metal with a powder paint finish. All joints welded, filled and ground smooth. Finished corners square and true with no visible joints.
 - 10. Finish: Fully zinc plated then finish coat of high gloss powder paint withstanding 1000-hour salt spray test.
 - 11. Drive wheels: 6" Dia. Metal hub with polyurethane tread.
 - 12. Drive rail: Shall be extruded 6061 T6, not less than 1/8" thick. Drive rail shall incorporate alignment pins for ease of replacement or splicing. Pins shall enable a perfect butt splice.
 - 13. Hydraulic hose: Shall be 1/4" synthetic, rated to 2750 p.s.i.
 - 14. Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.
 - 15. Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
 - 16. Hydraulic fluid: High performance type with a viscosity index greater than 375.

17. A zero to 2000-PSI pressure gauge, mounted on the manifold for diagnostics, shall be a standard component.
 18. The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.
 19. A cabinet lock for the operator cover.
 20. A lockable remote release device that allows the release of the grip of the slide gate rail without removing the operator cover.
- D. Minimum standard electrical components:
1. Motor: Shall be a 1 HP, 56C, TEFC, continuous duty motor, with a service factor of 1.15, or greater, 480V, 3-phase.
 2. All components shall have overload protection.
 3. Transformer: 75 VA, non-jumpered taps, for all common voltages. Control circuit: 24VDC.
- E. The gate operator shall come equipped with the following external sensors being capable of opening and/or reversing the gate in either direction upon sensing an obstruction.
1. The gate operator shall be capable of accepting a discrete input from the security access system to open the gate.
 2. A "Torque Sensor" utilizing internal sensing devices to detect an object when encountered by the closing gate and reversing the gates direction.
 3. An adjustable timer that signals the operator to close the gate after a prescribed set point.
 4. Photobeam obstruction detection compliant with UL325.
- F. The gate operator control board shall have a minimum of two ports for plug in loop detectors. Loop wiring shall be provided for inside and outside safety loops as well as an exit loop. The loop detectors shall plug into the ports on the control board. The loop detectors shall be installed "in-ground" and located per manufacturer's recommendation. When the loop detector for the gate operator that operates on "exit" senses traffic, the slide gate shall open automatically. Safety loops shall allow the gate to stay open when vehicles are obstructing the path.
- G. Provide a five-year limited warranty against all defects in materials or workmanship. Defective materials shall be replaced with comparable materials furnished by the manufacturer, at no cost to the owner. Freight, labor and other incidental costs are not covered under the factory warranty, but may be covered by a separate service agreement between installing company and the owner.
- H. Automatic Slide Gate Operators shall be as manufactured by SlideDriver model 15 or equal and shall include all options necessary to meet all of the requirements noted below.

- I. Slide Gate operators shall be microprocessor based. An operator shall be provided for each plant entrance gate, with a solid state board on each operator to control all functions of the operator as described in this specification section. Provide all necessary boards, power supplies, special mounting hardware, connectors, cables, wiring and accessories for a complete operational system.
- J. Each operator shall be capable of operating a 30-foot gate. Each gate operator assembly shall include a 1 HP continuous duty motor rated for 480 V three-phase AC supply only.
- K. The primary reduction and power transfer for each gate operator shall be provided by a single cog belt drive train and worm gear reduction. A harmonic linkage arm shall function from the bottom of the gate operator and shall start the gate slowly, accelerate through the cycle, then slow down prior to stopping to prevent the gate from bouncing.
- L. The gate operator shall have a "tamper detect" function that shall start the motor to re-close the gate if the gate is forced open without an authorized command. Functions shall be user-programmable by DIP-switches located on control board.
- M. If an obstruction is met during the opening or closing cycles, the gate operator shall have the ability to automatically reverse the gate. This reverse system shall be an inherent function for the gate operator so that if the external reverse devices fail or become inoperative, the operator will still sense the obstruction and reverse the gate. The inherent reverse system shall consist of a primary system that reverses the gate if an obstruction is sensed. Should the primary system fail or become inoperative, a secondary inherent system shall sense the obstruction and reverse the gate. The primary system shall sense a clutch slippage and reverse the gate. Should the clutch fail to slip, the secondary system shall sense a stoppage and reverse the gate.
- N. The gate operator shall have the capability to stop and activate the internal alarm upon sensing an entrapment (two sequential activations of the inherent sensing system) and shall require activation of the reset switch prior to returning to normal operation, as required by UL 325 safety standard. For enhanced safety, the operator shall upon sensing an entrapment, release pressure on the gate and assume a fail-safe condition to allow any entrapment the opportunity to free itself without the need for outside intervention.
- O. The gate operator shall incorporate a "fail-safe" design that shall allow the manual operation of the gate from the inside without the need for any hand cranks, keys or mechanical devices. The manual release device shall be an integral (non-removable) part of the operator. The manual release or manual operation of the gate shall not result in a risk of injury to users if the operator is activated while the manual release is activated or being used.
- P. The gate operator shall be in compliance with UL Standards for safety – Door, Drapery, Gate, Louver and Window Operators and systems; UL 325 (fourth edition); UL Standards for safety – Tests for Safety Related Controls Employing Solid State Devices, UL 991 (second edition).
- Q. Contractor's submittals for the gate operator shall include an equipment list, data sheets, system description, block diagrams on equipment and electrical wiring diagrams for installation. The submittal shall include all data required to evaluate design, quality and configuration of the gate operator system.
- R. Factory Warranty period for the gate operators shall be a minimum of two (2) years parts and workmanship.

PART 3 - EXECUTION**3.01 INSTALLATION - ERECTION OF CHAIN LINK FENCE**

- A. The fence and gates shall be erected by skilled mechanics.
- B. Post spacing shall be uniform with maximum spacing of 10 feet in fences erected along straight lines. All posts shall be placed plumb and centered in the concrete foundations.
- C. Post foundations in earth shall be concrete cylinders with a minimum diameter of 12 inches, crowned at grade to shed water, and shall not be less than 36 inches deep in the ground. Posts shall be set in the full depth of the foundations except for six (6) inches of concrete under the posts.
- D. If foundation holes are excavated in peat or other unstable soil, the Engineer shall be notified for determination of suitable construction precautions.
- E. If solid ledge is encountered without overburden of soil, posts shall be set into the rock a minimum depth of 12 inches for line posts and 18 inches for terminal posts. Post holes shall be at least one (1) inch greater in diameter than the post and the grout shall be thoroughly worked into the hole so as not to leave voids, and shall be crowned at the top to shed water. Where solid rock is covered by an overburden, the total setting depths shall not exceed the depths required for setting in earth, and the posts shall be grouted into the rock as described.
- F. Any change in direction of the fence line of 30 degrees or more shall be considered corners. Pull posts shall be used at any abrupt change in grade.
- G. Maximum area of unbraced fence shall not exceed 1,500 square feet.
- H. Terminal posts shall be braced to adjacent posts with horizontal brace rails and diagonal truss rods brought to proper tension so that posts are plumb.
- I. There shall be no loose connections or sloppy fits in the fence framework. The fence framework shall withstand all wind and other forces due to the weather.
- J. Fabric shall be stretched taut and tied to posts, rails, and tension wires with the bottom edge following the finished grade not more than two (2) inches above the grade. The fabric shall be installed on the security side of the fence and shall be anchored to the framework so that the fabric remains in tension after pulling force is released. The fabric shall be attached to line posts with ties spaced at not more than 15-inch intervals and to rails and braces at not more than 24-inch intervals. The fabric shall be attached to the tension wire with hog ring ties on 24-inch centers.
- K. Three strands of barbed wire shall be installed on each extension arm of the line fence and at the top of each gate. The wires shall be pulled taut and fastened at each support.
- L. Gates shall be installed plumb, level, and secure for the full width of the opening and the hardware adjusted for smooth operation. Provide concrete center drop to foundation depth and drop rod retainers at center of double gate openings.

- END OF SECTION -

SECTION 09960**COATINGS – WATER PLANT****PART 1 - GENERAL****1.01 DESCRIPTION OF WORK**

- A. Provide all labor, materials, equipment and services for furnishing and installing the finishes as indicated on drawings and schedules, and as herein specified.
- B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.
- C. Work includes field painting of exposed bare and covered pipes and ducts (including color coding), and of hangers, exposed steel and iron work, and primed metal surfaces of equipment installed under mechanical and electrical work, except as otherwise indicated. In addition, the Contractor shall provide for the use of deep tone colors to be applied in selected areas as wall graphics, stripes and visual accents. The areas and colors shall be selected by the Architect-Engineer and shall not exceed 15% of the total wall surface area to be painted.
- D. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
- E. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect-Engineer will select these from standard colors or finishes available.
- F. Following categories of work are not included as part of field- applied finish work.
 - 1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) toilet enclosures, prefinished partition systems, acoustic materials, architectural woodwork and casework, and finish mechanical and electrical equipment, including light fixtures, switchgear, and distribution cabinets.
 - 2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, furred areas, pipe spaces, and duct shafts.
 - 3. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.
 - 4. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.
- G. Following categories of work are included under other sections of these specifications.
 - 1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is

included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

2. Unless otherwise specified, shop priming of fabricated components such as architectural woodwork, wood casework and shop-fabricated or factory-built mechanical and electrical equipment or accessories is included under other sections of these Specifications.
- H. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.
- I. PVC plastic process piping shall not be painted, but shall be stenciled and labeled or tagged for identification surfaces. Each type of process piping using PVC pipe shall be installed using the same color pipe.
- J. Repainting of existing structures, tanks, piping, and all other existing items shall not be part of this Contract unless otherwise noted. Areas that have been directly altered or damaged by construction shall be repainted to match existing conditions using the appropriate painting system.

1.02 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to Work of this Section.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.
- B. Samples: Prior to beginning work, submit color chips for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Architect-Engineer's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

1.04 QUALITY ASSURANCE

- A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.
- B. Coordination of Work: Review other sections of these Specifications in which prime paints are to be provided to ensure compatibility of total coatings systems for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

1.05 DELIVERY AND STORAGE

- A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:
 1. Name or title of material.
 2. Fed. Spec. number, if applicable.
 3. Manufacturer's stock number, batch number, and date of manufacturer.

4. Manufacturer's name.
 5. Contents by volume, for major pigment and vehicle constituents.
 6. Thinning instructions.
 7. Application instructions.
 8. Color name and number.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage of paint in a clean condition, free of foreign materials and residue. Protect from freezing where necessary. Keep storage area neat and orderly. Remove oily rags and waste daily. Take all precautions to ensure that workmen and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

1.06 JOB CONDITIONS

- A. Apply water-base paints only when temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F (10 degrees C) and 90 degrees F (32 degrees C), unless otherwise permitted or restricted by paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F (7 degrees C) and 95 degrees F (35 degrees C), unless otherwise permitted or restricted by paint manufacturer's printed instructions.
- C. Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted or restricted by paint manufacturer's printed instructions. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.
- D. Paint only when the surface temperature is at least 5 degrees F above the dew point, unless otherwise permitted by paint manufacturer's printed instructions.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:
 1. Tnemec Company, Inc. (Tnemec)
 2. The Sherwin-Williams Company
 3. Engineer Approved Equal

2.02 MATERIALS

- A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

- B. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.
- C. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.
 - 1. Lead content in pigment, if any, is limited to contain not more than 0.06% lead, as lead metal based on the total non-volatile (dry-film) of paint by weight.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Applicator.
- B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.02 SURFACE PREPARATION

- A. General: Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.
 - 1. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify Architect-Architect-Engineer in writing of any anticipated problems in using the specified coating systems with substrates primed by others.
 - 2. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.
 - 3. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning per SSPC SP-1. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.
 - 4. Abrasives for blasting shall be sharp, washed, salt free, angular, and free from feldspar or other constituents that tend to breakdown and remain on the surface.
 - 5. Concrete floors shall be dry as indicated by testing in accordance with ASTM D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
- B. Cementitious Materials: Per ASTM D4261, Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating, prepare cementitious surfaces of concrete block to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze. Per ASTM D4262, Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces, determine alkalinity of surfaces to be painted by performing

appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Test the surface for moisture and do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

- C. Wood: Clean wood surfaces to be painted of dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.
 - 1. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, paneling.
 - 2. When transparent finish is required, use spar varnish for backpriming.
- D. Ferrous Metals: Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, and other foreign substances by solvent cleaning per SSPC SP-1. Mechanical cleaning shall be in accordance with SSPC-SP6 Commercial Blast Cleaning specifications for non-immersion surfaces and SSPC-SP10 Near White Metal Blast Cleaning for immersion in potable or non-potable water.
- E. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent. For immersion service, clean in accordance with SSPC-SP16 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
- F. Shop Primed Surfaces: Prepare shop-applied prime coats wherever damaged or bare as required by other sections of these Specifications. Clean and touch-up with same type shop primer.

3.03 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's directions.
- B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

3.04 APPLICATION

- A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
 - 1. Painting requirements, surface treatments, and finishes, are indicated in "schedules" of the contract documents and as noted in Paragraph 3.11 hereinafter.
 - 2. Provide finish coats which are compatible with prime paints used.
 - 3. Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special attention to insure that surfaces, including edges, corners, crevices, welds,

and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently- fixed equipment or furniture with prime coat only before final installation of equipment.
 5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 6. Paint back sides of access panels, and removable or hinged covers to match exposed surfaces.
 7. Finish exterior doors on tops, bottoms and side edges same as exterior faces, unless otherwise indicated.
 8. Sand lightly between each succeeding enamel or varnish coat.
 9. Omit first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise indicated.
- B. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by coating manufacturer.
- D. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to those items exposed in mechanical equipment rooms and in occupied spaces.
1. Mechanical items to be painted include, but are not limited to, the following:
 - a. Piping, pipe hangers, supplementary steel and supports except galvanized surfaces.
 - b. Heat exchangers.
 - c. Tanks.
 - d. Ductwork, insulation.
 - e. Motor, mechanical equipment, and supports.
 - f. Accessory items.
 2. Electrical items to be painted include, but are not limited to, the following:
 - a. Conduits and fittings except galvanized surfaces.
 - b. Switchgear (touch up only).
 - c. Hanger and support except galvanized surfaces.
- E. Prime Coats: Apply prime coat of material which is required to be painted or finished, and

which has not been prime coated by others. Recoat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

- F. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable. Holiday test coated steel in immersion areas in accordance with NACE International SP0188-2007 Discontinuity (Holiday) Testing of New Protective Coatings on Conductive Substrates.
- G. Transparent (Clear) Finishes: Use multiple coats to produce glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections. Provide satin finish for final coats, unless otherwise indicated.
- H. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.05 FIELD QUALITY CONTROL

- A. The right is reserved by Owner to invoke the following material testing procedure at any time, and any number of times during period of field painting:
 1. Engage services of an independent testing laboratory to sample paint being used. Samples of materials delivered to project site will be taken, identified and sealed, and certified in presence of Contractor.
 2. Testing laboratory will perform appropriate tests for any or all of following characteristics: Abrasion resistance, apparent reflectivity, flexibility, washability, absorption, accelerated weathering, dry opacity, accelerated yellowness, recoating, skinning, color retention, alkali resistance and quantitative materials analysis.
- B. If test results show that material being used does not comply with specified requirements, Contractor may be directed to stop painting work, and remove non-complying paint; pay for testing; repaint surfaces coated with rejected paint; remove rejected paint from previously painted surfaces if, upon repainting with specified paint, the two coatings are non-compatible.

3.06 CLEAN-UP AND PROTECTION

- A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.
- B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect-Architect-Engineer. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.07 PAINTING SYSTEMS

A. Ferrous Metals, Structural, Tanks, Pipe and Equipment

1. Exterior, Non-Immersion

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP6 Commercial Blast Cleaning		SSPC-SP6 Commercial Blast Cleaning	
1st Coat	91H20	2.5 - 3.5	Corothane I Galvapac NSF	2.5 - 3.5
2nd Coat	N69 High-Build Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0
3rd Coat	1074 Endura -Shield	2.0 - 3.0	Acrolon 218 HS	2.0 - 3.0

2. Interior, Non-Immersion

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP6 Commercial Blast Cleaning		SSPC-SP6 Commercial Blast Cleaning	
1st Coat	91H20	2.5 - 3.5	Corothane I Galvapac NSF	2.5 - 3.5
2nd Coat	N69 High-Build Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0
3rd Coat	N69 High-Build Epoxoline	2.0 - 3.0	Macropoxy 646	2.0 - 3.0

3. Immersion, Potable or Non-Potable Water

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP10 Near-White Blast Cleaning		SSPC-SP10 Near-White Blast Cleaning	
1st Coat	N140	4.0 - 6.0	Macropoxy 646 PW	4.0 - 6.0
2nd Coat	N140	4.0 - 6.0	Macropoxy 646 PW	4.0 - 6.0
3rd Coat	N140	4.0 - 6.0	Macropoxy 646 PW	4.0 - 6.0

4. Factory Primed Interior (Refer to Piping Specifications)

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
Touch up	N69 High-Build Epoxoline		Macropoxy 646	
1st Coat	N69 High-Build Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0
2nd Coat	N69 High-Build Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0

5. Factory Primed, Exterior (Refer to Piping Specifications)

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
Touch up	N69 Hi-Build Epoxoline		Macropoxy 646	
1st Coat	N69 Hi-Build Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0
2nd Coat	1074 Endura -Shield	2.0 - 3.0	Acrolon 218 HS, B65 Series	2.0 - 3.0

6. Primed Steel (Doors, Frames, etc.) - Exterior

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
Touch-up	N69 High-Build Epoxoline		Macropoxy 646	
1st Coat	N 69 High-Build Epoxoline	4.0 - 6.0	Macropoxy 646	2.0 - 3.0
2nd Coat	1074 Endura -Shield	2.0 - 3.0	Acrolon 218 HS	2.0 - 3.0

7. Buried

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP6 Commercial Blast Cleaning		SSPC-SP6 Commercial Blast Cleaning	
1st Coat	Hi-Build Tneme-Tar	16.0 - 20.0	Hi-Mil Sher-Tar Epoxy	16.0 - 24.0

B. Galvanized Steel - Pipe and Miscellaneous Fabrications**1. Exterior, Non-Immersion**

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP1 Solvent Cleaning		SSPC-SP1 Solvent Cleaning	
1st Coat	N69 Hi-Build Epoxoline	4.0 - 6.0	Macropoxy 646	2.0 - 3.0
2nd Coat	1074 Endura -Shield	2.0 - 3.0	Acrolon 218 HS	2.0 - 3.0

2. Interior, Non-Immersion (Doors, Frames, etc.)

	Tnemec		Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP1 Cleaning	Solvent		SSPC-SP1 Solvent Cleaning	
1st Coat	N69 Epoxoline	Hi-Build	4.0 - 6.0	Macropoxy 646	2.0 - 3.0
2nd Coat	N69 Epoxoline	Hi-Build	4.0 - 6.0	Macropoxy 646	2.0 - 3.0

3. Immersion, Potable or Non-Potable Water

	Tnemec		Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP16 Blast Cleaning	Brush-Off		SSPC-SP16 Blast Cleaning	
1st Coat	20-1255 Potapox		4.0 - 6.0	Macropoxy 646 NSF	4.0 - 6.0
2nd Coat	20-11 WH Potapox		4.0 - 6.0	Macropoxy 646 NSF	4.0 - 6.0

C. Porous Masonry - Concrete Masonry Units**1. Interior**

	Tnemec		Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry			Surface Shall be Clean / Dry	
1st Coat	130 Envirofill (Spray and Back Roll to Fill Porosity)		80 - 100 sf/gal.	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	80- 100 sf/gal
2nd Coat	113 H.B. Tnemec-Tufcoat		2.0 - 3.0	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	2.0- 3.0
3rd Coat	113 H.B. Tnemec-Tufcoat		2.0 - 3.0	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	2.0- 3.0

2. Exterior

	Tnemec		Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry			Surface Shall be Clean / Dry	
1st Coat	Series 156 Enviro-Crete		6.0 - 8.0*	Loxon XP	6.0- 8.0*
2nd Coat	Series 156 Enviro-Crete		6.0 - 8.0*	Loxon XP	6.0- 8.0*

*Coats must be sufficient to fill the porosity of the block face and create a pinhole-free surface.

D. Cast-In-Place Concrete**1. Concrete Walls & Precast Concrete Ceilings (Interior)**

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP13 Abrasive Blast		SSPC-SP13 Abrasive Blast	
1st Coat	113 H.B. Tneme Tuf-coat	4.0-6.0	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	4.0 - 6.0
2nd Coat	113 H.B. Tneme Tuf-coat	4.0-6.0	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	4.0 - 6.0

2. Concrete Walls, Exterior & Non-Potable

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
1st Coat	Series 156 Enviro-Crete	125 sf/gal	Loxon Masonry Primer	125 sf/gal
2nd Coat	Series 156 Enviro-Crete	200 sf/gal	Loxon Masonry Coating	200 sf/gal

Floors (Where noted on the drawings or specified)

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP13, Severe Service Abrasive Blast		SSPC-SP13, Severe Service Abrasive Blast	
1st Coat	N 66 Epoxoline	3.0 - 5.0	Macropoxy 646	3.0 - 5.0
2nd Coat	N 66 Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0
3rd Coat	N 66 Epoxoline	4.0 - 6.0	Macropoxy 646	4.0 - 6.0

4. Concrete Tanks & Basins

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP13, Severe Service Abrasive Blast		SSPC-SP13, Severe Service Abrasive Blast	
1st Coat	N140	4.0 - 6.0	Macropoxy 646 PW	4.0 - 6.0
2nd Coat	N140	4.0 - 6.0	Macropoxy 646PW	4.0 - 6.0
3rd Coat	N140	4.0 - 6.0	Macropoxy 646PW	4.0 - 6.0

5a. Chemical Containment Areas - Acid Exposure

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP13, Severe Service Abrasive Blast		SSPC-SP13, Severe Service Abrasive Blast	
1st Coat	Series 120-5002 Vinyl Ester	12 - 18	CoroBond Vinyl Ester Primer	3.5 - 4.0
2nd Coat	Series 120-5002 Vinyl Ester	12 - 18	CorCote VEN FF	15.0 - 20.0
3rd Coat			CorCote VEN FF with Wax Solution	15.0 - 20.0

5b. Chemical Containment Areas - Other

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	SSPC-SP13, Severe Service Abrasive Blast		SSPC-SP13, Severe Service Abrasive Blast	
1st Coat	201 Epoxoprime	6.0 - 8.0	CoroBond 100	6.0 - 8.0
2nd Coat	275 Stranlock	25.0 - 40.0	CorCote HCR Flake-Filled	15.0 - 20.0
3rd Coat	282 Tneme-Glaze	8.0 - 12.0	CorCote HCR	15.0 - 20.0

E. Wood - Interior or Exterior

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
1st Coat	151-1051 Elasto-Grip FC	1.0 - 1.5	Multi-Purpose Latex Primer	1.0 - 1.5
2nd Coat	1029 Tufcryl	2.0 - 3.0 - 3.5	DTM Acrylic Coating	2.0 - 3.0
3rd Coat	1029 Tufcryl	2.0 - 3.0	DTM Acrylic Coating	2.0 - 3.0

F. Insulated Pipe

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
1st Coat	1029Tneme-Cryl	2.0 - 3.0	DTM Primer/Finish, B66W1	2.0 - 3.0
2nd Coat	1029 Tneme-Cryl	2.0 - 3.0	DTM Primer/Finish, B66W1	2.0 - 3.0

G. Gypsum Board**1. Interior Drywall - Architectural**

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
1st Coat	151-1051 Elasto-Grip FC	1.0 - 1.5	PrepRite 200 Printer	1.0 - 1.5
2nd Coat	6-Color Tneme-Cryl	2.0 - 3.0	ProMar 200 F, SF, EgShel	1.0 - 1.5

2. Interior Drywall - Severe Exposure

	Tnemec	Dry Mils	Sherwin Williams	Dry Mils
Surface Prep	Surface Shall be Clean / Dry		Surface Shall be Clean / Dry	
Prime Coat	151-1051 Elasto-Grip FC	1.0 - 1.5	PrepRite 200 Primer	1.0 - 1.5
1st Coat	113 H.B. Tneme-Tufcoat	2.0 - 3.0	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	2.0 - 3.0
2nd Coat	113 H.B. Tneme-Tufcoat	2.0 - 3.0	Pro-Industrial Hi-Bild Waterbased Catalyzed Epoxy	2.0 - 3.0

H. PVC Piping – **Do Not Paint**I. Aluminum Windows, Doors, Handrails & Grating – **Do Not Paint**J. Fiberglass Reinforced Plastic Doors & Windows – **Do Not Paint****3.08 PIPING COLOR CODE**

To facilitate identification of piping in plants and pumping stations it is recommended that the following color scheme be utilized:

CHEMICAL LINES

Alum or Primary Coagulant	Orange
Ammonia	White
Carbon Slurry	Black
Caustic	Yellow w/ green band
Chlorine	Yellow
Lime Slurry	Light Green
Fluoride	Light Blue w/ red band
Polymers or Coagulant Aid	Orange w/ green band
Potassium Permanganate	Violet
Soda Ash	Light Green w/ orange band
Sulfur Dioxide	Light Green w/yellow band

WATER LINES

Raw Water	Olive Green
Settled Water	Light Blue
Filtered, Finished or Potable Water	Dark Blue

WASTE LINES

Backwash Waste	Light Brown
Sewer (Sanitary or Other)	Dark Gray
Sludge	Dark Brown

OTHER

Compressed Air	Dark Green
Gas	Red
Other Lines	Light Gray

3.09 STENCILING

- A. The Contractor shall supply all materials and labor necessary for stenciling of legends on pipes. The legend shall show the name of the contents. Review by the Architect-Engineer of legends will be required. Names shall be "plainly visible". Arrows showing direction of flow shall also be stenciled on pipes. The legends shall be located not more than 10 feet apart and, in general, at each valve and piece of equipment. The size and location of the legend shall be in general accordance with ANSI A13.1-1981 "Scheme for the Identification of Piping Systems". All visible piping 6" in diameter and larger shall be color-coded and stenciled. "Stick-on" labels are not acceptable.

3.10 PLASTIC IDENTIFICATION MARKERS

- A. All visible piping 3/4" and greater and less than 6" which is accessible for maintenance operations shall be color-coded and identified with semi-rigid plastic identification markers equal to SETMARK Pipe Markers as manufactured by Seton Name Plate Corporation, New Haven, Conn.; T & B/Westline, Los Angeles, California; or equal. Direction of flow arrows are to be included on each marker, unless otherwise specified.
- B. Each marker background is to be appropriately color coded with a clearly printed legend to identify the contents of the pipe in conformance with the "Scheme for the Identification of Piping Systems" (ANSI A 13.1 - 1981).
- C. For pipes under 3/4" O.D. (too small for color bands and legends), brass identification tags 1-1/2" in diameter with depressed 1/4" high black-filled letters above 1/3" blackfilled numbers shall be fastened securely at specified locations.
- D. All electrical conduits, which are accessible for maintenance operations, shall be identified with semi-rigid identification markers similar to those specified above.
- E. Each marker background is to be color-coded with a clearly printed legend to identify the conductor. Size of markers and sizes of lettering to generally conform with the "Scheme for Identification of Piping Systems" (ANSI A 13.1 - 1981)
- F. Locations for pipe and electrical markers to be as follows:
1. Adjacent to each valve and fitting (except on plumbing fixtures and equipment).
 2. At each branch and riser take-off.
 3. At each pipe passage through wall, floor and ceiling construction.
 4. At each pipe passage to underground.
 5. On all horizontal pipe runs-marked every 25 feet.

3.11 PAINT SCHEDULE

All items at the Project site shall be painted in accordance with these Specifications and Drawings. The following paint schedule is provided only to assist the Owner and Contractor in selection of the appropriate paint system and is not intended to be a complete list of items to be painted.

A. Paint Application Schedule

	<u>Location and/or Description</u>	<u>System</u>
1.	GAC Building (New Work)	
a.	New Piping & Equipment	A
b.	Ex Piping that is modified or relocated	A
2.	Filter Building/High Service Pump Building (New Work)	
a.	New Piping & Equipment	A
b.	Ex Piping that is modified or relocated	A
c.	All existing piping in the existing pipe gallery	A

END OF SECTION

SECTION 11212

VERTICAL TURBINE PUMPS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and services for manufacturing, assembling, delivering, installing, testing, and placing in service all pumping equipment including pumps, motors, bases, and appurtenances.
- B. Unless otherwise specified, the pump manufacturer shall furnish each pumping unit complete with drive motor and all other components and shall be held entirely responsible for the compatibility in all respects of all components furnished.
- C. Pumping units shall be as specified herein, and shown on the Drawings.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- | | | |
|----|-------------------------------|-------------------------|
| A. | Submittals: | Section 01340 |
| B. | Concrete: | Section 03300 |
| C. | Precision Grouting: | Section 03600 |
| D. | Piping & Valves: | Section 11290 and 11295 |
| E. | Painting: | Section 09900 |
| F. | Electrical: | Division 16 |
| G. | Operating & Maintenance Data: | Section 01780 |
| H. | Precast Concrete: | Section 03405 |
| I. | Instrumentation and SCADA: | Division 17 |

1.03 DEFINITION

- A. When the term "pumping unit" is used hereinafter, it shall be deemed to mean a pump or pumps, complete with, but not limited to, drive motor, connecting shafting, bearings, couplings, accessories, appurtenances, and all associated equipment.

1.04 CONTRACT DRAWINGS

- A. The contract drawings are intended to show a general arrangement of pumping equipment, drives, structural supports, foundations, connected piping and valves.
- B. The pump suction and discharges shown shall be considered minimum sizes unless otherwise specified.

1.05 MANUFACTURER

- A. Quality Assurance: All pumping units shall be of approved design and make products of manufacturers who have built equipment of similar type, size and capacity.
- B. Additional Submittals: The Contractor shall submit, upon request, any additional information that the Engineer may deem necessary to determine the ability of the proposed manufacturer to produce the specified equipment.
- C. Replacement Parts Capability: Pumping units shall be the products of manufacturers who can produce evidence of their ability to promptly furnish any and all interchangeable replacement parts as many be needed at any time within the expected life of the pumps.

Upon request, the Contractor shall submit full details of the proposed manufacturer's ability to promptly fill replacement orders.

- D. Manufacturer Information: All manufacturer information required by the specifications shall be submitted by the Contractor within thirty (30) calendar days of the date of receipt of the Notice to Proceed.

Any additional information or data, specifically requested by the Engineer, concerning manufacturer's capabilities (especially relating to requirements described hereinbefore), shall be submitted by the Contractor within fourteen (14) calendar days of the receipt of the written request therefore, unless otherwise specified.

Approval of manufacturers or suppliers will not be given until all information required by the specifications or requested by the Engineer has been submitted and acceptable.

- E. Disqualification of Manufacturer:
 - 1. Failure to successfully comply with the provisions of subparagraphs A through D, inclusive, will constitute grounds for disqualification of pump manufacturer.
 - 2. Poor performance of similar pumping equipment now in operation under the specified conditions of service and pump rating constitute grounds for disqualification of the pump manufacturer, supplier, or both, unless such poor performance has been corrected.

1.06 SUBMITTALS (SHOP DRAWINGS)

- A. General: The Contractor shall comply with the provisions of the specifications regarding submittals, unless otherwise specified herein.
- B. Content of Submittals: The following shall be included in submittals as a minimum. However, any additional information or data shall be added if and whenever requested by the Owner or the Engineer. Where applicable, submit separate data for each pump.
 - 1. Descriptive Literature:
 - a. Dimensions
 - b. Materials of Construction (including required coating).
 - c. Performance Data.

- 1) Size of Pump
 - 2) GPM
 - 3) TDH
 - 4) BHP
 - 5) Overall pump efficiency inlet through discharge head)
 - 6) RPM
 - 7) Performance curves showing overall pump efficiencies.
 - 8) NPSH curve if applicable)
 - 9) Shutoff head
 - 10) Weight of pump
 - 11) Head
 - 12) Rated HP of motor
 - 13) Weight of motor
2. Installation Information: Submit drawings and information necessary for final design of foundations, connecting piping and valves, pump drip and drainage piping, electrical connections, starting, speed regulating and protective equipment, and auxiliary equipment.
- a. Submit details for mechanical seal assemblies.
 - b. Submit drawings showing locations, size and full details of foundation bolts for all components for all pumping units.
 - c. For all pumping units, a dimensioned and scaled assembly outline drawing or drawings of the complete pump, drive, and all associated equipment furnished shall be submitted for approval. Such drawing or drawings shall show plan, elevation, and any other views or sections requested.
 - d. For all pumping units, a scaled cross-sectional drawing of the assembled pump showing full details and materials of construction shall be submitted for approval.
 - e. The Contractor shall submit all other drawings, material lists and other information specified, requested and/or necessary to show complete compliance with all details of the contract documents. Wiring diagrams are required.
3. Maintenance and Operations Manual: Manual shall contain all information necessary for proper operation and maintenance of pumping units, as well as the location of the nearest permanent service headquarters.

1.07 TESTS

A. Shop Tests:

1. The pumps shall be fully tested at the manufacturer's works before shipment at their rated speed, capacity, and head, and at such other conditions of head and capacity to establish that each has met all guarantees on the characteristic curves submitted. Testing shall be done in accordance with the Hydraulic Institute Standards, Level A. Five (5) certified copies of the results of these tests are to be sent to the Engineer. Also included with the test curves shall be a certified bill of material list depicting quality of construction. Such tests shall be accomplished at the manufacturer's facility prior to shipment.

B. Field Tests:

1. The field tests shall be made by the Contractor in the presence of and as directed by the Engineer. Testing shall be done in accordance with the Hydraulic Institute Standards.
2. Field tests shall be made on each pumping unit. Included therein, each pump shall be run at maximum rated speed for at least three (3) rates of flow corresponding to minimum rate, design rate, and maximum rate of flows specified as evidenced by the corresponding total dynamic head shown by the pump gages; simultaneous ammeter readings shall be taken. Variation of the rate of flow shall be made by throttling the discharge valve (where applicable). The rated motor nameplate current and power shall not be exceeded at any rate of flow within the specified range.
3. Before any pump is rotated, the Contractor shall make certain that no debris is present in suction well, pumps or pipe lines. Any internal damage done to equipment while starting up shall be assumed to be caused by debris and shall be replaced at the Contractor's expense. No pump shall be rotated under power unless filled with liquid.
4. When water can be pumped, the Contractor shall commence pumping and shall have representatives from the pump manufacturer to start the pumps. When flow conditions are favorable, the Contractor or pump manufacturer shall in the presence of the Engineer, run a series of tests to establish the adequacy of the pumping program.

C. Failure of Tests: Any defects in the equipment or failure to meet the guarantees or requirements of the specifications shall be promptly corrected by the Contractor by replacements or otherwise. The decision of the Engineer as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails or refuses to make these corrections or if the improved equipment, when tested, shall fail again to meet the guarantees of specified requirements, the Owner notwithstanding its having made partial payment for work and materials which have entered into the manufacture of said equipment, may reject said equipment and order the Contractor to remove it from the premises at his own expense.

1. In case the Owner rejects said equipment, then the Contractor hereby agrees to repay to the Owner all sums of money paid to him for said rejected equipment on progress certificates or otherwise on account of the lump sum prices herein

specified, and upon the receipt of said sum of money the Owner will execute and deliver to the Contractor a bill of sale of all its rights, title, and interest in and to said rejected equipment; provided, however, that said equipment shall not be removed from the premises of the Owner until the Owner obtains from other sources the equipment to take the place of the rejected. The Owner hereby agrees to obtain said other equipment within a reasonable time and the Contractor agrees that the Owner may use the equipment furnished by him without rental or other charge until said other new equipment is obtained.

- D. Responsibility During Test: The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.
- E. Manufacturer's Representative: For all pumping units, the Contractor shall furnish the services of accredited representatives of the pump manufacturer who shall supervise the installation, adjustment, and field tests of each pumping unit and give instructions to the operating personnel. As one condition necessary to acceptance of any pumping unit, the Contractor shall submit a certificate from the manufacturer, stating that the installation of the pumping unit is satisfactory, that the unit is ready for operation, and that the operating personnel have been suitably instructed in the operation, lubrication, and care of the unit.

1.08 IDENTIFICATION - NAMEPLATES

- A. Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number and principal rating date.

1.09 GUARANTEE PERIOD

- A. The Contractor shall guarantee and warrant that the equipment furnished and installed is free from defects of design, material and workmanship, and will operate satisfactorily. In the event the equipment fails to perform as specified, and after the Owner has given due notice, the Contractor or Supplier, at their own expense, shall promptly repair or replace the defective equipment without any additional cost to the Owner.
- B. After successful completion of tests and trials under operating conditions on all equipment, the Contractor shall guarantee all equipment and materials from undue wear and tear from mechanical and electrical defects, and from any failure whatever except those resulting from proven carelessness or deliberate actions of the Owner, for a minimum of one (1) year from Substantial completion as detailed in section 01120 "General Provisions". This one (1) year minimum shall not replace a standard Manufacturer's guarantee if it exceeds one (1) year.

1.10 AMERICAN IRON AND STEEL

Under the requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies to American Iron and Steel requirement to this project. All listed iron and steel products used in this project must be produced in the United States.

PART 2 - PRODUCTS

2.01 VERTICAL TURBINE PUMPS

A. General

1. The pumping units required under this section shall be complete including suction barrels and pumps with proper alignment and balancing of the individual units. All parts shall be so designed and proportioned as to have liberal strength, stability, and stiffness and to be especially adapted for the service to be performed. Ample room for inspection, repairs and adjustment shall be provided.
2. All necessary anchor bolts, nuts and washers shall be furnished by the pump manufacturer for installation by the Contractor. Anchor bolts, nuts and washers shall be 316 stainless steel. A molybdenum disulfide anti-seize agent shall be supplied for use with all stainless steel bolts.
3. Stainless steel nameplates giving the name of the manufacturer, the rated capacity, head, speed and all other pertinent data shall be attached to each pump, motor variable frequency drive and control panel.
4. Each pumping unit and its driving equipment shall be designed and constructed to withstand the maximum turbine run-away speed of the unit due to back flow through the pump with the maximum TDH specified available at the pump discharge flange. The maximum reverse runaway speed shall not exceed 180 percent of the design pump maximum operating speed. A statement of compliance with this requirement must be furnished with the Shop Drawings submittal.

B. Pumps

1. General

- a. The pumps shall be of the vertical turbine type. Each unit shall include a bowl assembly (strainer), column and open line shaft, enclosed impeller, discharge head and driver as specified. Water lubricated line shafts shall be provided. The pumps shall be equipped with an anti-vortex baffle to be mounted inside the basket strainer.
- b. The pumps shall be built to standard dimensions such that parts will be interchangeable between like units and all units shall be supplied by the same manufacturer.
- c. The pumps shall be as manufactured by Christensen, Peerless, Fairbanks Morse, Flowserve, or Engineer approved equal.

2. Performance Requirements

- a. When operating at the maximum output speed of the motor, each pump shall have a characteristic performance curve and which meets all the minimum conditions listed in the Vertical Turbine Pump Schedule. The pumps and drive motors shall be capable of operating satisfactorily under the full range of conditions as defined by the Pump Schedule. Motors shall be non-overloading throughout the range of operation.

- b. Each pump shall be capable of continuous adjustable speed operation over the speed range from 100 percent to 60 percent of pump design speed. There shall be no significant change in vibration and noise level.
- c. Maximum motor speeds shall not exceed those listed in the Vertical Turbine Pump Schedule to satisfy the specified hydraulic duty requirements. The pump design speed shall be the maximum output speed of the motor furnished, when operating at the pump's design capacity and head at 60 Hertz on utility power (full motor speed).
- d. With the pumping units operating at full motor speed, the maximum brake horsepower required by the pumps shall not exceed the maximum horsepower listed in the Vertical Turbine Pump Schedule.
- e. The pumps shall meet the requirements as listed in the table and shall be the model numbers as manufactured by Christensen, Peerless, Fairbanks Morse, Flowserve, or Engineer approved equal.
- f. Each pump shall be designed for the conditions of service tabulated in the following Pump Schedule. The Contractor shall furnish, install and place into operation new vertical turbine pumps at the following locations, as shown on the Drawings:

VERTICAL TURBINE PUMP SCHEDULE

Parameter	High Service
Number of Pumps	3
Design Flow (GPM)	980
TDH (feet)	450
Shutoff Head (feet)	660
Operating Point	980 gpm @ 450' TDH
Operating Point at Runout	1,300 gpm @ 300' TDH
Speed Type	VFD
Horsepower (Per Pump)	150
Efficiency at Operating Point	84.1%
Max Speed (rpm)	1,770
Manufacturer	Flowserve
Model No.	12EMM
Impeller	9.31"±
No. of Stages	7
Column/Discharge Size (Flanged)	8"
Min. Pump Shaft Diameter (In.)	1.5"

* Pumps shall be operated by VFD – see Specifications Division 16.

3. Pump Construction

- a. The connection of the output shaft of the motor to the head shaft shall be made with a motor base coupling to allow low headroom removal of the motor. Impeller adjustments shall be made by the top adjusting nut in the VHS motor.
- b. The pump shall be furnished with a suitable, integral fabricated ASTM A-36 steel mounting ring of adequate design with registered fit to match the mounting dimensions of the drive motor.
- c. The discharge head shall be fabricated steel construction of ASTM A-36 steel, 3/8-inch minimum thickness and of the above base type and shall conform to the drawings with a flat faced flanged discharge connection conforming, dimensionally, to ANSI/AWWA A21.15/C115. The packing gland access openings shall be of adequate size to allow for packing adjustment and replacement and shall be protected by expanded metal screens constructed of 316 stainless steel.
- d. Incorporated in the fabrication of the discharge head shall be a suitable pump support base not less than 1-1/2 inch in thickness of standard ANSI B16 B2 flanged dimensions to support both the pump and the motor. The flange bolting shall be in accordance with the requirements of ANSI B16 B2.
- e. The discharge head will be fitted with an ASTM A-48 Class 30, bleed off type stuffing box, having an ASTM B-584 alloy 932 or 836 bronze stuffing box bearing, an ASTM B-584 alloy 932 or 836 bronze cage ring, ASTM B-584 alloy 932 or 836 split packing gland and not less than four (4) rings of braided teflon packing.
- f. The pump head shaft shall be constructed of ASTM A-276 416 or 17-4 P.H. stainless steel alloy. Shaft diameter shall be determined by ANSI B58.1 standards for Deep Well Vertical Turbine Pumps, Section A4.3.3, but in no case be less than the diameter shown in the Vertical Turbine Pump Schedule.
- g. The pump column shall be constructed of ASTM A-36 steel, not less than Schedule 30, flanged at each end. The column shall mate with the pump bowl assembly and the discharge head with fits to assure correct alignment. The column assembly shall have guides fabricated to the column assembly. Each guide shall contain a water lubricated rubber bearing designed for vertical turbine pump service.
- h. The pump line shaft shall be constructed of ASTM A-276 416 Stainless Steel Alloy and its diameter determined as described in 2.02 C.5 above but in no case shall it be less than the minimum diameter listed in the vertical turbine pump schedule. Line shaft shall have a hardened stainless steel shaft sleeve with a Brinell hardness of 410/484.
- i. The line shaft couplings shall be of the threaded type constructed of ASTM A-276 416 Stainless Steel Alloy and of such design that no threaded parts which could cause "galling" are interconnected. Alternate constructions must be of a design acceptable to the Engineer.

- j. The pump impellers shall be of the mixed flow or radial type constructed of ASTM B-584 alloy 836 bronze accurate fitted and balanced. Enclosed impellers shall be fitted with ASTM B-584 alloy 32 or 836 wear rings. The impellers shall be attached to the shaft by means of a key constructed of ASTM A-276 316 Stainless Steel. The impellers shall be adjustable by means of a top shaft adjusting nut. The impeller shaft shall be of stainless steel of not less than 12% chrome content and shall be supported by bronze or neoprene bearings located on both sides of each impeller.
- k. The pump bowls shall be constructed of ASTM A-48 Class 30 cast iron having a minimum tensile strength of 30,000 psi free from blow holes, sand holes, and all other faults. The pump bowls shall be of sufficient thickness to withstand stresses and strains at full operating pressure. The bowls shall be subjected to a hydrostatic test 150 percent of that specified at the intermediate design condition. The bowls shall be designed and manufactured with open and smooth water passages to assure efficient, reliable operation.
- l. If an enclosed impeller design is furnished, the bowls shall be fitted with ASTM B-584 alloy 932 or 836 bronze case wear rings. If an open or semi-open impeller design is furnished the bowl assembly shall be fitted with a replaceable impeller liner clamped between the suction bell and the first stage bowl and thereafter between each stage. This replaceable liner shall be constructed of ASTM B-584 alloy 932 or 836 bronze.
- m. The suction case bearings, and all intermediate bowl bearings shall be constructed of ASTM B-584 alloy 932 or 836 bronze.
- n. Pump Coating: All portions of the column and pump discharge head not exposed to view, except for the interior of the bowls, shall have an interior and an exterior coating of high build modified epoxy of 6 to 8 mils dry thickness, compatible with the pump service. Surface preparation shall be in accordance with the coating manufacturer's recommendations.
- o. Pump column/shaft shall have a nominal length of not over five (5) feet.

4. Motors

A. General

- 1) The motors for the pumps shall be of the vertical, hollow shaft squirrel cage induction type. Motor frames shall be of the WP-I design, with a max temperature rise of 60 degree C over a 40 degree C ambient.
- 2) Motors must be designed to accept all up thrust loads imposed by pump during starting and running. All pump motors shall have "high thrust" bearing design. All motors shall be equipped with non-reverse ratchet.
- 3) All motors shall be built in accordance with latest NEMA, IEEE, ANDI and AFBMA standards where applicable.

- 4) Motors shall conform to all requirements stipulated in PART 1 - GENERAL of this Section of the Specifications and with the specifications for motors included in Division 16.
- 5) The motors shall be compatible with the pumps.
- 6) Furnish motor base couplings to allow "low headroom" pump removal.
- 7) The Vertical Turbine pump motors shall be inverter duty rated in accordance with NEMA MG1, Part 31 and shall include shaft grounding rings and winding thermostat protection.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordinate with other trades, equipment and systems to the fullest extent possible.
- B. Take all necessary measurements in the field to determine the exact dimensions for all work and the required sizes of all equipment under this contract. All pertinent data and dimensions shall be verified by the Contractor.

3.02 INSTALLATION

- A. Installation shall be in strict accordance with the manufacturer's instructions and recommendations in the locations shown on the Drawings. Anchor bolts shall be set in accordance with the manufacturer's recommendations and setting plans.
- B. Qualified supervisory services, including manufacturer's engineering representatives, shall be provided for a minimum of 4 man-days to insure that the work is done in a manner fully approved by the respective equipment manufacturer. The pump manufacturer's representatives shall specifically supervise the installation and alignment of the pump with the driver, the grouting, the alignment of the connection piping and the installation of the field-installed mechanical seal. If there are difficulties in the start-up or operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no cost to the Owner. Services of the manufacturer's representatives and training shall be provided when the first pump is started, with follow-up visits upon start-up of each subsequent pump.
- C. Connection of piping to pumps shall be done in presence of the Engineer. All piping connections to the pump shall be done without bending and/or twisting the piping to mate with the pump flange connections.
- D. A certificate from each equipment manufacturer shall be submitted stating that the installation of his/her equipment is satisfactory, that the equipment is ready for operation and that the operating personnel have been suitably instructed in the operation, lubrication and care of each unit.

3.03 FIELD TESTS

- A. In the presence of the Engineer, such tests as necessary to indicate that the pumps, motors, and variable speed drives generally conform to the efficiencies and operating conditions specified shall be performed. A thirty-day operating period of the pumps will be required

before acceptance. If a pump performance does not meet the Specifications, corrective measures shall be taken or the pump shall be removed and replaced with a pump which satisfies the conditions specified. All test procedures shall be in accordance with Hydraulic Institute Standards certified results of tests shall be submitted. Provide, calibrate and install all temporary gauges and meters, shall make necessary tapped holes in the pipes, and install all temporary piping and wiring required for the field acceptance tests. Written test procedures shall be submitted to the Engineer for approval 30 days prior to testing.

3.04 TRAINING

- A. A factory representative shall provide a minimum of eight (8) man-hours of training to the Owner's operations staff concerning the recommended operation and maintenance of the equipment. Training shall be performed after substantial completion of the project with the use of operating equipment.

END OF SECTION

SECTION 11290**INTERIOR PROCESS PIPING****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required to furnish and install all plant process piping as shown on the Drawings and specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Interior Process Valves: Section 11295
- B. Piping furnished with equipment is included in the specific equipment item.

1.03 SUBMITTALS

- A. The Contractor shall comply with the requirements of Section 01300 of these specifications.
- B. A notarized certification shall be furnished for all pipe and fittings which verifies compliance with all applicable specifications.

1.04 AMERICAN IRON AND STEEL

Under the requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies to American Iron and Steel requirement to this project. All listed iron and steel products used in this project must be produced in the United States.

PART 2 - PRODUCTS**2.01 DUCTILE IRON PIPE/DUCTILE IRON FITTINGS**

- A. Unless otherwise noted or required, all inside ductile iron piping shall be flanged pipe with threaded flanges in accordance with AWWA C 115. All piping flanges shall have ring gaskets, 1/8-inch thick.
- B. All exposed iron pipe to be field painted shall be furnished with an external coating of rust inhibitive primer, such as Tnemec Series 1 OmniThane, Sherwin-Williams Corothane I GalvaPac, or equal. Pipe manufacturer shall be responsible for compatibility of shop applied coatings with the field paint systems and products specified in Division 9, Section 09960. Do not apply asphalt or bituminous coatings on pipe to be painted.
- C. The interior of all ductile iron pipe shall be cement-mortar lined with bituminous seal coat in accordance with AWWA C 104. Thickness of the lining shall be as set forth in Section 4.8.1 of the aforementioned specification unless otherwise directed by the Engineer.
- D. Ductile iron fittings shall conform to AWWA C 110 with flanges faced and drilled to Class 300 or Class 125 as indicated on the Drawings. Fittings shall have interior lining and exterior coating same as the pipe.

2.02 POLYVINYL CHLORIDE (PVC) PLASTIC PRESSURE PIPE

- A. PVC Pressure Pipe, 3" and Smaller: Polyvinyl chloride plastic pipe shall be ASTM D 1785 Schedule 80 or F441 CPVC, Schedule 80 with solvent weld joints. Fittings shall be ASTM D 2467 Schedule 80 socket type. All socket type connections shall be made with PVC solvent cement complying with ASTM D 2564 PVC solvent cement shall be furnished from the same supplier as the PVC pipe. Provide socket-threaded adapters for connection to threaded appurtenances where required.

2.03 COPPER PIPING

- A. Copper piping shall be ASTM B 88 Type L seamless copper water tube, with ANSI B16.18 cast brass solder joint pressure fittings. Provide solder joint-threaded unions at all threaded valves and appurtenances.

2.04 STAINLESS STEEL

- A. Stainless steel pipe shall be ASTM A 312, AISI Type 316. Schedule 40, threaded. Stainless steel fittings shall be AISI Type 316, 150-lb., threaded, as manufactured by Camco Fittings Company, Hamden, Connecticut, or equal.

2.05 CHEMICAL FEED PIPING

- A. Chemical feed piping shall be as specified in Section 11240 Chemical Feed Equipment, included hereinafter.

2.06 WALL PIPE AND SLEEVES

- A. All wall pipe shall be furnished with cast or welded collar water stops in the positions shown on the Drawings. Welding of water stop collars on pipe shall be accomplished by the wall pipe manufacturer in their shop. All centrifugally cast wall pipe shall be ductile iron meeting the requirements of AWWA C151 for the pipe barrel, conforming to the pressure rating of the pipeline in which installed, and in no case be lighter than Class 53.
- B. All statically cast wall pipe shall be ductile iron meeting the requirements of AWWA C110 for fittings. Mechanical joint end and cast-on flange end wall pipe shall conform to AWWA C110 and threaded flange wall pipe shall conform to AWWA C115. Where flanged or mechanical joint bell ends are flush with the wall, they shall be drilled and tapped for stud bolts which are to be of 300 Series stainless steel.
- C. The length of all wall pipe shall be not less than the thickness of the wall in which installed. Wall pipe shall have the same pressure rating as connecting pipe. All wall pipe shall be cement-mortar lined per AWWA C104. The outside of wall pipes shall be left uncoated and shall be field primed for painting on the portion exposed, uncoated where embedded and field coated with standard bituminous coated where buried.
- D. Contractor may have the option to install wall pipe flush face-to-face of wall in lieu of the dimensioned length wall pipe shown on the Drawings, in order to eliminate form penetrations. This option will be subject to Engineer's review at each wall pipe location and covers both flanged and mechanical-joint bell-end wall pipe. Embedded flanged and M.J. bell-end bolt holes shall be tapped for stud bolts; tapped bolt holes in embedded flanges shall be plugged for protection during concrete pouring.
- E. All pipe wall sleeves shall be plain end galvanized steel pipe of diameter noted on Drawings and length to fit flush face-to-face of wall.

2.07 INTERLOCKING LINK PIPE SEALS

- A. In all locations indicated on the Drawings, interlocking link pipe seals shall be used in lieu of lead packing a pipe wall sleeve. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall sleeve. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the pipe and wall sleeve. Seals shall be "Link-Seal" as manufactured by Thunderline Corporation, Wayne, Michigan, or approved equal.
- B. The Contractor shall determine the required diameter of each individual wall opening according to the manufacturer's recommendations before ordering and installing the seal. Pipe shall be accurately centered in the sleeve and the link seals shall be sized, installed and tightened in accordance with the manufacturer's instructions.

2.08 COUPLINGS AND ADAPTERS

- A. Flexible couplings shall be of the sleeve type with a middle ring, two round-wedge shaped rubber gaskets at each end, two following rings together and compress the gasket against the pipe. Flexible couplings shall be steel with minimum wall thickness of the middle ring or sleeve installed on pipe being 5/16-inch for pipe smaller than 10 inches, 3/8-inch for pipe 10 inches or larger. The minimum length of the middle ring shall be 5-inches for pipe sizes up to 10 inches and 7 inches for pipe 10 inches to 30 inches. The pipe stop shall be removed. Gaskets shall be suitable for 250 psi pressure rating or at rated working pressure of the connecting pipe. Couplings shall be harnessed and be designed for 250 psi.
- B. Flanged adapters shall have one end suitable for bolting to a pipe flange and the other end of flexible coupling similar to that described hereinbefore. All pressure piping with couplings or adapters shall be harnessed with full threaded rods spanning across the couplings or adapters. The adapters shall be furnished with bolts of an approved corrosion resistant steel alloy, extending to the adjacent pipe flanges. Flanges on flanged adapter (unless otherwise indicated or required) shall be faced and drilled ANSI B16.1 Class 125.
- C. Flexible couplings and flanged adapters shall be as manufactured by Dresser, Rockwell, or equal, per the following, unless otherwise specified and/or noted on the Drawings:

- 1. Steel couplings for joining same size, plain-end, steel, cast iron, and PVC plastic pipe -

Dresser	Smith-Blair
Style 253 (2"-15")	411
Style 38/138 (18" & above)	

- 2. Transition couplings for joining pipe of different outside diameters-

Dresser	Smith-Blair
Style 162 (4"-12")	413 steel (2"-24")
Style 62 (2"-24")	415 steel (6"-48")
	433 cast (2"-16")
	435 cast (2"-12")

3. Flanged adapters for joining plain-end pipe to flanged pipe, fittings, valves and equipment.

Dresser	Smith-Blair
Style 227 cast (3"-12")	912 cast (3"-12")
Style 128 steel (3"-48" D.I. Pipe)	913 steel (3" and C.I. Pipe)
Style 128 steel (2"-96" steel pipe)	

2.09 FLANGED JOINTS

- A. Flange bolts and nuts shall be ASTM A 307, Grade B and shall have hexagonal heads. All bolts, nuts and studs for flanged pipe in submerged locations shall be of 300 Series stainless steel. The flanges shall be drawn together until the joint is perfectly tight, with bolts of a length such that they will not project greater than 1/4-inch from the nut nor fall short of the end of the nut when drawn up. No washers shall be used. Gaskets shall be carefully fabricated prior to installation and must be suitable for pressure rating for the pipe for which it is used.
- B. All flanges (unless otherwise indicated or required) shall be faced and drilled ANSI B16.1 125-pound for ductile iron and ANSI B16.5 150-pound for steel.
- C. At the Contractor's option, and at no additional expense to the Owner, the following patented SBR flange gaskets or approved equal may be substituted for standard sheet packing ring gaskets in ductile iron flanged pipe:
1. TORUSEAL by American Cast Iron Pipe Company
 2. FLANGE-TYTE by United States Pipe & Foundry Company

When using such gaskets, flange bolts shall be torqued to manufacturer's recommended torque values.

2.10 METAL PIPE SUPPORTS AND HANGERS

- A. The Contractor shall furnish and install all pipe hangers, inserts, brackets, plates, anchors, and other supports not specifically included under other items. Generally pipe supports are not shown on the Drawings, but shall be supplied as specified herein. However, any bracing or support details shown on the Drawings shall be followed.
- B. Prior to installation, the Contractor shall submit to the Engineer for review, manufacturer's data sheets on all catalogued items to be used and sketches covering all specially designed hanger and support assemblies and fabrications.
- C. Supports and hangers shall be as manufactured by Grinnell, Elcen, or Fee & Mason, or equal or fabricated by the Contractor. Field fabricated supports may be used only for special conditions where manufactured items may not be suitable. In such cases, details of proposed supports shall be submitted to the Engineer for review. All such supports shall be galvanized.
- D. Except as shown on the Drawings or as directed by the Engineer, supports and hangers shall be as follows:
1. Pipes with centerlines less than 24 inches from a wall shall be supported by a typical wall support bracket. Pipes with centerlines less than 6 feet above a floor shall be supported from below. All other pipes shall be hung from above. Piping shall be supported at no greater than 10 feet 0 inches on centers.

2. Pipe supported from underneath shall have adjustable pipe saddle supports on properly sized pipe stanchions. The saddle assembly shall be of cast iron. Standard pipe stanchions with hold-down "U" bolts shall be Grinnell Fig. 259, Elcen Fig. 49, Fee & Mason Fig. 2595, or equal.
3. Hangers are to be suspended from concrete work. Hangers shall be supported from approved metal inserts placed in concrete before the concrete is placed. Standard concrete inserts shall be Grinnell Fig. 281 or 282, Elcen Fig. 86 or 65, Fee & Mason Fig. 186 or 2570, or equal. If special support from overhead concrete is necessary due to unusually heavy loads, support shall be as detailed on the Drawings. In no case shall standard concrete inserts be used where pipe load exceeds the manufacturer's recommended load for the insert, or where the hanger rod exceeds 7/8" diameter.
4. All pipe hangers, inserts, clamps, supports and other like items shall be submitted for review by the Engineer prior to installation.
5. All inside horizontal flanged piping shall be supported with approved split ring type adjustable hangers of malleable iron with suitable hanger rods unless shown otherwise on the Drawings. Special supports shall be constructed in accordance with details shown on the Drawings. Wall supports and/or hangers shall be placed not over 10 feet apart. All piping shall be rigidly supported to prevent loosening under vibration.
6. Pipe, valve operating stems, fixtures and conduits shall be bracketed or suspended from walls, ceilings, and beams at or near valves and fittings and where needed for firm support, by standard brackets, rods, turnbuckles, and rings made especially for pipe of sizes supported. Perforated strap iron and/or copper will not be acceptable.
7. Clevis hangers for "iron pipe size" O.D. pipe shall be Grinnell Figure 65, Elcen Figure 12, Fee & Mason Figure 239, or equal. Clevis hangers for Cast Iron O.D. pipe shall be Grinnell Figure 260, Elcen Figure 12C, Fee & Mason Figure 104, or equal. All clevis hangers shall be galvanized.
8. Turnbuckles shall be forged steel. Rods shall be of black steel, machine threaded of following sizes:

Pipe Size	Rod Diameter
1/2" - 2"	3/8"
2 1/2" - 3"	1/2"
4" - 5"	5/8"
6"	3/4"
8" - 12"	7/8"
14" - 16"	1"
18"	1 - 1/8"
20" - 24"	1 - 1/4"

9. Brackets shall be of standard castings of fabricated steel and shall be reviewed by the Engineer. Standard catalogued bracket shall be medium duty Grinnell Fig. 195, Elcen Fig. 57, Fee & Mason Fig. 151, or equal, galvanized, size as noted on Drawings. Provide light or heavy duty brackets if specifically noted on Drawings. "U" bolts shall be Grinnell Fig. 137, Elcen Fig. 68 or 68A, Fee & Mason Fig. 176, or equal.
10. Column type pipe supports shall consist of pipe columns of size required to carry the full pipe and standard cast iron bases and saddles as required. Saddles shall be of proper size to fit the pipe being supported.

2.11 INSULATION AND HEAT TRACING

Where indicated on the Contract Drawings or stated in the specifications, process piping shall be provided with insulation and heat tracing cables.

A. Insulation shall be one-piece fiberglass section insulation (K=0.23 at 75 degrees F.) with factory applied white reinforced kraft/foil vapor barrier jacket. Longitudinal jacket laps and butt joints shall be self-sealing using 3" wide lap strips. Insulation shall be one of the following:

1. Johns-Manville "Flame Safe AP-T 500 degrees F."
2. Owens/Corning "Fiberglass 25 ASJ/SSL".
3. Certainteed "Fiberglass 500 Degree Snap-On".

Insulation shall be 1" thick, minimum.

B. Finishing Materials:

1. Acceptable manufacturers, insulating cement:
 - a. Johns-Mansville No. 375.
 - b. 48 Insulations "Quik-Set".
 - c. Rockwood Mfg. Co. "Delta-Maid One Shot".
2. Acceptable manufacturers, breather mastic:
 - a. Benjamin Foster "Sealfas 30-36".
 - b. Insul-Coustic "Permsure IC-102".
 - c. Vimasco No. 713.
 - d. Childers "Chil-Seal CP-50".
 - e. Epolux "Cadalog 336".
3. Acceptable manufacturers, PVC premolded covers:
 - a. Johns-Manville "Zeston".
 - b. Ceel-Co.

C. Heat tracing system shall be as specified in Division 15, Thermal Insulation, suitable for use on CPVC or stainless steel pipe, as applicable, and for a temperature range of 40 degrees to 102 degrees. Components of the heat tracing system shall be coordinated as to type, wattage and quantity of cables, type and thickness of insulation, type and diameter of pipe per manufacturer's recommendation.

PART 3 - EXECUTION**3.01 INSTALLATION OF PIPING**

- A. Materials shall be new and of the best grade and quality; workmanship shall be first class in every respect.
- B. Each piece of iron pipe and each fitting shall be plainly marked at the foundry with class number and weight.
- C. Where indicated on the Drawings, plain-end pipe shall be joined by means of flanged adapters or flexible couplings which shall be Rockwell, Dresser, or equal.
- D. All pipe couplings shall be designed to safely withstand the operating pressure of the lines in which they are installed. All couplings shall be shop primed with an approved rust inhibitive primer.
- E. Taps and connections to piping shall be made as required to connect equipment, sample lines, etc., and where otherwise shown on the Drawings.
- F. Piping shall be installed straight and true, parallel or perpendicular to walls, with approved offsets around obstructions. Standard pipe fittings shall be used for changing direction of piping. No mitered joints or field fabricated pipe bends are permitted unless accepted by the Engineer.
- G. All piping, fittings, valves and other accessories shall be thoroughly cleaned of dirt, chips and foreign matter before joint connections are made.
- H. All plastic pipe shall be adequately supported and braced. Support spacing shall not exceed the recommendations of the Plastics Pipe Institute.
- I. Teflon tape shall be used on all plastic pipe threaded connections.
- J. Field cut male threads on plastic pipe shall be made with plastic pipe threading dies.
- K. The annular space of plain wall sleeves shall be packed tight with lead wool to within 3/4" of wall face and then patch grouted flush to wall face with non-staining nonshrink grout, Masterflow 713 by Master Builders, SonogROUT by Sonneborn-Contech, or equal.
- L. All pipe sleeves passing through walls or floors of chlorine feed and storage areas shall be provided with gas tight seals.
- M. All pipe threads shall conform to ANSI B2.1.
- N. Piping shall be erected to provide for expansion and contraction.
- O. Screwed or soldered unions shall be provided in all small piping as required to permit convenient removal of equipment, valves and piping accessories from the piping system.
- P. Dielectric insulating couplings or brass adapters shall be used whenever the adjoining materials being connected are of dissimilar material such as connections between copper tubing and steel pipe.
- Q. All inside piping shall be color coded, stenciled and label tagged for identification as specified in Section 09900.

3.02 INSTALLATION OF PIPELINE INSULATION

A. Piping:

Butt all joints firmly together and secure all "self-seal" jacket laps with lap adhesive. Seal all butt joints with joint strips furnished with insulation. Taper all pipe insulation ends and cover with insulating cement.

B. Fittings and valves:

1. Hot lines 2" and smaller: Valves, unions, and flanges shall not be insulated.
2. Hot and cold lines 2-½" and larger and cold lines 2" and smaller: Valves, unions, and flanges shall be insulated as follows, but insulation shall be removable to facilitate maintenance.
3. Insulate with molded fiberglass fitting segments of pipe covering, or with firmly compressed fiberglass blanket. Secure in-place with 20 gauge galvanized steel wire and finish with a smooth coating of insulating cement. Pipe sizes under 4" may be insulated with hydraulic cement. All thicknesses shall be equal to that of adjoining pipe insulation.
4. Finish insulation with two (2) 1/16" thick coats of mastic, applied at not more than 15 sq. ft. per gallon and reinforced with white glass fabric embedded between the coats. (Use breather mastic on hot pipelines and vapor barrier mastic on cold pipelines). Lap the glass fabric on itself and on adjoining pipe insulation.
5. Option: Factory premolded PVC fitting covers may be used. Premolded covers shall overlap the adjoining pipe insulation and jackets and shall be secured at all edges with vapor barrier adhesive on cold pipes. Secure ends of all covers with pressure sensitive vinyl tape which shall overlap both the jacket and the cover at least 1". On fittings where temperature exceeds 250 degrees F., two layers of insulation shall be applied with a few wrappings of twine on the first layer to eliminate any voids or hot spots.

3.03 HEAT TRACING SYSTEM INSTALLATION

- A. Heat tracing system shall be coordinated and installed per manufacturer's recommendations.

END OF SECTION

SECTION 11295**INTERIOR PROCESS VALVES****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide all labor, materials, equipment and services required to furnish and install all new valves as shown on the Drawings and/or specified herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Interior Process Piping: Section 11290

1.03 SUBMITTALS

- A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering. Comply with provisions of Section 01300.
- B. At the time of submission, the Contractor shall, in writing, call Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications.

1.04 AMERICAN IRON AND STEEL

Under the requirements of Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies, Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies to American Iron and Steel requirement to this project. All listed iron and steel products used in this project must be produced in the United States.

PART 2 - PRODUCTS**2.01 PLUG VALVES**

- A. All plug valves shall be eccentric plug valves unless otherwise specified.
- B. Valves shall be of the non-lubricated eccentric type with flanged ends faced and drilled per ANSI B16.1 125 lb.
- C. Valve bodies shall be flushing body type and made of ASTM A126 Class B cast iron. Valves shall be furnished with a 1/8" welded overlay seat of not less than 95% pure nickel. Seat area shall be raised, with raised surface completely covered with weld to insure that the plug face contacts only nickel. Screwed-in seats shall not be acceptable.
- D. Plugs shall be made of ductile iron and have a cylindrical seating surface eccentrically offset from the center of the plug shaft. The interference between the plug face and body seat, with the plug in the closed position, shall be externally adjustable in the field with the valve in the line under pressure. Plug shall be resilient faced with neoprene or hycar, suitable for use with settled sludge.

- E. Valves shall have replaceable sleeve type bearings and grit seals at the upper and lower journals.
- F. Valve shaft seals shall be of the multiple V-ring type and shall be externally adjustable and repackable without removing the bonnet or actuator from the valve under pressure. Valves utilizing O-ring seals or non-adjustable packing shall not be acceptable.
- G. Valve pressure ratings shall be 175 psi through 12" and 150 psi for 14" through 72". Each valve shall be given a hydrostatic and seat test with test results being certified when required by the specifications.
- H. Manually operated valves 4-inch and larger shall have a worm gear actuator, stainless steel input shaft and handwheel operator. Manually operated valves 3-inch and smaller shall have a lever operator. All gearing shall be enclosed in a semi-steel housing and be suitable for running in a lubricant with seals provided on all shafts to prevent entry of dirt and water into the actuator. The actuator shaft shall be stainless steel and the quadrant shall be supported on permanently lubricated bronze bearings. Actuators shall clearly indicate valve position and an adjustable stop shall be provided to set closing torque and to provide seat adjustment to compensate for change in pressure differential or flow direction change. All exposed nuts, bolts and washers shall be stainless steel.
- I. Any cylinder actuators shall be equipped with 2-inch square operating nuts to allow manual valve operation in case of supply failure. Electric motor actuated valves shall comply with specification Section 13400.
- J. Valves shall provide drip tight shutoff up to the full pressure rating. Valves shall be provided with adjustable limit stops and rotate 90 degrees from fully opened to fully closed.
- K. Valves located 6 feet or more above the floor shall be furnished with chain wheel operators.
- L. Valves shall have rectangular port openings for throttling service, and shall open to 100% of the corresponding pipe diameter.
- M. Plug valves shall be as manufactured by DeZurik, VAG USA., M&H or approved equal,

2.02 GATE VALVES

- A. Gate valves 4" and larger shall conform with AWWA C-509 standard, and shall be of the resilient seat type, iron body, fully bronze mounted, non-rising stem and have a design working pressure of 200 psi. Valves shall be of standard manufacturer and of the highest quality both as to materials and workmanship.
- B. Valves ends shall be flanged and shall conform to ANSI B16.1 class 125 and be handwheel operated, unless otherwise shown on the Drawings or specified hereinafter.
- C. An epoxy coating conforming to AWWA C-550 shall be applied to the interior and exterior ferrous surfaces of the valve except for finished or seating surfaces.
- D. All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve.
- E. Gate valves shall be as manufactured by Mueller Co., M&H, Clow, American Valve & Hydrant, Kennedy, or equal.

2.03 CHECK VALVES

- A. The valve is a counterweighted, rubber seated check valve with attached cushion chamber whose function is to permit flow in only one direction, close tightly when its discharge side pressure exceeds its inlet pressure, and to close without a slam or bang.
- B. The swing check valve shall be constructed with heavy cast iron or cast steel body with a bronze or stainless steel seat ring, a non-corrosive shaft for attachment of weight and lever, and complete non-corrosive shockless chamber.
- C. It shall absolutely prevent the return of water, oil or gas back through the valve when the inlet pressure decreases below the delivery pressure. The valve must be tight seating, and must be shockless in operation. The seat ring must be renewable.
- D. The cushion chamber shall be attached to the side of the valve body externally and so constructed with a piston operating in a chamber that will effectively permit the valve to be operated without any hammering action. The shock absorption shall be by air, and the cushion chamber shall be so arranged that the closing speed will be adjustable to meet the service requirements.
- E. The valve disc shall be of cast iron or cast steel and shall be suspended from a non-corrosive shaft which will pass through a stuffing box and be connected to the cushion chamber on the outside of the valve.
- F. All material and workmanship shall be first class throughout and the purchaser reserves the right to inspect this valve before shipment.
- G. The valves will be GA Industries, Inc. Fig. No. 250-D, 125# or equal.

2.04 SLOW CLOSING AIR AND VACUUM VALVES FOR VERTICAL TURBINE PUMPS

- A. Slow Closing Air & Vacuum Valve **4-inch and larger** shall have two (2) independent valves bolted together. The Air & Vacuum Valve must have all stainless steel float, guided on both ends with stainless steel shafts. The Air & Vacuum Valve seat must be Buna-N to insure drop tight closure. The Buna-N seat shall be fastened to the cover with stainless steel shoulder screws in a manner to prevent distortion of the seat. The float shall be guided at both ends with stainless steel bushings.
 - 1. The valve cover shall have a male lip designed to fit into the body register for accurate alignment of the float into the Buna-N seat. The valve cover shall have a flanged outlet connection.
 - 2. The Surge Check Valve shall be bolted to the inlet of the Air & Vacuum Valve and consist of a body, seat, disc and compression spring. A surge check unit shall operate on the interphase between the kinetic energy and relative velocity flows of air and water, so that after air passes through, and water rushes into the surge check, the disc starts to close, reducing the rate of flow of water into the air valve by means of throttling orifices in the disc to prevent water hammer in the air valves. The surge check orifices must be adjustable type for regulation in the field to suit operating conditions.
 - 3. The complete Slow Closing Air & Vacuum Valve shall have been flow tested in the field, substantiated with test data to show reduction of surge pressure in the valve.
 - 4. All materials of construction shall be certified in writing to conform to ASTM specifications as follows:
 - a. Air Valve Cover, Body and Surge Check Body: Cast Iron; ASTM A126 GR. B

- b. Float: Stainless Steel; ASTM A240 T304
 - c. Surge Check Seat & Disc: Bronze; ASTM B584 C83600
 - d. Air Valve Seal: Buna-N
 - e. Spring: Stainless Steel; ASTM A276 T316
 - f. Exterior Paint: Phenolic Primer Red Oxide; FDA Approved for Potable Water Contact
- B. Valves 4-inch and larger to be APCO Series 1900 Slow Closing Air & Vacuum Valves with the valves having flanged outlet, outlet, surge check with adjustable orifices and adjustable throttling device, as manufactured by Valve & Primer Corporation, Schaumburg, Illinois, or equal.
- C. Air valves **3-inch and smaller** shall consist of a body, cover, baffle, float, seat and water diffuser. The baffle shall shield float from direct impact of air and water to prevent premature closure of float. The seat shall slip fit into the baffle and lock in place without distortion, but be easily removable. The discharge orifice shall be fitted with a double-acting throttling device to regulate and restrict air venting. When pumps stop the double-acting throttling device shall automatically open allowing full line unrestricted air re-entry to prevent any measure of vacuum to forming the pump column. Air and Vacuum Valves for Vertical Turbine Pumps shall vent large quantities of air out through the orifice when pumps start, close tight when water enters the valve body, permit large quantities of air to re-enter through the orifice when pumps stop to prevent a vacuum from forming in the pump column.
1. The valve body and cover shall be made of cast iron ASTM A126 Grade B. The baffle shall be made of cast iron ASTM A48. The float shall be stainless steel ASTM A240 and be center guided (not free floating) for positive seating and rated for 1000 psi non-shock service. The seat shall be made of Buna-N elastomer. The entire baffle and float assembly shall be shrouded with the water diffuser, to prevent water slamming the float shut. The water diffuser shall be made of brass ASTM B16. All outlets shall be threaded (NPT).
 2. Air and Vacuum Valves for Vertical Turbine Pumps shall be installed with a bronze shutoff ball valve. Bronze ball valves shall be in accordance with Division 15.
- D. 3-inch and smaller Air and Vacuum Valves for Vertical Turbine Pumps shall be Series 140DAT as manufactured by APCO Valve and Primer Corporation, Schaumburg, Illinois, or equal.

2.05 BUTTERFLY VALVES

- A. All butterfly valves shall be manufactured in strict accordance with the latest revision of AWWA C504, class 150B and conform to NSF Standard 61. Butterfly valves shall be of the tight closing, rubber (or synthetic rubber) seat type. Valves shall be bubble tight at the rated pressure in either direction and shall be satisfactory for applications involving throttling service and/or frequent operation and for applications involving valve operation after long periods of inactivity. All valves under this specification, unless indicated otherwise on the Drawings, shall be rated for 150 psi.
- B. The valve disc shall rotate 90° from the full open position to the shut tight position. The valve disc shall be constructed of cast iron ASTM A-126, class B or ASTM A48, class 40. The cast iron disc shall have a continuous (non-segmented) type 316 stainless steel edge. The valve disc shall be connected to the shaft by type 316 stainless steel pins or torque screws.

- C. Valve bodies shall be constructed of cast iron ASTM A-126, class B, and shall have flanged ends in accordance with ANSI B16.1 class 125. Valve bodies shall have rubber seats, be of one-piece construction, and be simultaneously molded and bonded to the valve body. The method used for bonding shall be tested in accordance with ASTM D429 method A or B. No metal-to-metal seating surfaces will be permitted. Valves shall meet the full structural requirements of AWWA C 504. The valve manufacturer shall recommend the type of rubber seat to be used and shall be suitable for its intended service.
- D. The shafts shall be turned, ground and polished. Valve shafts shall be a one piece unit extending completely through the valve disc and body. Valve stems shall be constructed of type 304 stainless steel with their diameters per AWWA C504, Class 150B.
- E. The shaft seals shall be provided to prevent leakage into the bearing chest areas. Shaft seals shall be made of a rubber suitable for the intended service and shall be a packing gland utilizing a self-compensating "V" type packing.
- F. Valves shall have upper and lower (each side of disc) shaft bearings. Shaft bearings shall be of a self-lubricating, non-metallic construction. The valve manufacturer shall recommend the type of bearing to be used and shall be suitable for its intended service.
- G. All surfaces of the valve shall be clean, dry and free from grease before painting. The valve surfaces except for disc, seating and finished portions shall be evenly coated at the factory with a suitable rust inhibitive primer. Hydrostatic and leakage tests shall be conducted in strict accordance with AWWA C 504.
- H. Butterfly valves shall be as manufactured by the DeZurik, VAG USA, M&H, or engineer approved equal.
- I. Butterfly Valve Operators

Valves shall be positioned to provide for the most convenient possible installation position for the valve actuator.

1. Manual Valve Operators

Manually operated valves shall be operated using a cast iron housed handwheel or chain wheel, as required, available in standard weatherproof construction. All units shall have adjustable open and close position stops, with provisions to prevent accidental adjustment changes. The operating shaft shall be supported, axially and radially, at the input end by permanently lubricated bronze thrust and sleeve bearings. All units shall be provided with a pointer assembly for valve position indication.

Manual valves located six (6) feet or more above finished floor level shall be furnished with chain wheel operators. Chains shall extend to within four (4) feet off the floor. All NRS floor stands and geared operators shall be indicating type.

2.06 PLUG DRAIN (MUD) VALVES

- A. Mud valves shall have an ASTM A-126 cast iron frame and yoke of rising stem configuration with a flanged end. Add. #2 (12/10/10) Valves shall have a bronze to bronze seat and bronze stem and stem nut, M & H Style 140, or approved equal. Valve shall be provided with extension stems, floor stands, and stem guides, as required.

2.07 SURGE RELIEF VALVES

A. DESIGN:

1. The main valve shall be pilot-controlled, hydraulically operated, differential piston actuated and full ported.
2. The control valve shall be “self-contained” and incorporate a system of pilot controls, factory assembled to and tested with the main valve. The valve shall be operated by line pressure and utilize the pilot system to open, close or throttle the differential piston main valve to perform the specified function(s).

B. CONSTRUCTION:

1. The main valve body shall be [globe][angle] style, constructed of high-strength cast iron conforming to ASTM A126 Class B with integral flanges, faced and drilled per ANSI B16.1 Class [125][250].
2. The valve shall be “full-ported” so that when fully open the flow area through the valve is no less than the area of its nominal pipe size. Globe body valves shall have an integral bottom pad or feet to permit support directly beneath the body.
3. The main valve shall operate on the differential piston principle such that the area on the underside of the piston is no less than the pipe area and the area on the upper surface is greater than that of the underside. There shall be no diaphragms or springs in the main valve.
4. The valve piston shall be fully guided on its outside diameter and all guiding and sealing surfaces shall be bronze. To minimize the consequences of throttling, throttling shall be by long, stationary vee-ports located downstream of the seat and not by the seat itself. Sawtooth attachments or other add-on devices are not permitted.
5. The valve shall be fully capable of operating in any position without the need of springs and shall not incorporate stems, stem guides or spokes in the waterway. A visual position indicator shall be provided.
6. The main valve shall be serviceable in the line through a single flanged top cover that provides easy access to all internal components.
7. The valve shall be shop coated with NSF-61 certified epoxy on internal surfaces in accordance with American Water Works Association Standard C550 (latest revision).

C. PILOT SYSTEM

1. The valve shall be operated by a system of pilot controls necessary to perform surge relief.
2. The pilot system shall be factory pre-piped, installed on the main valve and tested as an assembly.
3. In addition to the necessary pressure regulating and/or electrically operated pilots, the system shall incorporate a wye-strainer and opening and/or closing speed control valves.
4. Sufficient isolating valves and pipe unions shall be provided to facilitate removal and maintenance of the pilot system without disturbing the main valve.
5. Pilots, controls, piping and fittings shall be corrosion resistant copper, bronze or brass.

D. MANUFACTURER

1. Valve shall be figure 6700 by GA Industries, LLC, Cranberry Township, PA USA or equal

2.08 VALVE OPERATORS

- A. Valve operators shall be as shown on the plans and specified herein Valves shall be positioned to provide for the most convenient position of the actuator possible and oriented

to allow easy visual confirmation of valve position.

- B. Valves located six (6) feet or more from floor level shall be furnished with chain wheel operators or chainlevel operators. Chains shall extend to within four (4) feet off the floor. All NRS floor stands and geared operators shall be indicating type.

2.09 DUAL LEVER AND WEIGHT SWING CHECK VALVE

- A. The valve shall have a heavy duty body shall be constructed of high-strength cast iron conforming to ASTM A126 Class B with integral flanges, faced and drill per ANSI B16.1 Class 125 and be suitable for horizontal or vertical installation. The design working pressure shall be 250 PSI.
- B. The valve body shall be the full waterway type, designed to provide a net flow area no less than the nominal inlet pipe size when swung open no more than 25 degrees. The body shall have a cast bronze seat that shall be accessible to be easily replaced in the field without the use of any special tools. The valve body shall be lined and coated with Tnemec 141 epoxy for corrosion resistance.
- C. The disc shall have a double clevis connected to a ductile iron disc arm. The disc arm assembly shall be suspended from the stainless steel shaft. The disc seat shall be Buna-N rubber (field replaceable) to provide watertight shut-off.
- D. The pivot shaft shall be constructed of stainless steel. The shaft shall extend through the valve body, giving access to both ends of the shaft.
- E. The valve shall be supplied with dual outside levers and adjustable counterweights to initiate valve closure. Valve levers shall be of size and strength to allow for a total of 4 additional counter weights two per side to ensure rapid non-slamming closure.

Item	Material	Specification
Body & Cover	Cast Iron	ASTM A126 Cl. B
Disc	Ductile Iron	ASTM A536 GR. 65-45-12
Disc Arm	Ductile Iron	ASTM A536 GR. 65-45-12
Body Seat Ring	Bronze	ASTM B584 Aluminum Bronze
Disc Seat	Buna-N-Rubber	D2000
Pivot Shaft	Stainless Steel	Type 316
Exterior Paint	Fusion Bond Epoxy	Tenemc 141
Cover Bolts	Steel	

- F. Function: The valve shall swing open smoothly at pump start and close quickly and quietly upon pump shutdown to prevent flow reversal. When closed, the valve shall seat drop tight.
- G. Manufacturer: The valve shall be Crispin Valves, SWC-LW Series or equal.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. All valves shall be installed in accordance with the manufacturer's recommendations.

3.02 MANUFACTURER'S FIELD SERVICE

- A. Manufacturer's authorized representative shall be present at the jobsite for assistance during equipment start-up and to train owner's personnel in the operation, maintenance and troubleshooting of the equipment provided.

3.03 GUARANTY

- A. The Contractor shall guarantee and warrant that the equipment furnished and installed is free from defects of design, material and workmanship, and will operate satisfactorily. In the event the equipment fails to perform as specified, and after the Owner has given due notice, the Contractor or Supplier, at their own expense, shall promptly repair or replace the defective equipment without any additional cost to the Owner.
- B. After successful completion of tests and trials under operating conditions on all equipment, the Contractor shall guarantee all equipment and materials from undue wear and tear from mechanical and electrical defects, and from any failure whatever except those resulting from proven carelessness or deliberate actions of the Owner, for a minimum of one (1) year from Substantial completion as detailed in section 01120 "General Provisions". This one (1) year minimum shall not replace a standard Manufacture's guarantee if it exceeds one (1) year.

END OF SECTION

SECTION 11301

ADSORPTION SYSTEM FOR USE WITH GRANULAR ACTIVATED CARBON (GAC)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Adsorption System Description
- B. Adsorption System Specifications
- C. Installation and Start-up Services

1.02 REFERENCES

- A. ASME Section VIII, Division 1 – American Society of Mechanical Engineers Boiler and Pressure Vessel Code
- B. ASME/ANSI B16.5 – American Society of Mechanical Engineers/American National Standard Institute
- C. U.S. Food and Drug Administration, 21 CFR 175.300 and 177.2420
- D. Steel Structures Painting Council Surface preparation Specifications and National Association of Corrosion Engineers
- E. ASME Section II, American Society of Mechanical Engineers – Materials, Parts A, B & C
- F. American Society of Testing Materials (ASTM)
- G. American Water Works Association (AWWA) – B604, Standard for Granular Activated Carbon
- H. ANSI/NSF Standard Drinking Water System Components – Health Effects

1.03 SYSTEM DESCRIPTION

- A. Calgon Carbon Corporation will furnish the Model 10 Carbon Adsorption System described herein. The complete adsorption system includes the following.
 - a. Carbon adsorbers with internals for carbon retention
 - b. Activated carbon
 - c. Influent, effluent and backwash piping with valves
 - d. Carbon fill and discharge piping with valves
 - e. Vent and pressure relief piping
 - f. Water piping and utility connections
 - g. Accessories as shown below
 - h. Manufacturer's services
- B. The vessels, piping, valves, and carbon function as a system and are the end products of Calgon Carbon Corporation to achieve standardization for appearance, operation, maintenance, spare parts, and manufacturer's services.
- C. There will be one (1) Model 10 carbon adsorption system as delineated below:

System Number	Quantity	System Flow Rate ¹ GPM (EBCT –minutes)	Pressure Drop – Normal Operation PSI	Pressure Drop Backwash Operation PSI
1	One (1)	700 (15)	10 -12	15

¹ The maximum flow rate through the system is set by the Empty Bed Contact Time (EBCT) required to meet the treatment objective of the specific application, the mechanical design and available pressure drop.

1.04 SUPPLIER'S QUALIFICATIONS

- A. Supplier of the adsorption system will have the following minimum qualifications and will submit affidavits attesting to these facts:
 - a. At least 20 years of experience successfully supplying both adsorption systems and GAC to treat water with flow rates greater than 500 gpm average daily flow.
 - b. Must own and operate an equipment fabrication facility with capabilities to both fabricate the equipment per applicable ASME code and finish lining and paint in a single facility.
 - c. Must own and operate at least two (2) GAC production facilities in the United States to guarantee the source of supply of activated carbon.

1.05.1 SUBMITTALS

- A. One submittal package with the following information will be provided for approval by the Owner. Fabrication will begin upon receipt of Owner's approval.
 - a. Adsorber vessel specifications and drawing including design pressure, dimensions, and capacity.
 - b. System flow diagram showing all valves, components, instrumentation and utilities.
 - c. System general arrangement showing dimensions, weights, and elevations including influent, effluent, backwash, and carbon exchange pipe connection locations.
 - d. Pressure drop information across the system.
 - e. Specification of the granular activated carbon to be utilized in the system.
 - f. Material specifications for pipe, fittings and instrumentation.
 - g. Specifications for vessel lining.
 - h. Specifications for vessel painting.
- B. The system Operating & Maintenance Manual will be provided upon completion of the project/shipment of the system.

PART 2 PRODUCTS

2.01 GENERAL

- A. The Contract Documents indicate specific required features of the equipment, but do not purport to cover all details of design and construction.

2.02 CARBON ADSORBER VESSELS

- A. The carbon adsorbers are Model 10 Carbon Adsorption Vessels, as designed by Calgon Carbon Corporation to meet the following specifications.
- B. The carbon adsorber vessels are fabricated of carbon steel, conforming to ASTM A516 grade 70, 10'-0" diameter by 12'-0" straight side height with 2:1 elliptical top and bottom heads. Each vessel will be sized to contain 20,000 pounds of GAC and to accommodate approximately 30% bed expansion within the straight side of the vessel using Filtrasorb 300 GAC². The vessels are designed, constructed and stamped in accordance with ASME Section VIII, Division 1 and registered with the National Board for a design pressure rating of 125 psig at 140°F. Each vessel will be provided with one (1) 20" diameter round manway located on the lower straight side portion of the vessel and one 14" x18" elliptical manway located on the bottom head. The vessels will be free standing utilizing four (4) structural steel support legs.
- C. The structural aspects of the vessel will be sufficient to meet the International Building Code - IBC 2012 requirements of $S_s = 1.65$, Site Class D, $I = 1.25$. Calgon Carbon Corporation can

² The percent bed expansion will vary depending on the apparent density of the GAC selected for a specific application.

submit detailed calculations on request illustrating the seismic characteristics of the proposed vessel.

- D. Each vessel will be designed with an underdrain system that provides uniform distribution of the treated water using a minimum of one (1) septa nozzle for every nominal square foot of vessel cross section, facilitates GAC removal without the need to open the manway to manually hose out the remaining spent GAC, and allows replacement of the septa without the need to remove external piping. The septa will be designed to contain the GAC within the adsorber and be constructed of polypropylene (ppl) material.
- E. All surfaces will be degreased prior to sandblasting. The adsorber internal surface will be blasted to a white metal finish (SSPC-SP5) to provide a 3 to 4 mil anchor pattern. The exterior surfaces of the adsorber will be prepared by blasting per SSPC-SP7.
- F. The interior surfaces of the vessel will be lined. The surfaces above the internal cone with a nominal lining thickness of 35 to 45 mil dry film (dft) and the surfaces under the internal cone bottom a nominal lining thickness of 20 to 25 mil dft. The lining material is a vinyl ester combined with a special curing system and inert flake pigment that meets the requirements of the U. S. Federal Register, Food and Drug Regulations Title 21, Paragraphs 175.300 and 177.2420 and the requirements of ANSI 61 when applied and cured per the manufacturer's requirements.
- G. The exterior surface of the adsorbers will be painted to a dry film thickness of 10 to 14 mil with a high solids epoxy (gray color) paint and a top coated with 2 to 4 mil dft of polyurethane paint.

2.03 PROCESS AND UTILITY PIPING

- A. The process and utility piping on the adsorption system will include influent water to the system, treated water (effluent), backwash water supply and discharge, adsorber vent lines and granular activated carbon fill and discharge piping.
- B. The influent and effluent pipe network allows series (lead/lag) and parallel only operating modes. Lead/lag operation allows either; a) flow from the influent flange, to Adsorber A, to the pipe module, to Adsorber B, to the pipe module then to the effluent flange, or b) flow from the influent flange, to Adsorber B, to the pipe module, to Adsorber A, to the pipe module then to the effluent flange. The change in flow pattern is accomplished with a change of valve positions. The purpose of lead/lag operation allows an adsorber to act as an on-line backup and/or provides for sufficient contact time to allow adsorption of the contaminants of concern.
- C. Process piping (influent, effluent and backwash) will be 8" diameter, constructed of schedule 40 carbon steel, ASTM A53 Grade B materials with 125# ASTM A126 Class B cast iron flanged fittings lined with an ANSI 61 approved epoxy.
- D. Vent piping will be 3" diameter, constructed of schedule 40 carbon steel, ASTM A53 Grade B materials.
- E. Carbon fill and discharge piping will be 4" diameter, constructed of Schedule 40 304 stainless steel, ASTM A-312, Grade TP 304/304L.
- F. Utility piping will be constructed of threaded schedule 80 carbon steel, ASTM 53 Grade B materials.
- G. All piping surfaces will be prepared by blasting per SSPC-SP7.

- H. The exterior surface of the piping will be painted to a dry film thickness of 10 to 14 mil with a high solids epoxy (gray color) paint prior to assembly to ensure minimum oxidation at flanged connections. After assembly piping will be top coated with 2 to 4 mil dft of polyurethane paint.
- I. The piping network will be provided with a structural steel support frame for support of the piping module.

2.04 PROCESS AND UTILITY VALVES

- A. The process and utility piping; excluding GAC fill and discharge piping will be equipped with butterfly valves for flow control. A total of ten (10) 8" diameter butterfly valves will be supplied to accommodate the process and backwash control functions. Two (2) valves are needed for backwash control, two (2) valves are needed for influent isolation, two (2) valves for effluent isolation, two (2) valve for staging of the vessels and two (2) valves for the vent function.
- B. The influent, effluent, and backwash valves will be 8" butterfly valves, having an ANSI 125# wafer cast iron body, a cast iron disc with a polished 316SS edge, SS shaft, and an EPDM or BUNA-N (varies depending on vendor) one-piece bonded seat that provides a flange face gasket surface. Valves are ANSI/NSF Standard 61 approved and are rated at 150 psig working pressure. Valves supplied complete with a mounted manual gear operator with handwheel.
- C. The carbon fill and discharge valves are 4" diameter full port ball valves, 316 stainless steel construction with TFE seats and seals. A total of four (4) valves are supplied, two (2) for carbon fill and two (2) for carbon discharge.
- D. Utility valves for the compressed air supply will be bronze or brass or barstock brass body regular port ball valves.

2.05 INSTRUMENTATION

- A. Instrumentation will be accessible from grade.
- B. Pressure relief will be provided by a 3" rupture disk constructed of impervious graphite and designed to relieve pressure at the design pressure of the vessel and at the maximum flow to the system. The rupture disks will be mounted off the vessel vent line and vent to atmosphere. A total of two (2) will be provided for the system.
- C. Each vessel will be provided with an indicating differential pressure switch, 4" diameter dial, scaled for 20-0-20psi. The switch is rated at 1.0 amps @ 115 volts AC for remote indication. A total of two (2) will be provided for the system³.
- D. The process piping will be equipped with pressure gauges to indicate the pressure entering and exiting each adsorber and to provide information on pressure drop across each adsorber and the system. The pressure gauges will have 4 ½" face diameter with a stainless steel bourdon tube in a phenolic case housing (1 to 160 psig range). A total of three (3) will be provided for the system.
- E. The process piping will be equipped with sample taps to enable sampling of the water entering and exiting each adsorber. A total of three (3) will be provided for the system.

2.06 MISCELLANEOUS

- A. The carbon fill and discharge will be fitted with hose connections, such that carbon transfer to and from the adsorbers can be facilitated using carbon transfer hoses. These connectors will be 4" Quick Disconnect Adaptors constructed of aluminum as manufactured by Dover Corp. as Kamlock connectors or equal.
- B. Two (2) flush connections will be provided on each GAC fill line, one upstream and one downstream of the valve. One (1) flush connection will be provided on each GAC discharge

³ The dP switches should be wired by the customer to a control system to provide an alarm on high differential pressure.

line, downstream of the valve. The connections will be welded into the steel or stainless steel pipe or screwed into solid propylene "spacers" for the lined pipe. Flush connections will consist of a short section of 3/4" pipe, a 3/4" full port ball valve and a 3/4" quick disconnect adaptor to match with water hose fittings.

- C. Each vessel will be provided with one (1) 8" stainless steel effluent strainer basket mounted in the effluent line from the vessel. The basket strainer shall be constructed of 316 stainless 14 gage plate with 1/8" diameter holes drilled on 3/16" centers, covered with 40 mesh 316 stainless steel screen and topped by a 4 mesh 316 stainless steel support screen (0.063" wire diameter). A total of two (2) will be provided for the system.
- D. Each adsorber can be provided with three (3) 2" side sample nozzles for use with in-bed water sample probes. Sample probes consist of a 12" stainless steel pipe with a stainless steel slotted nozzle to collect a water sample from within the carbon bed. The sample probe will be inserted through a 2" flanged nozzle (flanged nozzle to assure adequate coverage of the internal lining); and will be provided with a drop line and shutoff valve external to the adsorber.
- E. The influent and effluent pipe for each vessel will be provided with a molded rubber double arch type expansion joint, with cover and tube constructed of EPDM. Expansion joints are ANSI/NSF 61 certified. Joints allow for axial compression and extension, lateral deflection and minimum 18 degrees angular misalignment. Steel backing flanges, 150 # drilling, to be galvanized or zinc plated. The expansions joints are rated at 190 psi at 170°F. A total of four (4) will be provided for the system.
- F. Gaskets will be 1/8" thick, 85 durometer EPDM with a temperature range of -40°F to 275°F and a pressure rating of 175 psig. Gaskets will meet the requirements of ANSI/NSF Standard 61.

2.07 GRANULAR ACTIVATED CARBON – the specification for the activated carbon is provided separately.

PART 3 EXECUTION

3.01 CALGON CARBON SERVICES

- A. Calgon Carbon will assign a Project Manager (PM) to facilitate the execution of the project. The PM will interface with the customer for both the technical and commercial aspects of the project.
- B. Calgon Carbon will provide an Engineering Submittal Package as outlined in paragraph 1.05A.
- C. Calgon Carbon will supply Operation and Maintenance Instructions upon completion of the project/shipment of the system.

- D. A manufacturer's trained specialists, experienced in the installation of the Calgon Carbon's Adsorption Systems, and with at least five (5) years of field experience will be present at the job site and/or classroom designated by the Owner/Contractor to provide the following services:
- Inspection of the installed equipment
 - Supervision of carbon loading
 - Start-up assistance
 - Troubleshooting
 - Operator training
- E. Calgon Carbon will retain design and fabrication documentation for a minimum period of seven (7) years following completion of the project.

3.02 SERVICES BY OTHERS

- A. The site or designated contractor will be responsible for installation and site services, typically including:
1. Site preparation, foundation design and foundation installation
 2. Receipt, off-loading (and storage) of adsorption system equipment
 3. Installation of adsorption system equipment
 4. Connection of the dP switch to an alarm system
 5. Provision of a means to keep the vessel flooded in all operating modes⁴
 6. Any hydrostatic test of the installed (assembled) system at the site
 7. System connection to existing infrastructure
 8. System disinfection prior to initial fill of carbon
 9. Utilities for bulk loading of GAC (compressed air, clean water source, backwash water disposal)
 10. Operation of the system during carbon fill operation
 11. Mechanical startup of the system

⁴ Customer should review piping and determine if an anti-siphon loop is necessary to maintain flooded conditions in the adsorber.

**SECTION 13300
GRANULAR ACTIVATED CARBON**

1. SCOPE OF WORK

This specification section is for the initial fill of Granular Activated Carbon (GAC) as follows:

- a. Furnish all materials, equipment, and supervision for the transport, supply, and installation of virgin GAC into the filters.

Whenever a brand name is mentioned in the bid request, the naming of the item is intended to establish the type, function, performance and quality required.

2. BID CHECKLIST

- a. All bids must include the following:
 - i. Mandatory Pre-Bid Site Inspection Sign-off sheet (Section 3)
 - ii. Pre-Bid GAC samples (Section 4, submitted under separate cover)
 - iii. Affidavit of Compliance: 15 Year virgin GAC manufacturing experience (Section 5.b)
 - iv. Affidavit of Compliance: Owner of exclusive dedicated potable reactivation facility (Section 5.c)
 - v. Confirmation of comprehensive general liability insurance (Section 5.d)
 - vi. Ten (10) references for GAC to be supplied (Section 6.c) (Current supplier is exempt from this requirement)
 - vii. Source of coal, carbon manufacturing location, description of the reagglomeration/thermal process, and capacity of the manufacturing facility (Section 6.j)
 - viii. Affidavit of Compliance: GAC is 100% virgin, 100% bituminous coal-based reagglomerated material (Section 6.m)
 - ix. Pricing Sheet

3. PRE-BID SITE INSPECTION

- a. Each bidder shall visit the site and shall inform themselves of all existing conditions. Proof of site visitation is mandatory and must be attached to bid documents.
- b. Failure to comply with site inspection requirements shall be considered non-responsive and bid shall be rejected.

4. PRE-BID AND PRE-SHIPMENT SAMPLES

- a. Pre-bid samples:

- i. Samples shall be submitted to the (Engineer/City) prior to the bid date. One (1) sample shall be submitted for each activated carbon type to be supplied. Samples shall be no less than 2 lb. and shall be accompanied with a Certificate of Analysis. The Certificate of Analysis shall clearly state the name of the company which manufactured the GAC, the name and location (city, state/province, country) of the manufacturing facility where the sample GAC was manufactured, and shall include the numeric values for all technical parameters as listed in Section 6.k. of this specification:
 - ii. Failure to comply with the pre-bid sample requirement shall be considered non-responsive and bid shall be rejected.
- b. Pre-shipment samples:
 - i. After award but prior to GAC delivery to site, pre-shipment samples of the actual lots to be supplied shall be submitted to the Engineer/City.
 - ii. The samples shall be accompanied with a Certificate of Analysis and shall meet all requirements as previously set forth for pre-bid samples (Section 4.a.i.).
 - iii. The number of samples to be submitted shall be in accordance with AWWA B604, latest edition. Based on the project size, the manufacturer shall determine the lot size and in turn shall provide the appropriate number of samples to be considered representative per AWWA B604, latest edition.
 - iv. The Engineer/City may elect, at their cost, to independently test any or all submitted pre-shipment samples at a mutually agreed upon independent testing laboratory to confirm conformance with the specifications. These samples shall be in addition to the samples referenced in section 4.b.1. and shall also be submitted in accordance with AWWA B604, latest edition.
 - v. Failure of the pre-shipment samples to meet specifications shall be cause for the Engineer/City to refuse shipment of GAC.
 - vi. Manufacturer shall not be given approval to ship GAC until pre-shipment samples meet specification.

5. BIDDER'S QUALIFICATIONS

- a. Bids shall only be accepted from manufacturers of bituminous coal based reagglomerated activated carbon.
- b. Bidders shall have a minimum of 15 years experience manufacturing virgin granular activated carbon and shall submit proof via a Manufacturer's Certificate and/or an Affidavit of Compliance.
- c. The bidder shall certify that it is the owner and operator of a minimum of two (2) NSF certified reactivation facilities exclusively dedicated to the receiving and production of potable reactivated GAC and shall submit

proof via the reactivation facility's NSF Certificate and/or an Affidavit of Compliance. This requirement shall demonstrate the manufacturer's commitment to sustainable GAC use.

- d. Bidder shall furnish evidence of comprehensive general liability insurance in the minimum amount of \$2,000,000 to provide protection from any and all claims that may arise from the supplier's supply, shipping, and installation supervision of the activated carbon.
- e. Bidder's virgin and reactivation manufacturing processes shall produce NSF/ANSI 61 certified products.
- f. Failure to comply with any of the above qualification requirements shall be considered non-responsive and the bid shall be rejected.

6. PRODUCT SPECIFICATION – VIRGIN GAC

The bidder shall supply 100% virgin GAC for the initial fill of the filters. The virgin GAC shall meet the following specifications:

- a. Virgin GAC shall be one of the following:
 - a. Filtrasorb 300M as manufactured by Calgon Carbon Corporation
 - b. Cabot Norit GAC as manufactured by Cabot Corporation, which meets all requirements of Section 6.b through 6.m of this specification.
 - c. Approved equal
 - i. Approved equal products must be pre-approved by the Engineer prior to the bid. Supplier must submit a sample for testing, including rapid small scale column testing (RSSCT) by a third party testing facility, at least thirty (30) days prior to the bid to confirm product conformance with all specifications in this section. Supplier shall pay for all testing and analytical costs.
- b. The coal shall be mined and the corresponding GAC manufactured in the United States of America.
- c. The GAC product designated by the Bidder as the material to be supplied for this bid shall have five (5) years of history of use in municipal drinking water facilities in North America with a minimum of ten (10) installations. Bidder shall submit references per the attached Reference List form. Current supplier is exempt from this requirement.
- d. The GAC shall be manufactured in a facility certified to conform to the Management System Standard: ISO 9001:2000 or later quality standards and at the specific plant or site holding such certification. A copy of the valid certificate must be submitted with bid, with the understanding by all parties that ANSI/NSF assures the GAC against toxicological hazards only. ISO 9001:2000 or later certification assures the GAC of consistent conformance to stated product quality and standards listed in the specifications.
- e. The GAC shall comply with AWWA B604, latest edition.

- f. The GAC shall conform to the requirements of the NSF/ANSI 61 Drinking Water System Components – Health Effects standard.
- g. The GAC shall comply with the requirements for activated carbon as defined by the Food Chemical Codex (FCC) latest edition published by the U.S. Pharmacopeia.
- h. The GAC must be a 100% reagglomerated bituminous coal based product, sized to a granular form prior to thermal activation. The following materials shall not be accepted if submitted in lieu of the required product, nor may any amount of these materials be blended into a mix with the required reagglomerated, bituminous coal-based product:
 - i. Broken pellets, regardless of base material
 - ii. Direct activated GAC, regardless of base material
 - iii. Lignite-based GAC
 - iv. Peat-based GAC
 - v. Wood-based GAC
 - vi. Coconut-based GAC
 - vii. Sub-bituminous based GAC
 - viii. Anthracite based GAC
- i. The GAC shall be capable of removing color, tastes, odors, and other organic contaminants from water.
- j. Bidder shall indicate the source of coal, carbon manufacturing location, a description of the reagglomeration/thermal process and capacity of the manufacturing facility. The Engineer/City reserves the right to inspect the GAC manufacturing and thermal processing facility.
- k. Product as packaged (confirmed by pre-shipment sample testing) shall meet the following specifications:

<u>Section 6.k. Product Specification:</u>	<u>Value</u>	<u>Test Method</u>
FILTRASORB 300M		
Iodine Number (mg/g), min.	900	ASTM D4607
Moisture, weight %, max.	2	ASTM D2867
Effective size, mm	0.8 – 1.0	ASTM D2862
Uniformity Coefficient, max.	2.1	ASTM D2862
Abrasion No., min.	78	AWWA B604
Trace Capacity Number, (mg/cc), min.	10	TM-79, TM-85 (converted to TCN)
Screen Size (US Sieve), weight %		
* Larger than No. 8, max.	15	ASTM D2862
* Smaller than No. 30, max.	4	ASTM D2862
<u>Typical Property</u>	<u>Value</u>	
Apparent Density, g/cc, min.	0.56	ASTM D2854
Ash	10%	ASTM D2866
Water Extractables	<1%	AWWA B604
Non-Wettable	<1%	AWWA B604

- l. The Certificate of Analysis shall certify that the GAC sample shipped to the site is 100% virgin carbon and in full compliance with the

specifications stated herein. Failure to comply shall be considered non-responsive and the GAC shall be rejected.

- m. The successful bidder must supply a signed Affidavit of Compliance stating that the GAC they are supplying is:
 - a. 100% virgin, with no reactivated carbon content whatsoever, and
 - b. 100% bituminous coal-based reagglomerated material

7. CARBON INSTALLATION PROCEDURES

- a. GAC installation shall be performed by either the GAC manufacturer or the General Contractor under the supervision of the GAC manufacturer.
- b. The GAC installation shall be under the direct supervision of the GAC manufacturer’s employee, having a minimum of 5 years experience in performing carbon exchanges. Supervision by a third party or agent shall not be allowed.
- c. Bidder shall submit resumes of supervisors capable of performing carbon installations, indicating qualifications, years of experience and location.
- d. GAC shall be transported, delivered and placed in a careful manner to exclude all dust, dirt or deleterious material and to prevent physical damage to the particles.
- e. Bidder shall submit a detailed carbon installation procedure for use by the General Contractor.
- f. Failure to provide the information requested will be considered non-responsive and the bid rejected.

8. FILTER/ VESSEL DATA (City/Engineer to insert information)

Filter/ Vessel Design	
Number of Filters	
Filter Dimensions (LxWxD)	
Number of Cells/Filter	
Cell Dimension (LxWxD)	
Backwash and Drain Volume (cu. Ft.)	
Drain to Waste (dia.)	
Total Existing GAC Volume (cu. Ft.)	

SECTION 16020**GENERAL ELECTRICAL REQUIREMENTS****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Provide all labor, material, tools, approvals, excavation, backfill, and other services and equipment necessary to install the electrical system as shown on the Contract Drawings and as specified herein.
- B. Each Contractor bidding on the work included in these Specifications shall view the building site and carefully examine the contract Drawings and Specifications, so that he/she may fully understand what is to be done, and to document existing conditions.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Contractors bidding work under this Contract shall read and understand Division Zero and Division 1 - General Requirements. If any discrepancies are discovered between this Division and the General Requirements, the above-mentioned documents shall overrule this section.
- B. Division 17 – Instrumentation/SCADA

1.03 SUBMITTALS

- A. Provide shop drawings including descriptive literature and/or installation, operation and maintenance instructions. Shop drawings shall be submitted for all equipment proposed to be furnished under this Division.
- B. Electrical submittals shall be submitted after the pumping/process equipment has been approved. Otherwise, the Contractor is responsible for any changes and costs incurred as a result of changes necessary to the electrical equipment.
- C. Shop Drawings shall be clearly marked and or highlighted as to which product, type, option, etc. is being submitted.
- D. Where wiring diagrams are not shown on the Contract Drawings, they are to be provided by the supplier of the equipment served.
- E. O&M manuals are required and shall consist of approved shop drawings, manufacturer O&M instructions, and test reports.

1.04 SYMBOLS AND ABBREVIATIONS

- A. The symbols and abbreviations generally follow standard electrical practice, however, exceptions to this shall be as shown on the Contract Drawings.

1.05 COORDINATION WITH OTHER TRADES

- A. The Contractor shall coordinate the electrical work with that of other trades to ensure proper final location of all electrical equipment and/or connections.

1.06 CODES

A. Comply with the latest revision of the following codes:

1.	Kentucky Building Code	KBC
2.	National Electrical Code	NEC
3.	National Electrical Safety Code	NESC
4.	Underwriters Laboratories, Inc.	UL
5.	National Fire Protection Association	NFPA
6.	National Electrical Manufacturers Association	NEMA
7.	Occupational Safety and Health Administration	OSHA
8.	Insulated Cable Engineers Association	ICEA
9.	Instrument Society of America	ISA
10.	American National Standards Institute, Inc.	ANSI
11.	Anti-Friction Bearing Manufacturers Association, Inc.	AFBMA
12.	Federal Communications Commission	FCC

B. Comply with any other applicable federal, state, or local laws and ordinances.

C. Where the Engineer's design requires a higher standard than the applicable code, the Engineer's design shall be followed.

1.07 INSPECTIONS AND PERMITS

A. Inspection of the electrical system on all construction projects is required. If the local government has appointed a state licensed inspector, the Contractor shall be required to use that person to perform the inspections. If a locally mandated inspector does not exist, the Contractor shall select and hire a state licensed inspector, who has jurisdiction before any work is concealed.

B. At the time of completion of the project, there shall be furnished to the Owner and Engineer a certificate of compliance, from the agency having jurisdiction pursuant to all electrical work performed.

C. All permits necessary for the complete electrical system shall be obtained by the Contractor from the authorities governing such work.

1.08 STORAGE

A. All work, equipment, and materials shall be protected against dirt, water, or other injury during the period of construction. Complete replacement with new equipment is required for any damaged materials.

B. Sensitive electrical equipment such as motor starters, controls, transmitters, etc., delivered to the jobsite, shall be protected against injury or corrosion due to atmospheric conditions or physical damage by other means. Protection is interpreted to mean that equipment shall be stored under roof, in a structure properly heated in cold weather and ventilated in hot weather. Provision shall be made to control the humidity in the storage area at 50 percent relative. The stored equipment shall be inspected periodically, and if it is found that the protection is inadequate, further protective measures shall be employed.

1.09 MATERIALS

A. All materials used shall be new and at least meeting the minimum standards as established by the NEC and/or National Electrical Manufacturers Association. All materials shall be UL listed for the application where a listing exists. All equipment shall meet applicable FCC requirements and

restrictions.

- B. The material and equipment described herein has been specified according to a particular trade name or make to set quality standards. However, each Contractor has the right to substitute other material and equipment in lieu of that specified, other than those specifically mentioned at matching or for standardization, providing such material and equipment meets all of the requirements of those specified and is accepted, in writing by the Engineer.
- C. The reuse of salvaged electrical equipment and/or wiring will not be permitted unless specified herein or indicated on the Contract Drawings.
- D. All salvaged or abandoned electrical materials shall become the property of the Contractor and shall be removed from the job site upon completion of the project, unless otherwise noted on the Contract Drawings or specified herein.

1.10 ERRORS, CORRECTIONS, AND/OR OMISSIONS

- A. Should a piece of utilization equipment be supplied of a different size or horsepower than shown on the Contract Drawings, the Contractor shall be responsible for installing the proper size wiring, conduit, starters, circuit breakers, etc., for proper operation of that unit and the complete electrical system at no extra cost to the Owner.
- B. It is the intent of these Specifications to provide for an electrical system installation complete in every respect, to operate in the manner and under conditions as shown in these Specifications and on the Contract Drawings. The Contractor shall notify the Engineer, in writing, of any omission or error at least 10 days prior to opening of bids. In the event of the Contractors failure to give such notice, he/she may be required to correct work and/or furnish items omitted without additional cost.
- C. Necessary changes or revisions in electrical work to meet any code or power company requirement shall be made by the Contractor without additional charge.

1.11 GUARANTEES AND WARRANTIES

- A. The Contractor shall guarantee all work including equipment, materials, and workmanship. This guarantee shall be against all defects of any of the above and shall run for a period of 1 year from the date of acceptance of the work, concurrent with the one-year guarantee period designated for the general construction contract under which electrical work is performed.
- B. Repair and maintenance for the guarantee period is the responsibility of the Contractor and shall include all repairs and maintenance other than that which is considered as routine. (That is oiling, greasing, etc.) The Engineer shall be the judge of what shall be considered as routine maintenance.

1.12 TESTING

- A. After the wiring system is complete, and at such time as the Engineer may direct, the Contractor shall conduct an operating test for acceptance. The equipment shall be demonstrated to operate in accordance with the requirements of these Specifications and the Contract Drawings. The test shall be performed in the presence of the Engineer or his authorized representative. The Contractor shall furnish all instruments and personnel required for the tests, as well as the necessary electrical power.
- B. Before energizing the system, the Contractor shall check all connections and set all relays and instruments for proper operation. He shall obtain all necessary clearances, approvals, and instructions from the serving utility company prior to placing power on the equipment.

1.13 CLEANUP

- A. Cleanup shall be performed as soon as possible after the electrical installation is complete. All control panels, switches, etc., shall be free from tags, stickers, etc. All painted enclosures shall be free from scratches or splattered paint. The interior of all enclosures shall be clean from dust, wire strippings, etc. Surplus material, rubbish, and equipment shall be removed from the jobsite upon completion of the work.
- B. During construction, cover all Owner equipment subject to damage.

1.14 EXCAVATION AND BACKFILL

- A. Excavation for conduits shall be of sufficient width to allow for proper jointing and alignment of the type conduit used. Conduit shall be bedded on original ground unless indicated otherwise on the Drawings. Where conduit is in solid rock, a 6 inch earth cushion must be provided. Conduit shall be laid in straight lines between pull boxes and/or structures unless otherwise noted on the Contract Drawings. The cost of solid rock excavation shall be included in the lump sum bid.
- B. Backfill shall be hand placed, loose granular earth for a height of 6 inches above the top of the largest conduit. This material shall be free of rocks over ½ inches in diameter. Above this, rocks up to 3" diameter may be included but must be mixed with sufficient earth to fill all voids.

1.15 TRAINING

- A. Provide onsite training on major items of equipment. The training shall be conducted by a qualified representative of the manufacturer, and shall be sufficient in content and length such that the Owner's personnel are fully qualified to operate, maintain, and troubleshoot the equipment. O&M manuals must be approved before training can commence. Only one training class is required for each item of equipment. Coordinate the time/date with the Owner.
- B. An official training report shall be submitted to the Engineer. It shall be signed by Owner's personnel.

1.16 RECORD DRAWINGS

- A. The Contractor shall maintain 1 set of the Contract Drawings on the job in good condition for examination at all times. The Contractor's qualified representative shall enter upon these Drawings, from day to day, the actual "as-built" record of construction and/or alteration progress. Entries and notes shall be made in a neat and legible manner and these Drawings delivered to the Engineer after completion of the construction, for use in preparation of Record Drawings. Underground lines must be dimensioned to permanent structures.

1.17 MAINTAINING CONTINUOUS ELECTRICAL SYSTEM AND SERVICE

- A. Existing water treatment and pumping shall be maintained at all times. In no way shall be installation and/or alteration of the electrical work interfere with or stop the normal operation of the existing facilities, except where prior arrangements have been made. Outages must be coordinated with Owner in advance, may be required to be performed on night shift, and may not be longer than 8 hours in duration. Provide temporary power supply/generator and motor starting equipment as needed to keep the water plant in operation.

1.18 GROUNDING AND BONDING

- A. All metallic conduit, cabinets, equipment, and service shall be grounded in accordance with NEC requirements. All supporting framework in contact with electrical conduit, cable, and/or enclosures, shall be properly grounded.

1.19 CONTRACTOR LICENSING

- A. The Contractor performing the electrical work on this project shall be a licensed electrical contractor in the State of Kentucky.

1.20 ELECTRICAL COMPONENT MOUNTING HEIGHTS

- A. Mounting heights shall be as shown on the Contract Drawings. Operators and control devices shall not be mounted higher than 6'6" above finished floor or grade.

1.21 EQUIPMENT IDENTIFICATION

- A. All starters, feeder units, disconnects, instruments, etc., shall be marked to indicate the motors, circuit, they control or monitor. Marking is to be done with engraved laminated nameplates. Nameplates shall be fastened to equipment with stainless steel screws, one each side. In no way shall the installation of the mounting screws void the NEMA enclosure rating of the equipment in which they are installed. If there are more than one number, the equipment shall be numbered consecutively and labeled as such. Nameplate background color shall be white, with black engraved letters.
- B. Disconnect switches, control panels, frequency drives, etc. shall be labeled with orange OSHA-compliant vinyl self-adhesive signs that list the maximum voltage contained inside the cabinet or panel.

1.22 EQUIPMENT CONFIGURATION/PROGRAMMING

- A. Any equipment furnished by the Contractor is required to be configured or programmed by the Contractor or his subcontractor/vendor. Any necessary studies or engineering necessary to configure or program this equipment shall be provided by the Contractor as needed to place the equipment into successful operation. Engineer or Owner will not be responsible for equipment configuration or programming.
- B. If a manufacturer or manufacturer's representative is required to startup/commission the equipment in these Specifications, then it is required that the Contractor provide the services of the manufacturer to configure/program the equipment. This includes the provision of any necessary studies or engineering necessary for the configuration/programming.

1.23 SPARE PARTS

- A. Provide (3) spare fuses of each unique fuse supplied for the project.
- B. Additional spare parts are required in individual equipment sections.

PART 2 - PRODUCTS**2.01 ACCEPTABLE MANUFACTURERS**

- A. Raceways
 - 1. Rigid Aluminum Conduit - "Allied," "Wheatland," "Indalex," or equal.
 - 2. PVC Conduit - "Allied," "Carlson," "Cantex," or equal.
 - 3. Liquidtight Flexible Metal Conduit - "Allied," "Anaconda," or equal.

- B. Wires and Cables
 - 1. Building Wire (Types THWN and THW) - "General Cable," "Southwire," "AWC" or equal.
 - 2. Instrumentation Cables - "General Cable," "Belden," "Okonite," or equal.
- C. Boxes - "Appleton," "Crouse-Hinds," "Hoffman," "Rittal," or equal.
- D. Wire Connections and Connecting Devices
 - 1. Termination and Splice Connectors - "3M Scotchlok," "Anderson," "T&B," "Burndy," or equal.
 - 2. Connectors, Lugs, etc. - "T&B," "Anderson," "Burndy," or equal.
- E. Grounding Equipment - "Cadweld," "ITT Blackburn," "Copperweld Bimetallics Group," "Cathodic Engineering Equipment Co.," or equal.

2.02 MATERIALS

- A. Conduit and Fittings
 - 1. Aluminum Conduit
 - a. Aluminum conduit shall be extruded from alloy 6063 and shall be the rigid type, non-toxic, corrosion resistant, and non-staining. It shall be manufactured per UL standards as well as listed/labeled by same.
 - b. Fittings, boxes, and accessories used in conjunction with aluminum conduit shall be die cast, copper free aluminum. They shall be resistant to both chemical and galvanic corrosion. All covers shall have neoprene gaskets. Aluminum fittings containing more than 0.4 percent copper are prohibited.
 - c. Fittings are required to be threaded. Threadless connectors or couplings shall not be used.
 - d. Aluminum conduit proposed for concrete slab or underground applications shall be UL listed for the purpose and factory pre-coated. Corrosion-resistant taping is allowed for stubouts out of the ground.
 - 2. Polyvinylchloride (PVC) Conduit - PVC conduit and fittings shall be Schedule 80 heavy wall and UL listed. Expansion joints shall be used as recommended by the manufacturer in published literature. PVC systems shall be 90 degrees Celsius minimum UL rated, have a tensile strength of 7,000 psi @ 73.4 degrees Fahrenheit, flexural strength of 11,000 psi and compressive strength of 8,000 psi.
 - 3. Liquidtight Flexible Conduit - Flexible conduit shall be the metallic liquidtight type UA constructed from flexibly or spirally wound electro-galvanized steel with light gray PVC coating. Connections shall be by means of copper-free aluminum fittings.
 - 4. Locknuts shall be bonding type with sharp edges for digging into the metal wall of an enclosure. Myer-style aluminum hubs shall be used rather than locknuts for all NEMA 4X and exterior penetrations.
 - 5. Bushings shall be metallic insulating type, consisting of an insulating insert molded of locked into the metallic body of the fitting. Bushings made entirely of metal or nonmetallic material

are not permitted.

6. Corrosion-Protection Tape: The corrosion protection tape shall be Scotchrap 51 or equal with 20mil thickness PVC tape and high-tack adhesive. Degreasing and priming of the conduit is required prior to applying the corrosion-protection tape.

B. Conductors (600 Volts and Below)

1. All conductors shall be insulated so that they are rated at 600 volts.
2. Insulated conductors shall be minimum #12 AWG for power or #14 AWG for control and shall be stranded.
3. All conductors brought to the job site shall be new and unused and where no special factory cut lengths are involved, shall be delivered to the job site in standard coils. Contractor shall provide verification to the Engineer of wire condition before wire is installed.
4. All conductors shall be soft drawn, 98% conductivity copper conforming to the latest ASTM Specifications and the requirements of the National Electrical Code.
5. Conductors shall be insulated with type THWN insulation and all conduits shown on the Drawings are sized accordingly.

- C. Instrumentation Cable - Instrumentation cable shall have individually shielded and twisted pairs or triads. Conductors shall be tinned copper, and the cable shall include a separate drain conductor. Voltage rating shall be 600 Volt. Conductor colors shall be black and white. Shielding shall be a combination braid/foil with 100% coverage. Insulation shall be PVC or XLPE. Conductors shall be #18AWG minimum, but no smaller than the size indicated on the Drawings. Insulation shall be polyethylene, rated for underground wet location use, and resistance at 68 degrees Fahrenheit between conductors and between conductors and ground should be at least 500 megohms per 1,000 feet.

D. Boxes and Enclosures

1. Junction boxes for surface mounting shall be stainless NEMA 4X, with at least 5 ½ full threads for each conduit opening, and shall be suitable for surface mounting as required with drilled external, cast mounting extensions. Box covers shall be hinged or cap screw retained as required, of the same material as the box and provided with stainless steel hardware.

E. Wire Connections and Connecting Devices

1. Terminals and splice connectors from #22 to #4 AWG shall be compression type with barrels to provide maximum conductor contact and tensile strength. Performance, construction, and materials shall be in conformance with UL standards for wire connectors and rated for 600 Volts and 105 degrees Celsius.
2. Lugs and splice connectors from #6 AWG to 1000 kcmil shall be compression types with barrels to provide maximum conductor contact and tensile strength. They shall be manufactured from high conductivity copper and entirely tin plated. They shall be crimped with standard industry tooling. The lugs and connectors must have a current carrying capacity equal to the conductors for which they are rated and must also meet all UL requirements. All lugs above #4/0 shall be 2 hole lugs with NEMA spacing. The lugs shall be rated for operation through 35 KV. The lugs shall be of closed end construction to exclude moisture migration into the cable conductor.

F. Motors

1. Ratings and Electrical Characteristics:
 - a. Time: All motors shall be rated for continuous duty.
 - b. Temperature: Maximum ambient temperature of 40 degrees C. and an altitude of 3,300 feet or less, according to service factor and insulation class employed.
 - c. Voltage: All single phase motors shall be rated 115/208/230 volts and all polyphase motor 230/460 volts. All motors shall be capable of normal operation at balanced voltages in the range of + 10 percent from rated winding voltage.
 - d. Frequency: All AC motors shall be rated for 60 hz. operation. All motors shall be capable of normal operation at frequencies 5 percent above or below the normal rating of 60 hz.
 - e. Locked Rotor Current: Locked rotor current shall be in accordance with NEMA standards.
 - f. Efficiency: NEMA premium efficiency is required.
 - g. Speed: Slip shall not exceed 4 percent at full load.
 - h. Service Factor: The service factor shall be 1.15 unless requirements of the driven load necessitate a higher service factor.
 - i. Insulation Class: Insulation shall be NEMA Class F or Class H. All motors shall be inverter-duty and suitable for operation on variable frequency drives.
 - j. Design Level: Motors shall be NEMA design B, except as otherwise noted.
 - k. Enclosure: See equipment specifications.
 - l. Winding Overtemperature Sensors: All motors 15 horsepower and over shall be provided with motor winding thermostats. The devices shall be hermetically sealed, snap-acting thermal switches, actuated by a thermally responsive bi-metallic disk. A minimum of 1 per phase is required, with switches wired into the control circuit of the starter to provide de-energization should overheating threaten.
2. Tests, Nameplates and Shop Drawings:
 - a. Test: Tests shall be required on integral horsepower motors only. A factory certified test report of "electrically duplicate motors previously tested" shall be supplied on all motors under 200 horsepower. The test shall be certified by the factory and shall contain a statement to the effect that complete tests affirm the guaranteed characteristics published in the manufacturer's catalogs or descriptive literature. Tests shall be in accordance with IEEE test procedures.
 - b. Nameplates: Each motor shall have a permanently affixed nameplate of brass, stainless steel, or other metal of durability and corrosion resistance. The data contained on the nameplate shall be in accordance with NEMA standards. Provide a spare nameplate with each motor and mount the nameplate in the starter cabinet. A Brady label with equivalent nameplate information will be accepted in lieu of an actual spare nameplate.

3. Efficiency Requirements

- a. The following motor full load efficiency requirements shall be met as a minimum for totally enclosed 3 phase integral horsepower motors (per NEMA test Methods):

Horsepower	Nominal 3600 RPM (Minimum %)	Nominal 1800 RPM (Minimum %)	Nominal 1200 RPM (Minimum %)
1	75.5	82.5	80.0
1.5	82.5	84.0	85.5
2	84	84.0	86.5
3	85.5	87.5	87.5
5	87.5	87.5	87.5
7.5	88.5	89.5	89.5
10	89.5	89.5	89.5
15	90.2	91.0	90.2
20	90.2	91.0	90.2
25	91.0	92.4	91.7
30	91.0	92.4	91.7
40	91.7	93.0	93.0
50	92.4	93.0	93.0
60	93.0	93.6	93.6
75	93.0	94.1	93.6
100	93.6	94.5	94.1
125	94.5	94.5	94.1
150	94.5	95.0	95.0
200	95.0	95.0	95.0

- b. Motors shall be energy efficient and shall be documented in the shop drawings submittal in sufficient detail to allow the Engineer complete review of what is offered. Motors shall meet NEMA premium efficiency standards.

G. Surge Protection Devices (SPD)

1. MCC SPD:

- a. The SPD shall be suitable for application in category C3 environments as described in ANSI/IEEE C62.41. The SPD shall be of parallel design and provide protection, line to ground, neutral to ground, and line to neutral for wye or delta distribution systems. The SPD shall be compatible with the indicated electrical system, voltage, current and distribution configuration.

- b. SPD shall comply with ANSI/IEEE C62.1, C62.41, and C62.45. The TVSS shall be capable of surviving 1,000 sequential category C3 surges without failure following IEEE test procedures established in C62.45.
- c. The SPD shall have LED indicators that provide indication of suppression failure. It shall also have a surge counter. It shall also have a relay contact that provides remote indication of surge protection failure.
- d. The SPD maximum continuous operating voltage (MCOV) shall be capable of sustaining 110 percent of the nominal RMS voltage continuously without degradation.
- e. SPD shall have surge current capacity of 160,000 amps minimum per mode with a response time no greater than 5 nanoseconds, for any of the individual protection modes, under laboratory conditions with optimum lead lengths.
- f. The SPD UL 1449 surge suppression rating for any suppression mode shall not exceed:

Electrical System Voltage	Phases	UL 1449 Surge Suppression Ratings
120/240	1	330V
120/240	3	330V
120/208	3	330V
208	3	700V
277/480	3	700V
480	3	1500V

H. Safety Switches

1. All safety switches shall be heavy-duty load break type with a quick-make, quick-break, switch mechanism. The switches shall be fused or unfused as indicated on the Drawings. The handle position shall give visual indication of open and closed switch position. Padlocking capability shall be provided for locking the switch in the "OFF" (open) position. Switches are required to be UL98 listed and shall comply with NEMA KS-1 latest version.
2. The switch jaws shall be multi-spring type for positive grip of the switch blades and shall be provided with arc suppressors. The fuse clips shall be spring reinforced, positive pressure type of electrolytic copper. Fuse clips shall be rejection type.
3. The switch shall be provided with cover-blade interlock so that the cover cannot be opened when the switch blades are closed, nor can the switch blades be closed with the cover open. Interlock bypassing devices shall be included for use by authorized personnel. Note: where indicated, safety switches shall have integral electrical interlocks. Contacts shall be open when the switch is in the off position.
4. Enclosures shall be NEMA 1 where used inside the building and NEMA 4X stainless steel where used outside unless otherwise shown on the Drawings.
5. Each safety switch shall be provided with ground lugs as required to accept grounding conductors as shown on the Drawings. The grounding lugs shall be factory installed and shall have direct metal-to-metal contact with the switch enclosure.

I. Lighting

1. Provide all necessary mounting accessories and supports as needed to relocate lighting, along with hole seals or fixture end-caps as needed for individual mounting of each light fixture. All wiring shall be furnished and installed as shown on the Contract Drawings.
- J. Supporting Devices – All strut, channel, conduit clamps/straps, and other supporting devices shall be either stainless steel or aluminum. All hardware such as nuts, bolts, anchors, washers, etc. shall be stainless steel.
- K. Grounding Equipment – Ground rods shall be 10' x 3/4" size, minimum.

PART 3 - EXECUTION

3.01 INSTALLATION/APPLICATION/ERECTION

- A. Cabinets – all wall/surface-mounted cabinets, panels, safety-switches, etc. shall be mounted with a minimum 0.5" air gap between the cabinet and the wall surface.
- B. Conduit
 1. PVC conduit shall be utilized below grade, and aluminum conduit shall be used above grade. The transition from PVC to aluminum shall occur below grade prior to the elbow. The aluminum conduit shall be taped with corrosion-prevention tape from the transition point to 6" above finished grade.
 2. During construction, all new conduits shall be kept dry and free of moisture and debris. Before the wire is pulled in, all conduits shall be swabbed to clear all moisture and debris which may have unavoidably accumulated.
 3. Rigid conduits, where they enter panelboards, cabinets, pull boxes or outlet boxes, shall be secured in place by Myers hubs. The use of locknuts is not acceptable.
 4. All field bends shall be made with standard tools and bending equipment manufactured especially for this purpose. Bends in metallic conduit shall be made while cold and in no case shall the conduits be heated. Conduits shall not be bent through more than 90 degrees.
 5. Size of conduits shall not be less than that indicated on the Contract Drawings. If the conduit size is not indicated, provide the minimum size required by the National Electrical Code.
 6. In general, flexible conduit is prohibited. Where absolutely necessary, it shall be liquidtight, with maximum lengths of 3 feet.
 7. All conduit joints shall be made up tight and no running threads shall be permitted on threaded connections. No kinked, clogged or deformed conduits shall be permitted on the job.
 8. During construction, all installed conduits shall be temporarily capped or corked.
 9. All moisture proofing or other material for thread protection shall be removed from conduit threads prior to installation. No material of insulating quality shall be used on the conduit threads or other places which will reduce the overall conductivity of the conduit system.
 10. Raceways shall be securely and rigidly fastened in place with conduit clamps or approved conduit hangers. Bolts, screws, etc. used in securing the work shall be stainless steel and of ample size for the service. Assembly bolts, nuts, washers, etc., shall be stainless steel. Raceways shall not be welded to steel structures.

11. Conduit runs shall be supported by one-hole straps with clamp backs or by mini-clamps/hangers. An air-gap is required between the conduit and the wall/ceiling. All mounting screws/bolts/hardware shall be stainless steel.
 12. The use of perforated iron straps or wire for supporting conduits will not be permitted.
 13. Conduits shall not be installed horizontally inside concrete slabs. The conduit must be installed underneath of the slab as indicated on the Drawings.
 14. Depth of bury for all conduit shall be as indicated but not less than 30 inches below finished grade.
 15. All conduit shall have an insulated ground wire pulled to all equipment.
 16. All conduits penetrating enclosures shall have duct seal applied to seal the conduit and prevent moisture from entering the enclosure.
- C. Wire and Cable (600 Volts and Below):
1. All wiring shall be installed in conduit. Wire shall not be installed until all work of any nature that may cause injury to the wire is completed.
 2. Mechanical means shall not be used in pulling in wires No. 8 or smaller.
 3. Approved wire pulling lubricant shall be used as required to prevent insulation damage and over stressing of the wire while pulling through conduit. In no case shall conductors be greased or coated with any substance injurious to the conductor insulation or sheath.
 4. All wiring in control equipment, cabinets, etc., shall be neatly wrapped, taped, or laced into groups to provide a neat and orderly appearance in the equipment.
 5. Where the wire is shown larger than that required for the load, it is done so for voltage drop or other purposes and must be installed as shown. Where the wire is stranded, the removal of strands in order to install the wire into a lug provided on any equipment will not be permitted. A larger lug shall be installed which will accept the wire size indicated.
 6. For the wiring of circuits consisting of AWG No. 10 or smaller wire, self-insulated pressure connectors (wirenuts) shall be utilized for all splices or joints.
 7. Each wire shall be labeled at both termination points. Individual conductor or circuit identification shall be carried throughout, with circuit numbers or other identification clearly stamped on terminal strips and shown in wiring diagrams.
 8. In all junction boxes, cabinets, control compartments and terminal boxes where no terminal board is provided, each wire, including all power wires, shall be properly identified by plastic coated, self-adhesive, wire marker.
 9. In cases similar to the above where the terminal boards are provided for the control, indicating, and metering wires, all wires including motor leads and other power wires shall be identified by wire markers as specified above.
 10. Equipment ground wire insulation shall be colored green or green with two or more yellow stripes.

11. In general and unless otherwise shown on the Drawings, no two wires of the same color shall be run in the same conduit except such as control wiring, switch legs, neutral, and ground. Where a conduit run is shown on the drawings to have two or more wires connected to the same phase and, therefore, are the same color, pressure sensitive, plastic marked wire marker identification tape shall be used wherever the wire is accessible (junction boxes, panels, device boxes, etc). The numbers shall in each case, correspond to the circuit number and panelboard from which the circuit emanates. Control wiring inside any compartment which may be energized from a source outside the compartment shall have insulation. Where yellow insulated wires are used inside any cabinet, compartment, etc., a machine engraved, laminated plastic identification marker shall be installed on the outside of the compartment.
12. Insulation on ungrounded conductors larger than AWG #10 and on grounded (neutral) and grounding (equipment ground) conductors larger than AWG #6 may be black with color coding accomplished with the use of colored plastic tape. Tape shall be installed on the conductors wherever they are visible and shall be wrapped at least three (3) turns around the conductor.
13. All wiring on this project, except control wiring, shall reflect the phase relationship as follows:

480 volt system: brown, orange and yellow for ungrounded conductors, gray with brown tracer for neutral conductors.

208Y/120 volt system: black, red and blue for ungrounded conductors, white for neutral conductors.

120/240 volt, 3-phase
4-wire,delta system: black, red for ungrounded conductors, orange for ungrounded conductor connected to "high leg", white for neutral.

D. Grounding

1. Ground rods shall be driven vertically into the earth to at least one foot below finished grade. Where a counterpoise or grounding grid is indicated and where rock is encountered at a depth of less than four (4) feet, rods shall be buried in a trench at not less than two feet below finished grade, and at equal angles from any two adjacent sides on the outside of the counterpoise or grid. In these cases, at the Contractor's option, equal lengths of bare conductor of the same size as the counterpoise or grid may be used in place of ground rods.
2. Conductors connecting the main ground bars in switchgear to the earth shall be continuous without joints or splices. Connections to the grounding system at the switchgear shall be made with pressure connectors such as defined in Article 100, "Connector, Pressure (Solderless)", of the National Electrical Code.
3. Connections to ground rods and all other ground connections below grade shall have a minimum mechanical contact surface area between the conductor and the ground rod of not less than three (3) square inches.
4. All connections made below finished grade shall be exothermic.
5. Installation of grounding conductors shall be such that they are not exposed to physical damage. All connections shall be firm and tight. Conductors and connectors shall be so arranged and provided so that there is no strain upon the connection. Buried equipment grounding conductors shall be buried at least 24 inches below finished grade and shall not be buried below concrete pads, paving, etc. except where running a tap to the grid or where shown on the contract drawings. Where buried below concrete or paving, grounding

conductors shall be in rigid conduit unless shown on the drawings as a part of a grid.

6. Resistance measurements shall be made between the main grounding bar in the switchgear and a good earth ground. If this resistance is not equal to or less than 5 Ohms, an additional grounding electrode system in the form of ground rods installed and connected together in a 10 feet by 10 feet grid shall be added. The rods shall be connected together and this grid connected to the system with AWG #3/0 bare tinned copper. The number of rods shall be as required to register the resistance value mentioned above. Measurements shall be made in normally dry conditions and, in no case, less than 48 hours after rainfall. Submit a ground test report to the Engineer using the "Fall of Potential" method and appropriate ground testing instrumentation.
7. Where a bare conductor is the only conductor installed in conduit or other raceway, and this conductor is serving as a grounding conductor, it shall be bonded to the raceway that contains it at each end of the raceway. The bond shall be made using a grounding type bushing and bonding jumper. The size of the jumper shall be the maximum size that the grounding bushing lug will accept and it shall be connected to the bushing with the lug and to the grounding conductor with a split bolt connector.
8. All metal electrical equipment cabinets (wireways, panels, switchgear, device boxes, junction and pull boxes, motor control panels, etc.) shall be securely bonded to a grounding conductor running through any conduit terminating at the cabinet or enclosure by use of a grounding lug bushing and jumper wire to the enclosure wall. Switchgear, panelboards and motor control equipment shall be provided with an equipment ground bus (including lugs or screw terminals) securely bonded to the enclosure. Junction boxes and other enclosures shall utilize an equipment ground bus or lug as required to securely bond the equipment grounding conductor to the enclosure. The grounding conductor shall be connected with pressure connectors at the main switchgear to the main grounding system. Where screw terminals or set screw lugs are used, sufficient lugs shall be provided such that not more than one conductor is installed into each lug or terminal.
9. No raceway (including rigid steel conduit, EMT, etc.) shall serve as a grounding conductor.
10. All main feeder circuits and all branch circuits shall contain a grounding conductor sized according to Table 250-95, Article 250 of the National Electrical Code or as shown on the Drawings. This grounding conductor shall be connected to the main grounding conductor in the switchgear from which the circuit emanates. Individual components of the system served by the main feeder circuit shall have their enclosures connected to the main feeder grounding conductor with pressure connectors.
11. The grounding conductor serving motor circuitry shall be connected inside the entrance compartment to the motor frame with a bolted solderless pressure connector. Bolts, nuts, washers and other assorted hardware shall be bronze, cadmium plated steel, or other corrosion resistant material. The motor ground connection shall be to the motor frame and independent of the mounting bolts or sliding base.
12. Grounded and Grounding Conductor: Connections to the grounding conductor and/or the neutral (grounded) conductor shall be made in such a manner that removal of any device or equipment will not interrupt the continuity of these conductors to any device downstream from the device removed.

E. Lighting

1. Clean lighting fixtures of dirt and debris upon completion of installation.

F. Light Poles:

1. A concrete foundation shall be provided for each pole as detailed on the Contract Drawing. The poles shall be mounted utilizing anchor bolts set in the concrete. The anchor bolts shall have galvanized or plated threads and shall be furnished with the pole by the manufacturer. Bases shall have 1" chamfer all around and rubbed and buffed smooth to below grade.
2. When anchor bolts are positioned prior to pouring concrete, spacing and projection must be verified with pole manufacturer's recommendations. A plastic or plywood template should be fabricated from the manufacturer's instructions to use when setting the anchor bolts. Anchor bolts that are not installed plumb and in the correct locations shall be removed and replaced. The Contractor shall not be allowed to bend the anchor bolts back to plumb after concrete is set.
3. Leveling nuts shall be utilized for the mounting of poles to foundations. A nut should be screwed down on each bolt until it meets the concrete, then the nuts must be adjusted until they are level.
4. The pole shall be carefully lowered onto the anchor bolts and allowed to rest on the leveling nuts. Flat washers followed by lockwashers should be placed on the anchor bolts and the top nut installed. Minor adjustments on the leveling nuts may be necessary to plumb the pole before the top nuts are tightened down. Special care shall be taken to tighten the top nuts to the torque level recommended by the pole manufacturer. All nuts and washers shall be galvanized or plated.
5. Concrete grout of the nonshrink type must be installed between the base of the pole and the concrete foundation. The grout should be puddled around the edge of the pole base and firmly packed in the space between the pole and foundation. A short piece of small diameter pipe must be installed to make a drain hole through the grout to the pole interior.
6. Aluminum poles must have the bottom of the base painted with Koppers bitumastic No. 50 or equal substitute product before grouting so that the aluminum does not come in contact with the concrete.
7. Poles shall not be modified or drilled on the job site.
8. Under no circumstances should a ground wire be wrapped around an anchor bolt underneath an anchor bolt nut.
9. Manufacturer's installation instructions should be followed as well as those instructions contained herein. Should a discrepancy exist, promptly contact the Engineer for clarification.
11. Anchor bolt covers shall be furnished and installed.

END OF SECTION

SECTION 16440**MOTOR CONTROL CENTER****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. Contractor shall furnish and install motor control center equipment as specified herein and as shown on the Drawings.

1.02 RELATED WORK

- A. Section 16020 – General Electrical Requirements

1.03 SUBMITTALS

- A. Motor control equipment shall be new and the equipment of one manufacturer. Each component is specified by a particular trade name; however, this does not relieve the Contractor of the responsibility of submitting descriptive literature and Shop Drawings for review of all components. Motor control shall be the same brand as power distribution equipment on projects with both.
- B. Shop drawings, including layout drawings, complete schematic and composite wiring diagrams, control circuit wiring diagrams and descriptive literature shall be submitted to the Engineer for review. Service manuals shall be submitted on all equipment and shall be bound in 3-ring looseleaf binders. The manuals shall also include information on accessories such as timers, etc., built in the control center.
- C. Shop Drawings shall be clearly marked and or highlighted as to which product, type, option, etc. is being submitted. Product literature with one or more styles / configurations for a single product shall have a written description of use for each of the styles / configurations represented on the literature.

PART 2 - PRODUCTS**2.01 ACCEPTABLE MANUFACTURERS**

- A. Control Equipment
 - 1. "G.E./ABB", "Square D", "Eaton", "Allen-Bradley" or equal.

2.02 MOTOR CONTROL CENTERS (MCC)

- A. General
 - 1. Motor Control Center(s) shall consist of one or more enclosed vertical sections joined together to form a rigid, free standing assembly. The construction of the Motor Control Center shall meet the requirements set forth by Underwriters' Laboratories publication UL-845, NEMA publication number ICS-2-322, the National Electrical Code, and color coded.
 - 2. The structure shall be UL listed and labeled as service equipment if applicable. All sections shall bear UL labels.

3. Enclosures shall be NEMA 1 and suitable for connection to an available fault current of 65,000 RMS symmetrical amperes.

B. Construction

1. Vertical Sections

- a. Vertical sections shall support the horizontal and vertical buses, combination starter units, covers and doors, and shall be designed to allow for easy rearrangement of units by the purchaser. Vertical sections shall have structural supporting members formed of a minimum of 13 gauge hot-rolled steel. All finished surfaces shall be blemish-free. Where needed, reinforcement structural parts shall be of 10-gauge steel to provide a strong rigid assembly. Each section shall be 90 inches high and shall have 7 gauge steel, 3 inch high removable lifting angle and two 1 ½ inch high base channels. Complete control center line-ups shall be divided into shipping splits no wider than approximately 60 inches. The lifting angle shall be provided on the top of each shipping split and shall extend the entire width of the shipping split. Lifting angles shall be designed to support the entire weight of the MCC section. Base channels shall be provided with holes to permit bolting the Motor Control Center(s) to the floor. The entire assembly shall be constructed and packaged to withstand all stresses induced in transit and during installation.
- b. Motor Control Centers shall be designed so that matching vertical sections of the same current rating and manufacture can be added later at either end of the line-up without use of transition sections and without difficulty or undue expense. Removable end closing plates shall be provided to close off openings on the end of the Motor Control Center line-up. A removable top plate shall be provided on each vertical section and shall be of one piece construction for added convenience in cutting conduit holes. The design shall allow use of the standard conduit entrance area without significant sag or deformation of the top plate.
- c. Vertical sections shall be designed to accommodate plug-on units in front-of-board or back-to-back construction as shown on Contract Drawings. Vertical sections housing plug-on units shall be 20 inches wide and shall be 20 inches deep. Wider sections will be permitted only for bolted connection type units not fitting the 20 inch wide sections. Unit mounting area shall be divided into ½ space factor divisions, each approximately 6 inches. NEMA Size 1 and 2 combination starter units shall use only 1 space factor, or 12 inches, of unit mounting space. Vertical sections shall allow for 6 space factors of unit mounting space. Removable blank plates shall cover all unused unit mounting spaces. Blank plates shall be flanged on all 4 sides and shall be mounted with captive screws. Blank space shall be equipped for future use.
- d. Vertical sections shall be provided with both horizontal and vertical wireways. Sufficient clearances shall be provided in the horizontal wireway so that no restriction is encountered in running wires from the vertical to horizontal wireway. Wireways shall be in accordance with the wireway sections contained in this document.

2. Horizontal Wireways

- a. Horizontal wireways shall be provided in the top and bottom of each vertical section as indicated in the Contract Drawings and shall be arranged to provide full length continuity throughout the entire assembly. The top horizontal wireway shall have a cross sectional area of not less than 20 square inches with openings between sections of not less than 11 ½ square inches. The bottom horizontal wireway shall extend

through the length and depth of the vertical sections and shall also be provided with openings of not less than 11 ½ square inches to allow for full length continuity throughout the entire assembly. The bottom horizontal wireway height shall be not less than 6 inches. Covers for all wireways shall be equipped with captive type screws to prevent loss of hardware during installation. All wireways shall be isolated from the bus bars.

3. Vertical Wireways

- a. A vertical wire trough shall be located on the right -hand side of each vertical section and shall extend from the top horizontal wireway to the bottom of the available unit mounting space. Each vertical wire trough shall have a cross sectional area of not less than 19 square inches and shall be isolated from the bus bars to guard against accidental contact. A separately hinged door having captive type screws shall cover the vertical wire trough to provide easy access to control wiring without disturbing control units.
- b. Reusable wire ties shall be furnished in each vertical wire trough for the purpose of grouping and securely holding wires in place for a neat and orderly installation.

4. Busbars

- a. A continuous main three-conductor horizontal bus shall be provided over the full length of the control center. If a 4th neutral wire is called for on the Drawings, then a fully rated horizontal neutral bus (1200 ampere maximum) shall also be supplied over the full length of the Motor Control Center. When necessary, the bus shall be split to allow for ease in moving and handling. Splice bars will be supplied to join the bus wherever a split has been made. All splice connections shall be made with at least two bolts and shall employ the use of Belleville washers in the connection. Horizontal bus bars shall be mounted edgewise and supported by insulated bus supports.
- b. For distribution of power from the main horizontal bus to each unit compartment, a three-phase vertical bus shall be provided. The vertical bus shall be firmly bolted to the horizontal bus for permanent contact.
- c. The main horizontal and vertical buses shall be made of copper and the entire length shall be electrolytically tin plated to provide maximum protection to the bus bars from normal or adverse atmospheric conditions.
- d. Bus supports shall be formed of high strength glass reinforced alkyd material. Bus supports shall have generous surface clearances in the vertical plane to shed dust and maintain dielectric integrity. Bus supports and insulators shall be red to indicate proximity of energized bus parts.
- e. Horizontal and vertical buses shall have continuous current ratings adequate to handle all loads as shown on the one line diagram in the Contract Drawings. Continuous current ratings shall be in accordance with temperature rise specifications established by UL, ANSI, and NEMA standards.
- f. A copper ground lug shall be provided in each incoming line vertical section capable of accepting a #8 to 250 MCM cable. A horizontal copper grounding bus shall be provided in each section of the Motor Control Center. Horizontal grounding bus shall run continuously throughout the control center except where splits are necessary for ease of shipment and handling in which case splice bars shall be provided. Grounding

bus shall be tin plated copper and have a cross sectional area equal to 28% of the main horizontal bus cross sectional area. Horizontal ground bus shall be located at the bottom of the Motor Control Center.

5. Bus Barriers

- a. Insulated horizontal and vertical bus barriers shall be furnished to reduce the hazard of accidental contact with the bus. Vertical bus barriers shall have interlocking front and back pieces to give added protection on all sides and shall segregate the phases to reduce the possibility of accidental "flash over". Small, separate openings in the vertical bus barriers shall permit unit plug-on contacts to pass through and engage the vertical bus bars. Bottom bus covers shall be provided below the vertical bus to protect the ends of the bus from accidental contact with fish tapes or other items entering from the bottom of the enclosure. Unused plug-on openings in the bus shall have plastic snap-in closing plates for added safety.

6. Units

- a. All auxiliary equipment, except that which is specified for mounting on the door, shall be mounted within the compartment. All units shall be provided with unit doors, unit support pans, unit saddles and unit disconnect operators as outlined in this Specification. Each unit compartment shall be enclosed and isolated from adjacent units, buses and wireways except for openings for conductor entrance into units. Units shall be designed and constructed so that any fault will be localized within the compartment

7. Unit Doors

- a. Each unit shall have a door securely mounted with rugged concealed-type hinges which allow the door to swing open a minimum of 112° for unit maintenance and withdrawal. Doors shall be fastened to the structure so that they remain in place when a unit is withdrawn and may be closed to cover the unit space when the unit has been temporarily removed. Doors shall be held closed with quarter-turn fasteners. Each unit door shall be interlocked with its disconnect mechanism to prevent the door from opening when the unit is energized. A defeater mechanism shall be provided for defeating this interlock by authorized personnel.

8. Unit Support Pan

- a. Each plug-on unit shall be supported and guided by a tilt and lift-out removable pan so that unit rearrangement can be easily accomplished. For easy unit installation and rearrangement, transfer of this unit support pan from one location to another shall be accomplished with ease after the control unit and door have been removed.

9. Unit Saddles

- a. Each plug-on unit shall have a saddle of 14 gauge hot rolled steel designed and constructed to physically isolate the unit from the bus compartment and adjacent units. Saddles shall be equipped with captive, self-aligning mounting screws which shall hold the unit securely in place during shipment. Flanged edges shall be provided on each saddle to facilitate unit removal, or alternately provide a mechanical cam lever to facilitate removal.

10. Disconnect Operators

- a. An external operator handle shall be supplied for each switch or breaker. This mechanism shall be engaged with the switch or breaker at all times regardless of unit door position to prevent false circuit indication. The operator handle shall be color coded to display red in the "ON" position and black in the "OFF" position. The operator handle shall have a conventional up-down motion and shall be designed so that the down position will indicate the unit is "OFF". For added safety it shall be possible to lock this handle in the "OFF" position with up to three padlocks. The operator handle shall be interlocked with the unit door to prevent switching the unit to "ON" while the unit door is open. A defeater mechanism shall be provided for the purpose of defeating this interlock by a deliberate act of an electrician should he desire to observe the operation of the operator handle assembly or the unit components. Operators shall not be higher than 6'-6" above finished floor elevation, as installed.

11. Wiring

- a. The motor control center wiring shall be NEMA Class II, Type B. All wiring shall be labeled.

12. Finish

- a. The finish shall be manufacturer's standard gray enamel applied over a rust inhibiting phosphate primer.

13. Identification

- a. A control center identification nameplate describing section catalog numbers and characteristics shall be fastened on the vertical wire trough door of every section. Each control center unit shall have its own identification nameplate fastened to the unit saddle. These nameplates shall have suitable references to factory records for efficient communication with supplier. Each control center unit shall also have an engraved Bakelite nameplate fastened to the outside of each unit door inscribed as written on the Contract Drawings for ease in identification and for making changes when regrouping units. An overall structure nameplate is also required.

C. Overcurrent Protective Devices

1. Circuit Breakers

- a. Molded case circuit breakers with fixed thermal-magnetic trip units shall be furnished for 400A frame and smaller branch feeder units. All circuit breakers shall have a push-to-trip test feature for testing and exercising the circuit breaker trip mechanism.

PART 3 - EXECUTION

3.01 INSTALLATION/APPLICATION/ERECTION

- A. Install per manufacturer's instructions.

END OF SECTION

**SECTION 16483
ADJUSTABLE FREQUENCY DRIVES**

PART 1 GENERAL

1.01 SCOPE

- A. Provide (3) high service pump adjustable frequency drives (AFD) as specified herein and as shown on the Contract Drawings.

1.02 RELATED SECTIONS

- A. Section 16020 General Electrical Requirements

1.03 REFERENCES

- A. The adjustable frequency drives and all components shall be designed, manufactured and tested in accordance with the latest applicable standards including the following:
 - 1. Underwriters Laboratories (UL508C: Power Conversion Equipment)
 - 2. IEC 61800-3

1.04 SUBMITTALS

- A. The following information shall be submitted to the Engineer for approval:
 - 1. Dimensioned outline drawing
 - 2. Schematic diagram
 - 3. Power and control connection diagram(s)
 - 4. Descriptive bulletins
 - 5. Product sheets
- B. O&M manuals are required in accordance with Section 16020 requirements. As-built wiring diagrams and as-built parameter settings list are required.

1.05 QUALIFICATIONS

- A. The supplier of the assembly shall be the manufacturer of the electromechanical power components used within the assembly, such as bypass contactors when specified.
- B. For the equipment specified herein, the manufacturer shall be ISO 9001 certified.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Equipment shall be handled and stored in accordance with manufacturer's instructions. A copy of these instructions shall be included with the equipment at time of shipment.

PART 2 PRODUCTS

2.01 MANUFACTURERS

20016/1.11.2023

ADJUSTABLE FREQUENCY DRIVES

- A. Rockwell
- B. Eaton
- C. Schneider/Square D
- D. ABB
- E. Danfoss
- F. Or equal.

2.02 ADJUSTABLE FREQUENCY DRIVES (AFD)

- A. Adjustable frequency drives shall have the following features:
 1. The AFD shall be rated for the voltage indicated on the Drawings. The AFD shall provide microprocessor-based control for three-phase induction motors. The AFD may be variable torque or constant torque rated. However, it is required to meet the ambient temperature conditions specified below.
 2. The AFD shall be of the Pulse Width Modulated (PWM) design converting the utility input voltage and frequency to a variable voltage and frequency output via a two-step operation. Adjustable Current Source AFDs are not acceptable. Insulated Gate Bipolar Transistors (IGBT's) shall be used in the inverter section. Bipolar Junction Transistors, GTO's or SCR's are not acceptable.
 3. The AFD shall have efficiency at full load and speed of at least 97%.
 4. The AFD shall maintain the line side displacement power factor at no less than 0.97, regardless of speed and load.
 5. The AFD shall have a one (1) minute overload current rating of 110% minimum.
 6. The AFD shall be rated for at least 35kA RMS symmetrical.
 7. The AFD shall be capable of operating any NEMA design B squirrel cage induction motor, regardless of manufacturer, with a horsepower and current rating within the capacity of the AFD.
 8. The AFD shall have an integral EMI/RFI filter.
 9. All AFDs are required to have either a line reactor or a DC link choke. The line reactor shall be a 5% nominal impedance AC three-phase line reactor. The line reactors shall be installed inside the drive enclosure. If a DC link choke is included in lieu of a line reactor, it shall be nominal 5% impedance with dual coils around the positive and negative DC bussing.
 10. The AFD shall be able to start into a spinning motor. The AFD shall be able to determine the motor speed in any direction and resume operation without tripping. If the motor is spinning in the reverse direction, the AFD shall start into the motor in the reverse direction, bring the motor to a controlled stop, and then accelerate the motor to the preset speed.
 11. Standard operating conditions shall be:
 - a. Incoming Power: As indicated voltage (+10% to -15%) and 50/60 Hz (+/-5 Hz)
 - b. Frequency stability of +/-0.05% for 24 hours with voltage regulation of +/-1% of maximum rated output voltage.
 - c. Speed regulation of +/- 0.5% of base speed.
 - d. Load inertia dependant carryover (ride-through) during utility loss.
 - e. Insensitive to input line rotation.
 - f. Humidity: 0 to 95% (non-condensing and non-corrosive).
 - g. Altitude: 0 to 3,300 feet (1000 meters) above sea level.

- h. Ambient Temperature: The AFD shall be rated for operation down to 0°C (32°F). The AFD itself shall be rated for a minimum of 50°C (122°F) operation temperature, and the overall AFD packaged enclosure shall be rated for 40°C (104°F) operation temperature.

12. Control Functions

- a. AFD programmable parameters shall be adjustable from a digital operator keypad. The AFD shall have a alphanumeric programmable display with status indicators. Keypads must use plain English words for parameters, status, and diagnostic messages. Keypads that are difficult to read or understand are not acceptable, and particularly those that use alphanumeric code and tables. Keypads shall have backlighting.
- b. The keypad shall include a Local/Remote pushbutton selection. Both start/ stop source and speed reference shall be independently programmable for Keypad, Remote I/O, or Field Bus.
- c. The frequency drive shall include an Ethernet port for programming, monitoring, and control. Ethernet/IP is the required protocol.
- d. The operator shall be able to scroll through the keypad menu to choose between the following:
 1. Monitor
 2. Operate
 3. Parameter setup
 4. Actual parameter values
 5. Active faults
 6. Fault history
 7. Information to indicate the standard software and optional features software loaded.
- e. The following setups and adjustments, at a minimum, are to be available:
 1. Start command from keypad, remote or communications port
 2. Speed command from keypad, remote or communications port
 3. Motor direction selection
 4. Maximum and minimum speed limits
 5. Acceleration and deceleration times, two settable ranges
 6. Critical (skip) frequency avoidance
 7. Torque limit
 8. Multiple attempt restart function
 9. Multiple preset speeds adjustment
 10. Catch a spinning motor start or normal start selection
 11. Programmable analog output
 12. DC brake current magnitude and time
 13. PID process controller

13. The AFD shall have the following system interfaces:

- a. Inputs – A minimum of four (4) programmable digital inputs, two (2) analog inputs and Ethernet communications interface shall be provided with the following available as a minimum:
 1. Remote manual/auto
 2. Remote start/stop
 3. Remote forward/reverse
 4. Remote preset speeds
 5. Remote external trip
 6. Remote fault reset

7. Process control speed reference interface, 4-20mA DC
 8. Potentiometer and 1-10VDC speed reference interface
 9. Ethernet programming and operation interface port
- B. Outputs – A minimum of three (3) discrete programmable digital outputs and two (2) programmable analog outputs shall be provided, with the following available at minimum.
1. Programmable relay outputs with one (1) set of Form C contacts for each, selectable with the following available at minimum:
 - a. Fault
 - b. Run
 - c. Ready
 - d. Reversed
 - e. Jogging
 - f. At speed
 - g. Torque Limit Supervision
 - h. Motor rotation direction opposite of commanded
 - i. Over-temperature
 2. Programmable analog output signal, selectable with the following available at minimum:
 - a. Motor current
 - b. Output frequency
 - c. Frequency reference
 - d. Motor speed
 - e. Motor torque
 - f. Motor power
 - g. Motor voltage
 - h. DC-bus voltage
 - i. AI1 (Analog Input 1)
 - j. AI2 (Analog Input 2)
 - k. PT100 temperature
 3. Monitoring and Displays
 - a. The AFD display shall be a LCD type capable of displaying the following thirteen (13) status indicators:
 1. Run
 2. Forward
 3. Reverse
 4. Stop
 5. Ready
 6. Alarm
 7. Fault
 8. Input/Output (I/O) terminal
 9. Keypad
 10. Bus/Communication
 11. Local (LED)
 12. Remote (LED)

13. Fault (LED)
4. The AFD keypad shall be capable of displaying the following monitoring functions at a minimum:
 - a. Output frequency
 - b. Frequency reference
 - c. Motor speed
 - d. Motor current
 - e. Motor torque
 - f. Motor power
 - g. Motor voltage
 - h. DC-bus voltage
 - i. Unit temperature
 - j. Calculated motor temperature
 - k. Voltage level of analog input
 - l. Current level of analog input
 - m. Digital inputs status
 - n. Digital and relay outputs status
 - o. Analog Input
5. Protective Functions
 - a. The AFD shall include the following protective features at minimum:
 1. Over-current
 2. Over-voltage
 3. Inverter fault
 4. Under-voltage
 5. Input phase loss
 6. Output phase loss
 7. Under-temperature
 8. Over-temperature
 9. Motor stalled
 10. Motor over-temperature
 11. Motor under-load
 12. Logic voltage failure
 13. Microprocessor failure
 - b. The AFD shall provide ground fault protection during power-up, starting, and running. AFD with no ground fault protection during running are not acceptable.
6. Diagnostic Features
 - a. Fault History
 1. Record and log faults
 2. Indicate the most recent first, and store up to 30 faults
7. Enclosure
 - a. The AFD enclosure shall be NEMA type 1 minimum and shall be arranged such that dripping water will not enter the cabinet. The AFD shall have complete front accessibility with easily removable assemblies. The human interface module (HIM) and HOA/pilot controls shall be

panel-mounted such that operator can access the HIM & controls without opening the cabinet door.

8. The AFD manufacturer shall maintain, as part of a national network, engineering service facilities within 150 miles of project to provide start-up service, emergency service calls, repair work, service contracts, maintenance and training of customer personnel.

2.03 SPARE PARTS

- A. The main logic board, keypad, power supply board, and I/O board shall be supplied as spares, one for each different part number supplied.
- B. Alternatively, a full spare AFD may be supplied in lieu of the individual components specified above – one for each different part number supplied.
- C. Five (5) fuses of every type of fuse supplied.

PART 3 EXECUTION

3.01 FACTORY TESTING

- A. The following standard factory tests shall be performed on the equipment provided under this section. All tests shall be in accordance with the latest version of UL and NEMA standards.
 1. All printed circuit boards shall be functionally tested via automatic test equipment prior to unit installation.
 2. Each AFD shall be put through a motor load test before inspection and shipping.
- B. The manufacturer shall provide three (3) certified copies of factory test reports.

3.02 INSTALLATION

- A. Install per manufacturer's instructions.
- B. Configure parameters according to actual driven motor nameplate data.
- C. Set the minimum and maximum speeds as directed by the motor manufacturer.

3.03 FIELD QUALITY CONTROL

- A. Provide the services of a qualified manufacturer's employed Field Service Engineer to assist the Contractor in installation and start-up of the equipment specified under this section. Field Service personnel shall be factory trained with periodic updates and have experience with the same model of AFD on the job site. Sales representatives will not be acceptable to perform this work. The manufacturer's service representative shall provide technical direction and assistance to the Contractor in general assembly of the equipment, installation as specified in manufacturer's installation instructions, wiring, application dependant adjustments, and verification of proper AFD operation.
- B. The Contractor under the technical direction of the manufacturer's service representative shall perform the following minimum work.
 1. Inspection and final adjustments.
 2. Operational and functional checks of AFD and spare parts.
 3. The Contractor shall certify that he has read the drive manufacturer's installation instructions and has installed the AFD in accordance with those instructions.

- C. The Contractor shall provide three (3) copies of the manufacturer's field start-up report.

3.04 MAINTENANCE / WARRANTY SERVICE

- A. Warranty shall be a minimum of two years from the date of start-up and include all parts, labor, and travel time.

3.05 TRAINING

- A. The Contractor shall provide a training session for up to 5 owner's representatives for one normal workday. Training and instruction time shall be in addition to that required for start-up service.
- B. The manufacturer's qualified representative shall conduct the training.
- C. The training program shall consist of the following:
 - 1. Instructions on the proper operation of the equipment.
 - 2. Instructions on the proper maintenance of the equipment.

END OF SECTION

SECTION 16741**SECURITY GATE VIDEO INTERCOMMUNICATION SYSTEM****PART 1 GENERAL****1.01 SYSTEM DESCRIPTION**

- A. Provide an Intercommunication System as specified herein and as indicated on the Drawings. System shall provide 2-way audio between gate station and master stations via a call button. The master shall be able to open/close the gate. System shall also provide one-way video from the remote stations to the master stations.

1.02 SUBMITTALS

- A. Submit complete product data and shop drawings.
- B. Submit system block diagram and complete wiring diagrams
- C. Submit O&M manuals in accordance with 16020. Test reports required below shall be included in the O&M, along with an as-built configuration record of the system.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Protect all equipment delivered and placed in storage from the weather, humidity and temperature variation, dirt and dust, or other contaminants.

1.04 SPARE PARTS

- A. Provide five (5) spare fuses of each unique fuse type utilized.

PART 2 PRODUCTS**2.01 INTERCOM EQUIPMENT**

- A. Video Capability: Provide intercom stations with video in addition to audio. Master stations must be able to view individuals at remote stations equipped with video, but remote stations must not be able to view video from the master station(s). The system shall be expandable such that at least (2) master stations and at least (5) remote door/gate stations can be added in the future.
- B. Video Master Stations must have the following features:
 - 1. Shall be Aiphone IX-MV7-B or equal.
 - 2. Color touch screen with a diagonal size of at least 7 inches.
 - 3. Hands-free communications with adjustable volume.
 - 4. Automatic camera call-up specific to the remote station when communicating with a remote station.
 - 5. Audio and video storage of at least twenty calls of at least five minutes each on

removable SD or SDHC media. Include software for viewing and listening on a standard PC if files are a proprietary format.

6. Low voltage power supply requirement complete with AC power adapter. Alternatively, POE power supply may be utilized.
7. Door release function.
8. Call-In Indication: Master stations must have an audible and visual call-in indicator to provide indication of incoming calls from remote stations. Indication must identify the specific calling station and status, and remain actuated until the call is answered by a master station.
9. The system must be programmable and password protected and allow access to be granted or denied to various stations on an individual basis for each master station.

C. Remote Audio-Video Gate Station

1. Shall be Aiphone IX-DV or equal.
2. Remote station shall have stainless or aluminum faceplate with tamper proof mounting screws and stainless or aluminum backbox.
3. A speaker with a minimum sensitivity of 90 dB on axis at 1200 mm 4 feet from the speaker when driven at one watt rms.
4. Call Switch that permits a call to the master station.
5. NEMA 3R weatherproof rating
6. A fixed-focal length, recessed color camera with sufficient depth of field to provide clear images with no discernable difference in sharpness for subjects between 12 inches to 84 inches from the camera lens surface. It shall have an angle of view between 80 and 115 degrees and a resolution of at least one megapixel.
7. The camera shall support full color video when the vertical illumination on the subject's face is as low as 2 footcandles, and shall have an effective frame rate of at least 20 frames per second with H.264 or H.265 compressed video output.
8. An integral white LED shall be included to illuminate subject to maintain above specifications when ambient light level is below 2 footcandles.
9. Operating temperature shall be -20 to 122 degrees Fahrenheit minimum with no discernable loss of performance.

2.02 CABLING/WIRING

- A. Type of signal and control circuit wire and number of conductors must be provided as recommended by the intercommunication system manufacturer, and as necessary to provide a complete and operable system.in accordance with NFPA 70.
- B. Multi-conductor cables must contain only stranded conductors of minimum 18 AWG gauge, insulated with minimum 105-degree Celsius-rated insulation. Cable jacket must be rated at minimum of 105 degrees Celsius and the cable shall be listed for wet-locations.

- C. Balanced twisted-pair telecommunications cables shall be minimum 24 AWG, Category 6, and listed for use in wet-locations along with installation in underground ducts/conduits.
- D. Fiber optic cabling shall be 6-fiber, multimode, 50 micron, OM3, loose-tube listed for wet locations in underground ducts/conduits.

2.03 FIBER CONVERTER CABINETS

- A. Provide NEMA 4X fiber converter cabinets to convert from fiber optic to copper Cat-6 cabling.
- B. The power supply to the cabinet shall be either 120VAC or 480VAC as indicated on the Drawings. Provide a main cabinet disconnect switch, a fused transformer (if required), and a 120V receptacle inside the cabinet. Also provide a 24VDC power supply where necessary for powering intercom or gate access equipment.
- C. Provide a Corning SPH patch panel housing with adapter panel, fiber termination tips, fan-out kits, patch cables, and all necessary parts for a complete installation. Fiber terminations may be either Corning Unicam or fusion style. All fibers in the cable are required to be terminated, including spares.
- D. Provide a POE mid-span injector for powering intercom equipment where needed or as indicated on the Drawings.

2.04 ACCESS CONTROL KEYPAD

- A. The keypad shall be Aiphone AC-10S or equal.
- B. The keypad shall allow standalone access control for up to 100 users.
- C. The keypad shall have a 12 digit backlit keypad and shall be zinc die cast with IP54 enclosure.
- D. Temperature rating shall be -4 to 140°F.
- E. The keypad shall include (2) form C dry contacts rated 24V AC/DC, 3A.

2.05 GATE ENTRANCE PEDESTAL

- A. Provide a Pedestal Pro or equal gooseneck 48" pedestal suitable for pad-mounting.
- B. Provide a 12" diameter by 24" deep concrete foundation for the pedestal, and utilize stainless steel anchors.
- C. Provide a Pedestal Pro or equal housing for the gooseneck pedestal with dimensions sized for both the intercom gate station and access keypad. The housing shall have a sun-shroud.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install all system components and appurtenances in accordance with the manufacturer's instructions and as specified and shown. Units to be mounted outside or subject to inclement conditions must be weatherproof or be mounted in weatherproof enclosures.

3.02 WIRING AND CABLING

- A. Install signal and control circuits in accordance with NFPA 70, TIA-568.0, TIA-568.1, TIA-568.2, TIA-568.3, and as indicated. The conductors must be separated as recommended by the equipment manufacturer.
- B. Size conductors to maintain voltage drop in power circuits to no more than 3-percent and loss in signal circuits to no more than 0.5 dB. Include boosters, additional power supplies, amplifiers, switches, etc. as necessary to maintain these requirements.
- C. All cabling shall be installed in conduit as specified in 16020.
- D. Cables that do not use modular connectors can use terminal strips and junction boxes to extend the cable if in conformity with manufacturer recommendations.

3.03 PROGRAMMING

- A. Provide programming of intercom system and access control keypad to meet Owner requirements with individual access code for each operator.

3.04 TRAINING

- A. Conduct a training course for members of the operating staff. The training course must be given at the site during normal working hours, and must start after the system is functionally complete and subsequent to successful final acceptance tests.

3.05 ACCEPTANCE TESTS

- A. After installation has been completed, conduct an testing to demonstrate that the equipment operates in accordance with specification requirements as follows.
- B. Cable Tests – provide Fluke (or equal) Certifier tests for all copper Cat-6 cabling. Provide Fluke (or equal) OTDR certifier tests for all fibers, including spares. Submit test reports.
- C. Operational Test: Test originating station-to-station, and all call at each intercommunication station. Verify proper routing and volume levels and that the system is free of noise and distortion. Test available message path from each station on system. Test for proper video displays and automatic display of pre-preprogrammed video views. Verify that video from all remote stations appears at all master stations with proper resolution, focus, and color balance meeting the manufacturer's published specifications.
- D. Test Reports: Submit test reports with O&M manuals, upon completion and testing of the installed system, showing all field tests performed to adjust each component and to prove compliance with the specified performance criteria. Include in each test report the final position of controls and operating mode of the system. Include the manufacturer, model number, and serial number of test equipment used in each test.

End of Section

SECTION 17010**GENERAL INSTRUMENTATION AND SCADA REQUIREMENTS****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. The Contractor shall furnish and install all materials, services, spare parts, commissioning, and other services as shown and specified and as required to update the existing instrumentation and supervisory control and data acquisition (SCADA) system as indicated on the Drawings and as described herein. HTI, Inc is the required SCADA integrator as the manufacturer of the existing system. Contact Jeff Morris, 270-274-4632, jeff@hti-usa.com. Note: Owner will provide Citect SCADA software programming.
- B. All Instrumentation/SCADA equipment shall be installed, connected, and left in operating condition. The number and size of cables and conductors between all equipment and SCADA monitoring/control devices shall be as required to obtain the operation described in these Specifications, and/or by the Contract Drawings, and/or as shown in manufacturer-furnished, Engineer-reviewed Shop Drawings. The Contractor shall be responsible for supplying all components such as relays, loop isolators, etc., as necessary, whether indicated or not, at no additional cost to the Owner in order to leave a complete functional instrumentation system. The Contractor shall ensure compatibility between all system components and provide any necessary peripheral equipment as required to make the components compatible.
- C. The Contractor shall be responsible for making any modifications to existing equipment, where required to accept new equipment and systems.
- D. Bidders are required to visit the construction site prior to submitting a bid and carefully examine the Contract Drawings and Specifications so that he/she may fully understand what is to be done and to document existing conditions. Any discrepancies, questions, or omissions must be brought to the attention of the Engineer at least 10 days prior to the bid opening date. Extras will not be approved for work that the Contractor should have seen beforehand by visiting the site prior to bidding.

1.02 RELATED WORK

- A. Contractors bidding work under this Contract shall read and understand Division Zero and Division 1 - General Requirements. If any discrepancies are discovered between the General Instrumentation and Supervisory Control and Data Acquisition (SCADA) Requirements and General Requirements, the above-mentioned documents shall overrule this section. The General Instrumentation/SCADA Requirements are intended as a supplement to the above-mentioned documents. The Contractor shall bid as outlined in the above-mentioned Specifications and shall be governed by any alternates or unit prices called for in the form of proposal.
- B. Division 16 - Electrical

1.03 SUBMITTALS

- A. Shop Drawings including descriptive literature and/or installation, operation and maintenance instructions shall be submitted in the amount of copies as listed in the General Conditions, but no less than 8 copies. All Shop Drawings shall be submitted in loose-leaf three-ring cardboard reinforced vinyl binders with extensive indexing. Each sheet in the binder shall have hole reinforcements. Should there be any exceptions to the Specifications, the Supplier shall completely describe such in front of the

submittal via a point-by-point letter referencing the specification paragraph number. The hardware submittal shall be arranged as follows:

1. Front Cover – Project description and pertinent information
 2. Review stamp page.
 3. Table of Contents
 4. Overall description of the system and overall BOM of equipment to be delivered
 5. Block diagram of system, including network architecture and IP addressing
 6. Complete Wiring diagrams, panel layouts/elevations, and panel BOMs
 7. Complete manufacturer's information on all equipment, including highlighted catalog/model number data sheets
 8. Complete list of spare parts
 9. Warranty description and information.
 10. Tag and alarm list for SCADA software integration.
- C. Shop Drawings shall be submitted on all equipment and software specified in this Division unless a specific written exemption is obtained from the Engineer. The Contractor shall not procure or install any materials, equipment, or software without approved shop drawings.
- D. The Engineer reserves the right to make modifications to instrumentation & SCADA equipment after Shop Drawing review, if the Instrumentation/SCADA Shop Drawings are submitted prematurely (prematurely meaning submitted before all process equipment has been reviewed and accepted). Cost of modifications shall be the Contractor's responsibility.
- E. Operation & Maintenance Manuals: Manuals shall include the accepted shop drawing information along with the following additions:
1. Include complete addresses of all equipment manufacturing representatives and phone numbers of each.
 2. Incorporate complete record drawings indicating final installation of equipment and wiring.
 3. Include complete manufacturer's installation, operations, and maintenance manual for each piece of equipment and software supplied. Note, if the manufacturer's manual exceeds 50 pages in length, include only a place-holder page that directs the reader to the USB thumb drive electronic documentation.
 4. Complete as-built overall Bill of Materials, and BOM for each panel.
 5. Include a configuration record for each piece of equipment, including all parameter settings and set points.
 6. The manuals shall include a USB thumb drive which include electronic version of all of the above information, along with the following additional information:
 - a. Backup of all programs developed in the course of the project.
 - b. Backup of all reports, databases, set point listings, and all other electronic information utilized in the project.
 - c. Manufacturer O&M manuals which exceed 50 pages in length.
 - d. Backup of any other software pertinent to documenting or restoring instrumentation/SCADA system operation in the event of a failure.

1.04 SYMBOLS AND ABBREVIATIONS

20016/1.11.2023

GENERAL INSTRUMENTATION AND SCADA
REQUIREMENTS

- A. The symbols and abbreviations generally follow standard instrumentation and electrical practice, however, exceptions to this shall be as shown on the Contract Drawings.

1.05 COORDINATION WITH OTHER TRADES

- A. The Contractor shall coordinate the instrumentation/SCADA work with that of other trades to ensure proper installation and functionality of all equipment and process control/monitoring programs. Installation of equipment may be performed by other trades unless specified otherwise.

1.06 CODES

- A. The minimum standard for all work shall be the latest revision of the Kentucky Building Code (KBC), and the National Electrical Code (NEC). Whenever and wherever state and/or local laws or ordinances and/or regulations and/or the Engineer's design require a higher standard than these codes, then these laws and/or regulations and/or the design shall be followed.

- B. Following is a list of other applicable Standards or Codes:

1.	Kentucky Building Code	KBC
2.	National Electrical Code	NEC
3.	International Electrotechnical Commission	IEC
4.	Underwriters Laboratories, Inc.	UL
5.	Factory Mutual System	FM
6.	National Fire Protection Association	NFPA
7.	National Electrical Manufacturers Association	NEMA
8.	Occupational Safety and Health Administration	OSHA
9.	National Institute of Standards and Technology	NIST
10.	Instrument Society of America	ISA
11.	Institute of Electrical and Electronic Engineers, Inc.	IEEE
12.	American National Standards Institute, Inc.	ANSI
13.	Federal Communications Commission	FCC

1.07 STORAGE

- A. All work, equipment, and materials shall be protected against dirt, water, or other injury during the period of construction.
- B. Sensitive instrumentation/SCADA equipment shall be protected against injury or corrosion due to atmospheric conditions or physical damage by other means. Protection is interpreted to mean that equipment shall be stored under roof, in a structure properly heated in cold weather and ventilated in hot weather. Provision shall be made to control the humidity in the storage area to 50 percent relative. The stored equipment shall be inspected periodically, and if it is found that the protection is inadequate, further protective measures shall be employed. Instrumentation/SCADA equipment shall not be installed until the structure is under roof with doors and windows installed.

1.08 ERRORS, CORRECTIONS, AND/OR OMISSIONS

- A. Should a piece of process equipment be supplied of a different type or manufacturer than shown or specified in the Contract documents, the Contractor shall be responsible for installing, programming, and commissioning the proper instrumentation/SCADA equipment for proper operation, control, and monitoring of that process equipment at no extra cost to the Owner.

- B. It is the intent of these Specifications to provide for an instrumentation/SCADA system installation complete in every respect, to operate in the manner and under conditions as shown in these Specifications and on the Contract Drawings. The Contractor shall notify the Engineer, in writing, of any omission or error at least 10 days prior to opening of bids. In the event of the Contractor's failure to give such notice, he/she may be required to correct work and/or furnish items omitted without additional cost. The submission of a bid indicates that the Contractor believes the design to be sound and can provide a fully functional and complete instrumentation and SCADA system. Further requirements on this subject may be found in the General Requirements, Division 1.

1.09 GUARANTEES AND WARRANTIES

- A. The Contractor shall guarantee all work including equipment, materials, and workmanship. This guarantee shall be against all defects of the electrical system or improper equipment operation. It shall last for the period of time specified in the General Conditions of the Contract, but not less than one year from the date of system acceptance (i.e. – when the Engineer accepts that the punchlist is complete.) On-site response within 24 hours is required, at no additional cost, for problems experienced within the warranty period.

1.10 TESTING

- A. After the instrumentation/SCADA system is complete, and at such time as the Engineer may direct, the Contractor shall conduct an operating & performance test for acceptance. The system shall be demonstrated to operate in accordance with the requirements of these Specifications and the Contract Drawings. The test shall be performed in the presence of the Engineer or his authorized representative. The Contractor shall furnish all instruments, hardware, software, and personnel required for the tests.

1.11 TRAINING

- A. Provide training to Owner on high service pump operation PLC logic so that they can prepare the Citect software modifications.

1.12 RECORD DRAWINGS

- A. The Contractor shall maintain 1 set of the Contract Drawings on the job in good condition for examination at all times. The Contractor's qualified representative shall enter upon these drawings, from day to day, the actual record of construction and/or alteration progress. Entries and notes shall be made in a neat and legible manner and these drawings delivered to the Engineer after completion of the construction, for use in preparation of Record Drawings.

1.13 MAINTAINING CONTINUOUS PROCESS CONTROL AND MONITORING SYSTEM

- A. Existing system(s) continuity shall be maintained at all times. In no way shall the installation and/or alteration of the instrumentation/SCADA work interfere with or stop the normal operation of the existing facilities, except where prior arrangements have been made.
- B. When additions and modifications to existing system(s) require outages of duration in excess of a few minutes, arrangements shall be made in advance for such outages. All outages shall be held to an acceptable minimum with none exceeding 8 hours continuous duration. If necessary, outages shall be performed on premium time. Under no circumstances shall a process control/monitoring outage of any duration be initiated until the Owner and Engineer have concurred, and as far as possible in advance.

1.14 RECEIPTS

20016/1.11.2023

GENERAL INSTRUMENTATION AND SCADA
REQUIREMENTS

- A. Some sections of the Specifications call for equipment, materials, accessories, etc. to be furnished and “turned over to the Owner” or like requirements. The Contractor shall obtain a receipt for each item turned over, signed by the Owner or his representative. A copy of this receipt shall be transmitted to the Engineer.
- B. When a question arises concerning whether items have been turned over to the Owner, and there is no signed receipt, it may be assumed that the items were not furnished.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials used shall be new unless noted otherwise. All materials shall be UL listed for the application where a listing exists. Additional requirements are found in Division 1. All equipment shall meet applicable FCC requirements and restrictions.
- B. The material and equipment described herein has been specified according to a particular trade name or make to set quality standards. However, each Contractor has the right to substitute other material and equipment in lieu of that specified, other than that specifically mentioned for standardization, providing such material and equipment meets all of the requirements of that specified and is accepted, in writing by the Engineer.
- C. The reuse of salvaged equipment will not be permitted unless specified herein or indicated on the Contract Drawings.
- D. Prior to demolition, Contractor shall give Owner the option of retaining any equipment to be demolished as spare parts. Otherwise, all salvaged or abandoned instrumentation/SCADA materials shall become the property of the Contractor and shall be removed from the job site and disposed of in accordance with pertinent laws and regulations, unless otherwise noted on the Contract Drawings or specified herein.

PART 3 - EXECUTION

3.01 GROUNDING AND BONDING

- A. All metallic conduit, cabinets, supporting framework and instrumentation/SCADA equipment shall be grounded in accordance with the latest issue of the National Electrical Code.

3.02 ANCHORING/MOUNTING

- A. Instrumentation/SCADA equipment other than computer equipment located in the office/control room shall be rigidly supported as specified in Division 16.
- B. All wall/surface mounted cabinets, panels, or other devices shall be mounted with a minimum 0.5” air gap between the cabinet and the wall.

END OF SECTION

SECTION 17200**SCADA HARDWARE & PLC DEVELOPMENT****PART 1 - GENERAL****1.01 SCOPE OF WORK**

- A. The Contractor shall furnish and install all materials, services, spare parts, start-up services, as shown and specified and as required to update the existing supervisory control and data acquisition (SCADA) system as indicated on the Drawings and as described herein.
- B. Additional requirements are specified in Section 17010.

1.02 RELATED WORK

- A. Installation of all electrical equipment, conductors, and related items shall be in accordance with all applicable sections of Division 16 of these specifications.
- B. General Requirements are included in Division 1.
- C. Division 11 - Equipment
- D. Section 17010 - General Instrumentation and SCADA requirements.

1.03 SUBMITTALS

- A. Shop drawing approval is required before the Contractor purchases or installs any equipment. Submit in accordance with Section 17010.
- B. Operation and Maintenance Manuals shall be submitted in accordance with Section 17010.

1.04 QUALITY ASSURANCE

- A. See Section 17010 for requirements.

1.05 WARRANTY AND SERVICE

- A. See Section 17010 for requirements.

1.06 SPARE PARTS

- A. Furnish one spare I/O Module for each unique I/O module type installed.
- B. Furnish one spare Ethernet switch for each unique switch supplied.
- C. Ten fuses of each size/type in the system.

1.07 COORDINATION

- A. Provide coordination with Owner so that Owner can provide the necessary Citect SCADA software modifications. Submit a tag and alarm list for Owner use, and provide training on the PLC program modifications

PART 2 – PRODUCTS

2.01 GENERAL

- A. Acceptable manufactures of SCADA hardware shall be Allen-Bradley,
- B. All equipment must be able to reset after a power outage without having to be manually reset.

2.02 SCADA CABINETS

- A. Existing SCADA cabinet shall remain and shall be modified as needed to accommodate the new equipment.

2.03 CONTROLLERS AND I/O

- A. Provide new I/O module for existing CompactLogix PLC system as indicated on the Drawings.

2.04 SIGNAL MULTIPLIER

- A. Provide a new signal multiplier to capture the existing clearwell level signal as indicated on the Drawings.

2.05 COMPUTERS

- A. Existing computer shall remain.

2.06 DATA HIGHWAYS AND ASSOCIATED EQUIPMENT

- A. The new frequency drives shall be monitored and controlled via Ethernet/IP by the existing CompactLogix PLC.
- B. Provide cables as required to interconnect each network component. Cables shall be installed in conduit under Division 16 and shall be Cat-6.
- C. Ethernet Switch – Unmanaged
 1. The Unmanaged Ethernet switch shall be IEEE 802.3 compliant.
 2. The switch shall have a minimum of 12 RJ-45 ports.
 3. Port Configurations: All switches shall be Copper 10/100/1000TX with RJ-45 connections. Fiber optic ports are acceptable and encouraged in lieu of using media converters.
 4. Auto-negotiation: All Copper TX ports shall support auto negotiation. Each TX port will be able to interface to 10/100/1000 meg or full/half duplex devices.
 5. AutoCross: All TX ports will provide cable autocross capability.
 6. The address table shall have a minimum capacity of 4000 addresses.
 7. The switch shall contain an alarm contact that can be configured via standard web browser to annunciate the drop out of either or both power supply inputs and/or to annunciate the active link status of any combination of ports. An LED shall be provided to indicate the status of the alarm contact.
 8. The switch shall also have power supply, link active, and communications status LEDs
 9. The Switch shall be din rail mountable out of the box and without the need to add/assemble adaptor or similar mounting plates.
 10. All power and alarm connections shall be wired using removable connectors.
 11. The switch shall be powered by a nominal 24VDC, 120VAC, or as shown on the Contract Drawings
 12. The Switch shall have provision for supporting redundant power inputs. Power supply switchover will not interrupt switch operation.

13. Provision will be made such that the loss of one or more power supply may be user configurable to trigger a hardware alarm (ie relay contact)
14. The Switch shall have an operating temperature range of 0° to 55° C or greater
15. The switch shall withstand a maximum continuous operating humidity of 95% without condensation.
16. Electrical Noise Immunity: The switch shall conform to the IEC61000-4-2 to 4-8 series of noise specifications
17. Shock and Vibration: The switch shall conform to IEC60068-2-27 and withstand a shock pulse of 25G or more for 11ms. The operating vibration spec shall conform to IEC60068-2-6 (Criterion 3) at 5G 150Hz, in all 3 axis.
18. Agency Certifications: The switch will be certified for UL/Cul 508, UL 1604 Class1 Div 2 hazardous locations, CE
19. The switch shall be NTRON, Phoenix Contact, or equal.

PART 3 EXECUTION

3.01 EQUIPMENT INSTALLATION

- A. Install all equipment in accordance with the manufacturer's installation and maintenance information.
- B. Furnish and install all necessary mounting equipment, brackets, required for mounting of equipment.
- C. Data highway cables shall be pulled without undo stress that may aggravate the number of twists per foot.
- D. Place duct seal around the wires in each conduit entering every SCADA cabinet for the project.
- E. All equipment shall be left free from shipping burrs, paint overspray, grease, etc. All scratches shall be touched up with manufacturer's matching paint.
- F. Locate equipment as shown on the electrical drawings.
- G. The placing and location of system components, their connections to the process equipment panels, cabinets and devices, shall be coordinated with the Engineer's acceptance.

3.02 PLC DEVELOPMENT SERVICES

- A. General: PLC development services shall include program development, coordination with Owner, testing, documentation, and work necessary to implement a complete and fully operating system as shown on Drawings and as specified.
- B. Integrate each I/O point indicated in the SCADA I-O table on the Drawings.
- C. Alarms
 1. Provide the following alarms in addition to the alarms required in the I/O table on the Drawings:
 - a. For each piece of equipment that is called to run by a controller and has a status feedback signal, provide a "Failure to Start" alarm that triggers 30 seconds after the equipment is called to run if it is not confirmed to be running by the feedback signal.
 - b. For each 4-20mA instrument, provide a "Transmitter Failure" alarm that triggers if the signal falls below 3.8 mA or exceeds 20.2 mA. This alarm shall not be triggered if a power outage occurs.

3.02 CONTROL SEQUENCES

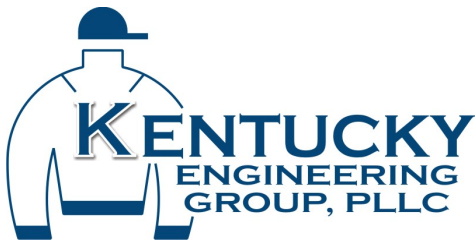
A. High Service Pump Control Sequence

1. Provide an automatic control algorithm to start and stop the high service pumps based on elevated water tank level. Speed control shall be implemented via manual operator setpoint.
2. Provide High Level, Off, Lead, Lag, and Low Level setpoints for the elevated water tank. When the tank level is above the "Off" setpoint, all pumps shall be off.
3. When the tank level falls and triggers the "Lead" setpoint, the lead pump shall start.
4. If the tank level falls and triggers the "Lag" setpoint, the lag pump shall start. Only two high service pumps should be allowed to run at a time.
5. If the tank level falls to the low level setpoint or rises above the high level setpoint, an alarm shall be triggered.
6. Provide alternation controls that will allow the pumps to alternate or be "locked-in" to a specific starting sequence.
7. When the tank level rises to the OFF setpoint and the pumps turn off, the sequence shall be alternated such that the former standby pump is now the lead pump, and the former lead pump is now the Lag pump, and the former Lag pump is now the standby pump.
8. When a pump HOA switch is not in the Auto position, it shall be removed from the automatic control sequence.

3.03 PERFORMANCE TEST

- A. Following installation, checkout, and final adjustment of software, the Contractor shall schedule a performance test in the presence of the Engineer and the Owner.
- B. Demonstrate to the Engineer and Owner that each I/O point scheduled on the Contract Drawings has been integrated and is functioning properly and that no nuisance alarms are triggering.

END OF SECTION



ADDENDUM NO. 1
East-West Interconnect Project – Phase 2
Contract 7 – Water Treatment Plant Improvements
Grayson County Water District
Grayson County, Kentucky

BID DATE: **Wednesday, February 1, 2023 – 11:00 a.m. (CST Local Time)**

This Supplement to Addendum No. 1 and its noted revisions and attachments to the Drawings and Specifications shall supplement, amend, and become a part of the Bidding Documents, Drawings, and Specifications. All Bids and Construction Contracts shall be based on these modifications.

REVISIONS AND ATTACHMENTS

1. Specifications, Section 11301 – ADSORPTION SYSTEM FOR USE WITH GAC

The following sections shall be changed to:

2.03.C - Process piping (influent, effluent and backwash) will be 8” diameter, constructed of schedule 40 carbon steel, ASTM A53 Grade B materials with 125# ASTM A126 Class B cast iron flanged fittings.

2.03.E - Carbon fill piping will be 4” diameter, constructed of schedule 40 carbon steel, ASTM A53 Grade B materials. Carbon discharge piping will be 4” diameter, constructed of schedule 40 polypropylene lined carbon steel, ASTM 53 Grade B materials with ppl lined flanged fittings.

2.04.B - The influent, effluent, and backwash valves will be a cast iron wafer type body butterfly valve with aluminum-bronze disc, BUNA-N seats and stainless-steel shaft to mate to 150-pound ANSI flanges. The valves are rated for 200 psig in closed position at 180 F and meet or exceed section 5.0 of AWWA specification C-504-87.

2.06.E - The influent and effluent pipe for each vessel will be provided with a molded neoprene reinforced rubber expansion joint which allows 4-way movement and 19° angular misalignment.

2.06.F - Gaskets will be 1/8" thick, 85 durometer EPDM with a temperature range of -40F to 275 F and a pressure rating of 175 psig.

2. Specifications, Section 11212 – VERTICAL TURBINE PUMPS, 2.01.B.1.c. shall also include Franklin Electric and Hydroflo

3. DRAWING C-1-01 – HIGH SERVICE PUMPS DEMOLITION/MODIFICATIONS PLANS & SECTIONS

Painting of all the existing pipe gallery piping will NOT be included in the project. The only surface preparation and painting required will be the new high service pumps, piping, valves, fittings, etc. and the existing high service header piping. General Demolition Notes No 7 shall be modified to reflect this change and will be included on the Conformance Drawings.

4. DRAWING SD-0-01 – Standard Details

DGA Access Drive detail has been included on the attached revised plan sheet.

5. DRAWING E-5 – ELECTRICAL SITE PLAN

Disregard Sheet Note No 3. Modify Note No 4 to remove the requirement for the 1" Conduit. There is an existing 2" and ¾" unused conduits running between the buildings that can be used.

6. DRAWING S-01 – GAC BUILDING FLOOR PLAN (STUCTURAL)

Plan sheet has been added for additional structural support of the new GAC vessels. Vertical piping shall be modified to account for the 4" concrete housekeeping pad.

7. RFI Responses – See attached document

Ryan Carr, PE
Project Engineer
Kentucky Engineering Group, PLLC
P.O. Box 1034
Versailles, KY 40383
Email: rcarr@kyengr.com

January 27, 2023

**RFI'S FROM CONTRACTORS
ADDENDUM NO. 1**

**East-West Interconnect Project – Phase 2
Contract 7 – Water Treatment Plant Improvements
Grayson County Water District
Grayson County, Kentucky**

General Questions

1. *Advertisement for bids states 270 days till substantial completion, 300 days till final. Agreement states 420 days till substantial completion, 450 days till final. Which is correct?*

Response: 420 days substantial completion, 450 days final completion

2. *Could you verify the slab the new carbon vessels rest on will support the added weight?*

Response: See new plan sheet S-01 included with Addendum No 1 for structural requirements.

3. *Could you give us the heavy wage rate for a carpenter?*

Response: The included wage rates in the bidding documents are what was provided by the Department of Labor. Contractor will be responsible for requesting any additional required wage rates post bid.

4. *For the Grayson County high service pumps, what is the mounting floor elevation? The drawings show the bottom of well elevation but not the top of well elevation.*

Response: As-built drawings indicate the floor elevation of the pump room to be 576.50' but the Contractor will be required to field verify.

5. *Is it safe to assume the pumps need to be NSF-61/372 certified? The spec did not note NSF so we wanted to confirm.*

Response: Yes the high service pumps shall be NSF-61/372 certified.

6. *What is the brand and model number of the existing MCC we are to supply new breakers for on sheet E-3?*

Response: It is a G.E. 8000 motor control center with Catalog #0699X0925L01 and Diagram #337B6710. It also has numbers M-872037 and NP204B4142EXP2 and was built in the Mebane N.C. plant. This MCC is obsolete but C.E.D. indicates that

ABB can still make units for it. Lyndon Jones with Lexington's CED branch has been working on putting pricing together. His info is:

Lyndon Jones

Power Distribution MCCs | CED Lexington

1720 Fortune Court Suite 140 Lexington, KY 40509

Office: (859) 293-0573 | Cell: (859) 333-6483 | ljones@cedlexington.com

7. *Plan page E-5 on Grayson County WTP scale is jumbled. Need clarification on the scale.*

Response: 1" = 40'

8. *Plan Sheet C-1-01, Demolition Note 7; Please clarify the following:*

Not all piping in the existing gallery is pictured. Is ALL existing piping to be painted, to include the air scour blower? Please confirm all the high service piping and the backwash piping is to be painted. There are several small diameter pipes that run from the lower level, through the high service pump level, and over the filters. How much of those small pipes needs to be painted?

Response: Plan sheet C-1-01 shall be revised per Addendum No 1 and reflected in the Conformance Set of drawings. The only pipe to be painted is the new pipe, valves, fittings, etc and existing high service discharge header piping.

9. *Plan Sheet SD-0-01 Detail Note 3 – "Contractor to install 8' high fence around electrical substation"...Does not appear on plans. Please clarify.*

Response: Disregard Note 3 on the fence detail.

10. *In the fence specs under 2.03 components C, it states the fence to be 7' tall. On sheet SD-0-01 for fence details, it shows the fence at 6' in height. Which is correct?*

Response: Fence fabric height shall be 6'-0" with post requirements per the detail on plan sheet SD-0-01.

11. *In the same spec section for fence under 2.03, components A, it states all accessories to be galvanized heavy coating of 1.8 oz. zinc. But in 2.04 finishes, it states both galvanized and black pvc coating. Which is correct?*

Response: galvanized

12. *The access controls are not in the fence specs. I assume the site electrician will be picking those items in their scope. Please confirm.*

Response: yes to be included in the electrical scope

13. *Could you please provide a DGA Pavement Detail? There was not one provided in the plans.*

Response: Revised sheet SD-0-01 is included with Addendum No 1

14. *Will any clearing of the existing trees be required for the new fence or will the fence be located in a position to where clearing will not be necessary?*

Response: There is no clearing of trees anticipated.

15. *How long can the high service pumps be shut down at a time? How many high service pumps must remain in service during the pump replacement?*

Response: If coordinated with the Owner, all pumps can be out of service for approximately 8 hours. For longer durations, two pumps shall remain in service during the replacement.

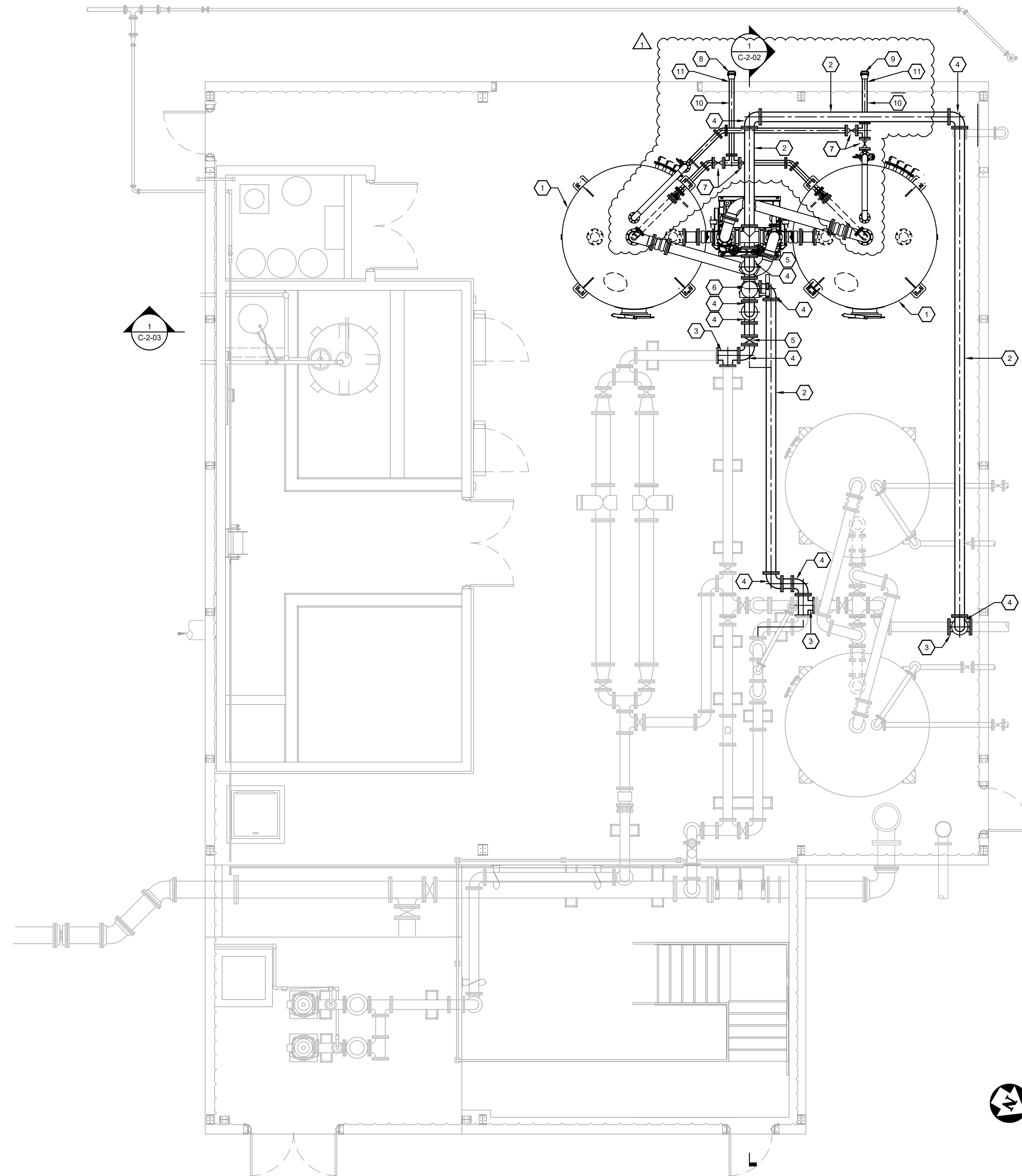
16. *There appears to be some drain lines coming from the existing Calgon Carbon Tanks. Will any work be required to run these drain lines to the existing lagoons? Looks like we may have to run these lines out of the building and provide a pipe trench for these lines to run to the lagoon. Please provide additional details if these drain lines are required.*

Response: See attached revised plan sheet C-2-01 included with Addendum No 1 for drain/fill piping.

17. *Regarding spec section 13300, item 2. Bid Checklist. The first item on the bid checklist is a Mandatory Pre-Bid Site Inspection Sign-off sheet and refers to the Pre-Bid Site Inspection. Is this inspection required by the bidding contractor or the GAC supplier?*

Response: No

P:\PROJECTS\Grayson County Water District\2016-East-West Interconnect PH 2-Contracts 6, 7\DWG\Contract 7 - WTP\20016 C-2-01.dwg REG 1/27/23



GENERAL NOTES:

1. ALL PIPING SHALL BE ADEQUATELY SUPPORTED (CONCRETE SUPPORTS AND MANUFACTURER'S PIPE SUPPORTS / HANGERS) TO PREVENT ANY UNDUE STRESSES ON FLANGED CONNECTIONS AND PREVENT PIPE SEPARATION.
2. NOTE, DIMENSIONS, ETC. TAKEN FROM EXISTING AS-BUILT PLANS. CONTRACTOR SHALL FIELD VERIFY.
3. CONTRACTOR SHALL COORDINATE WORK WITH WTP OPERATORS. SERVICE TO THE WATER PLANT SHALL NOT BE INTERRUPTED.
4. FINAL ORIENTATION OF NEW GAC VESSELS SHALL BE COORDINATED WITH THE OWNER / ENGINEER.

REFERENCE NOTES:

1. 10'-0" DIA. MODULAR GAC ADSORBER SYSTEM INCLUDING VALVE TREE
2. 8" DI PIPE
3. 8" DI TEE
4. 8" DI 90° ELBOW
5. 8" BUTTERFLY VALVE
6. 8" SWING CHECK VALVE
7. 4" S.S. BALL VALVE (PROVIDED BY GAC MANUFACTURER)
8. QUICK CONNECT DRAIN (PROVIDED BY GAC MANUFACTURER)
9. QUICK CONNECT FILL (PROVIDED BY GAC MANUFACTURER)
10. 4" DRAIN / FILL PIPING (PROVIDED BY GAC MANUFACTURER)
11. CORE & SEAL WALL AT PENETRATION

GAC BUILDING FLOOR PLAN

SCALE: 1/4"=1'-0"

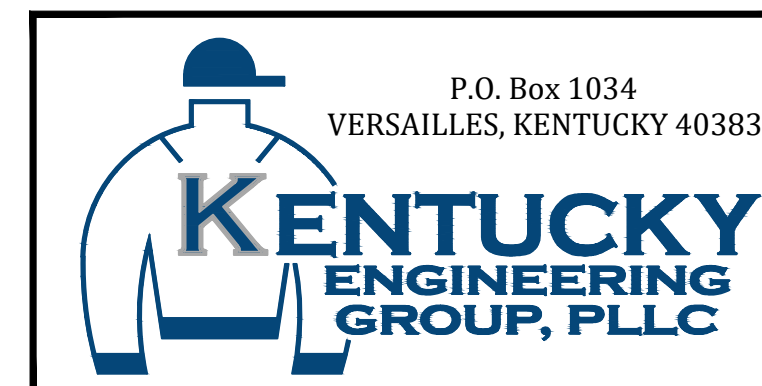


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NO.	DATE	REVISIONS	BY
1	1/27/2023	ADDENDUM No. 1	RCC

DATE:	DECEMBER, 2022
PROJECT MGR:	RCC
DRAWN BY:	JAB
CHECKED BY:	RCC
SCALE:	AS NOTED
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CONTRACT No. 7
WATER TREATMENT PLANT IMPROVEMENTS
 FOR THE
GRAYSON COUNTY WATER DISTRICT

GAC BUILDING FLOOR PLAN

PROJECT NO.
20016-07

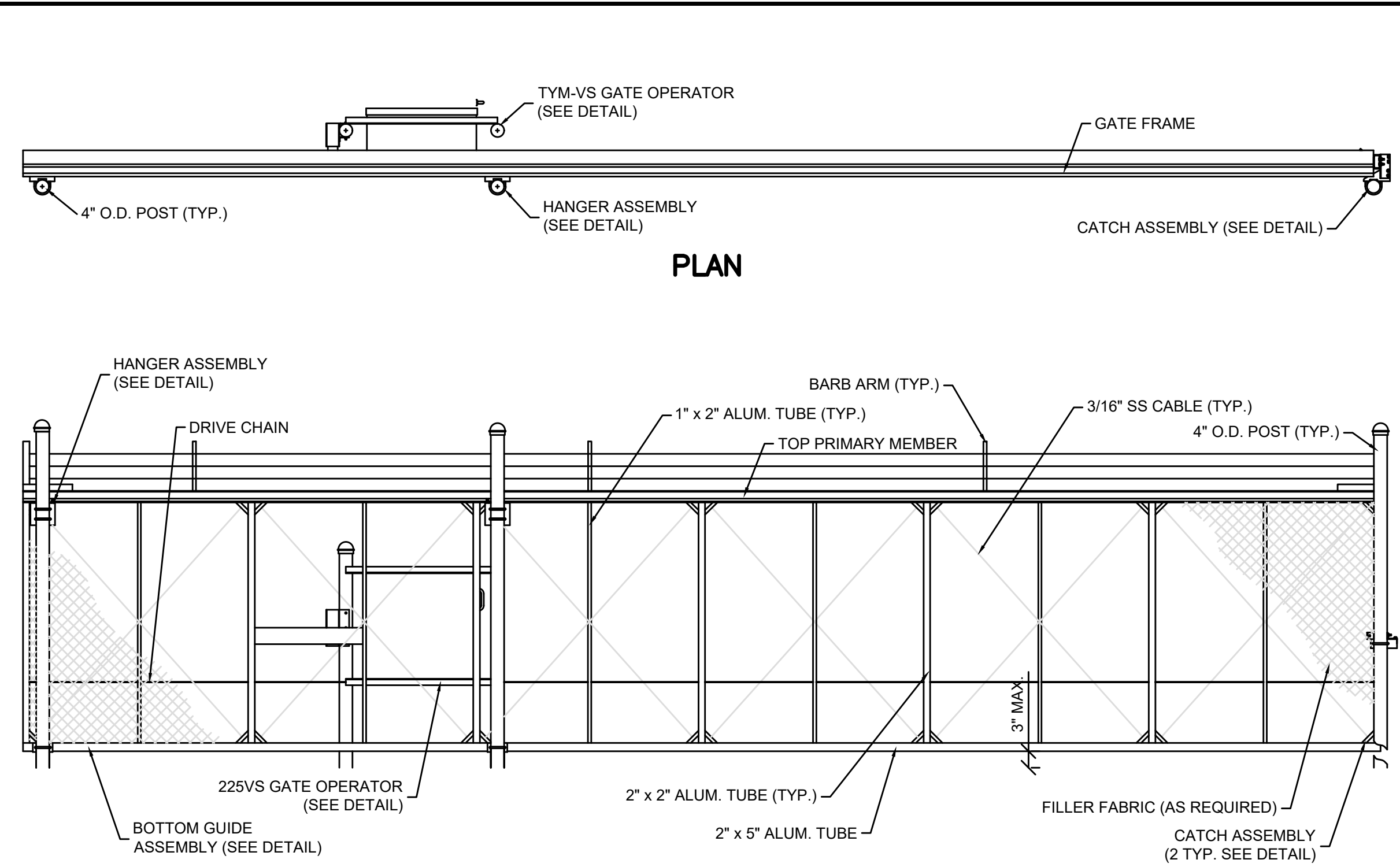
SHEET NO.
C-2-01

PROJECT NO.
20016-07

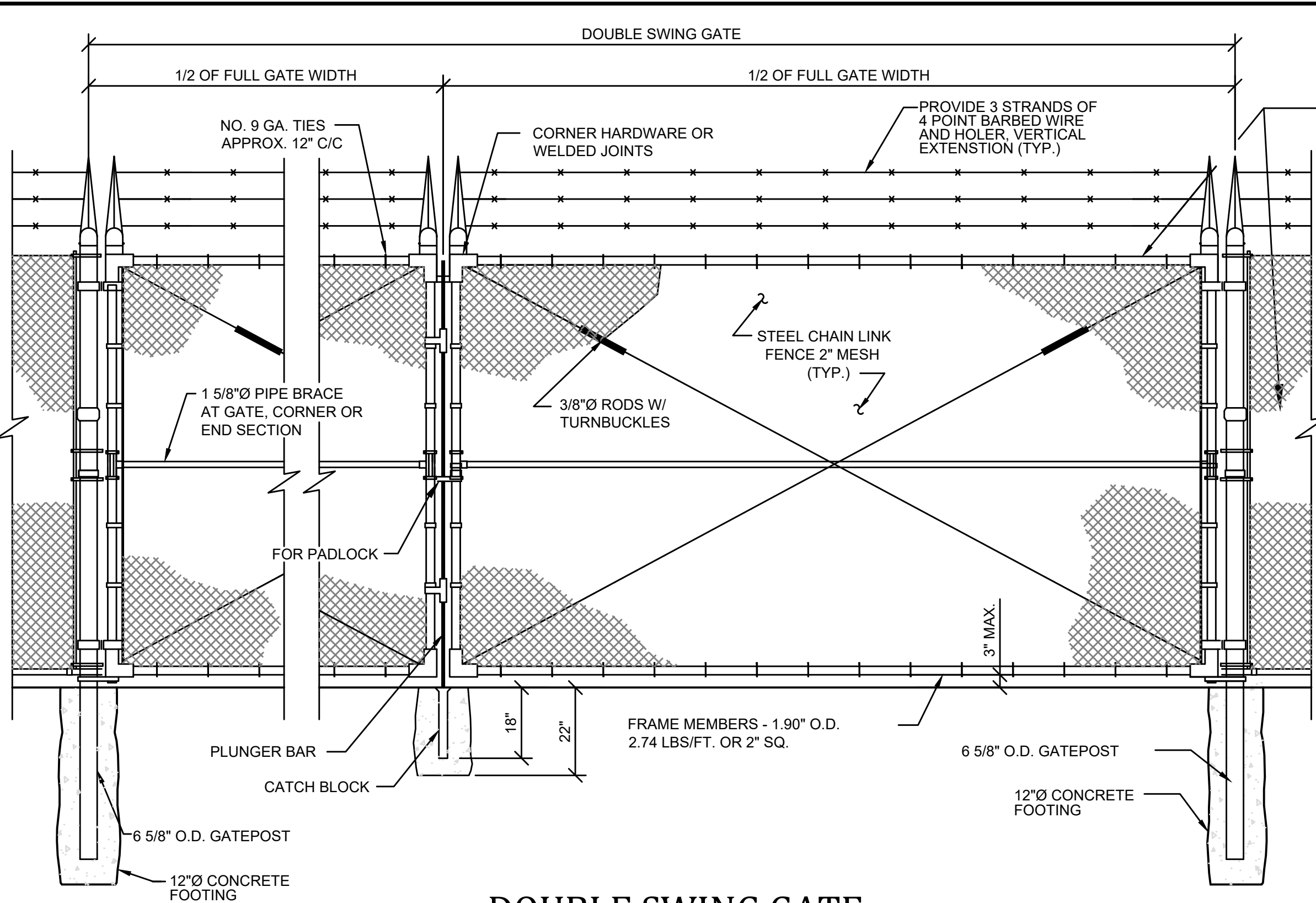
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C-2-01

BID DOCUMENTS

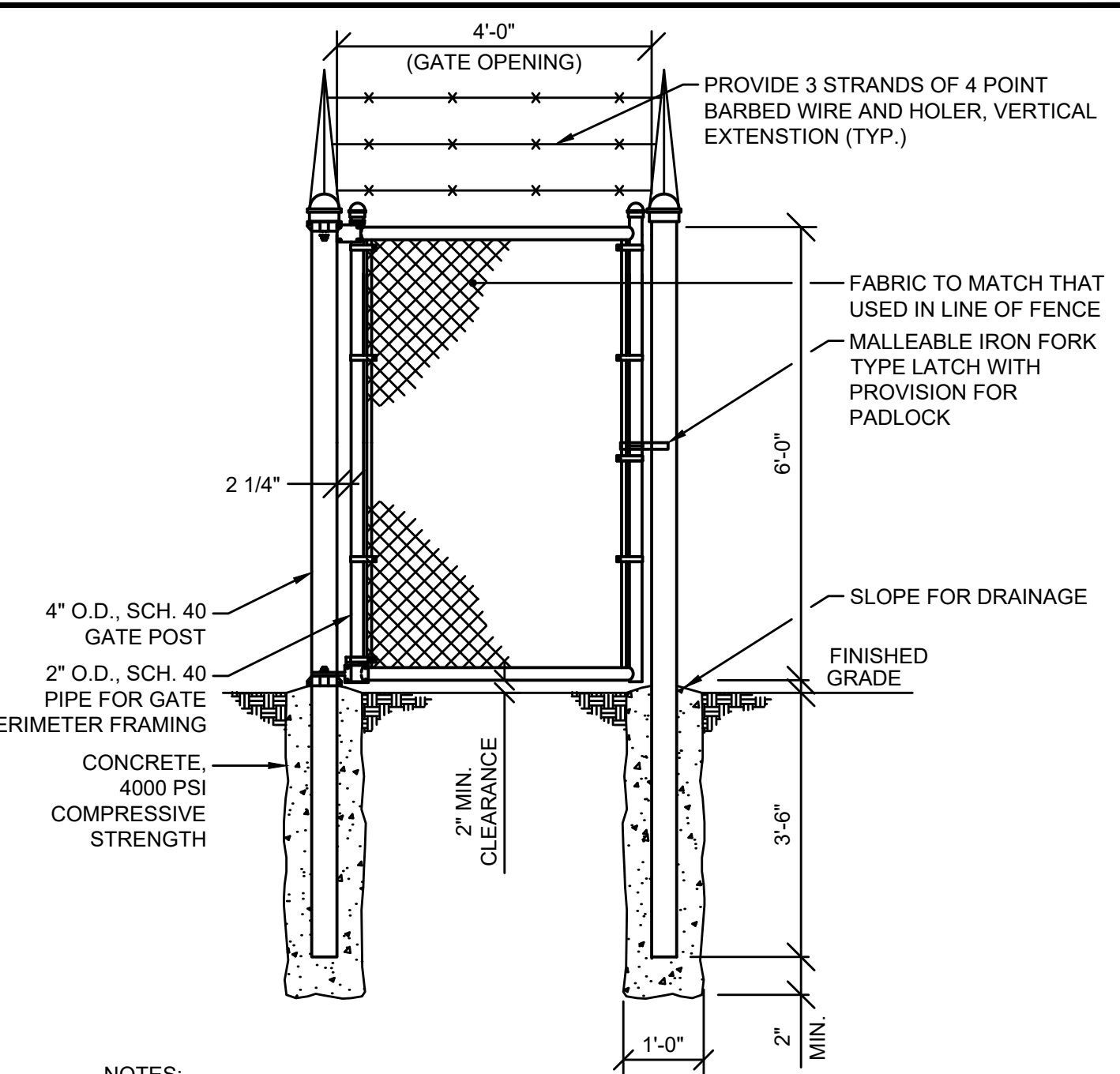
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CANTILEVER GATE
NOT TO SCALE

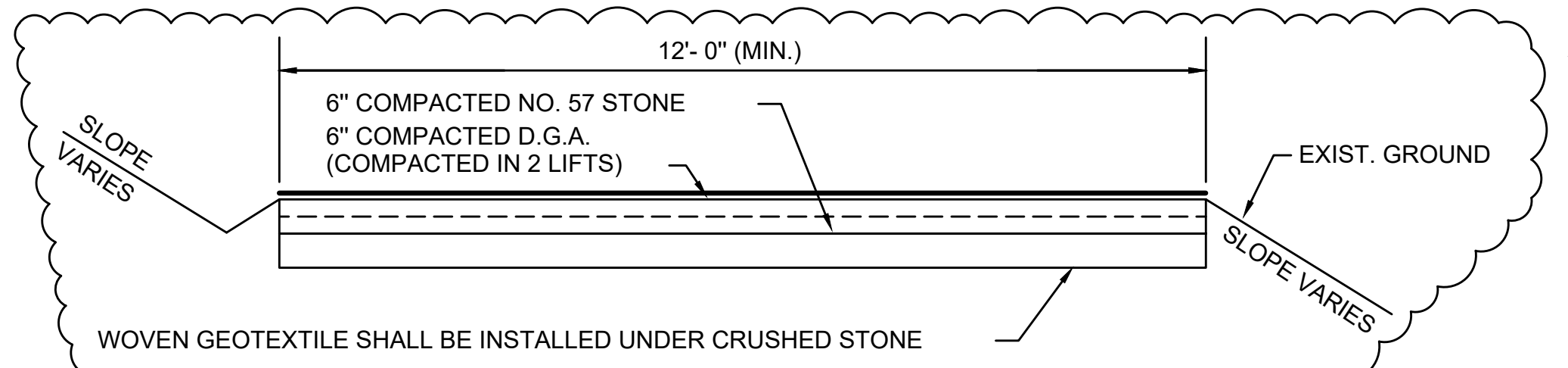


DOUBLE SWING GATE
NOT TO SCALE



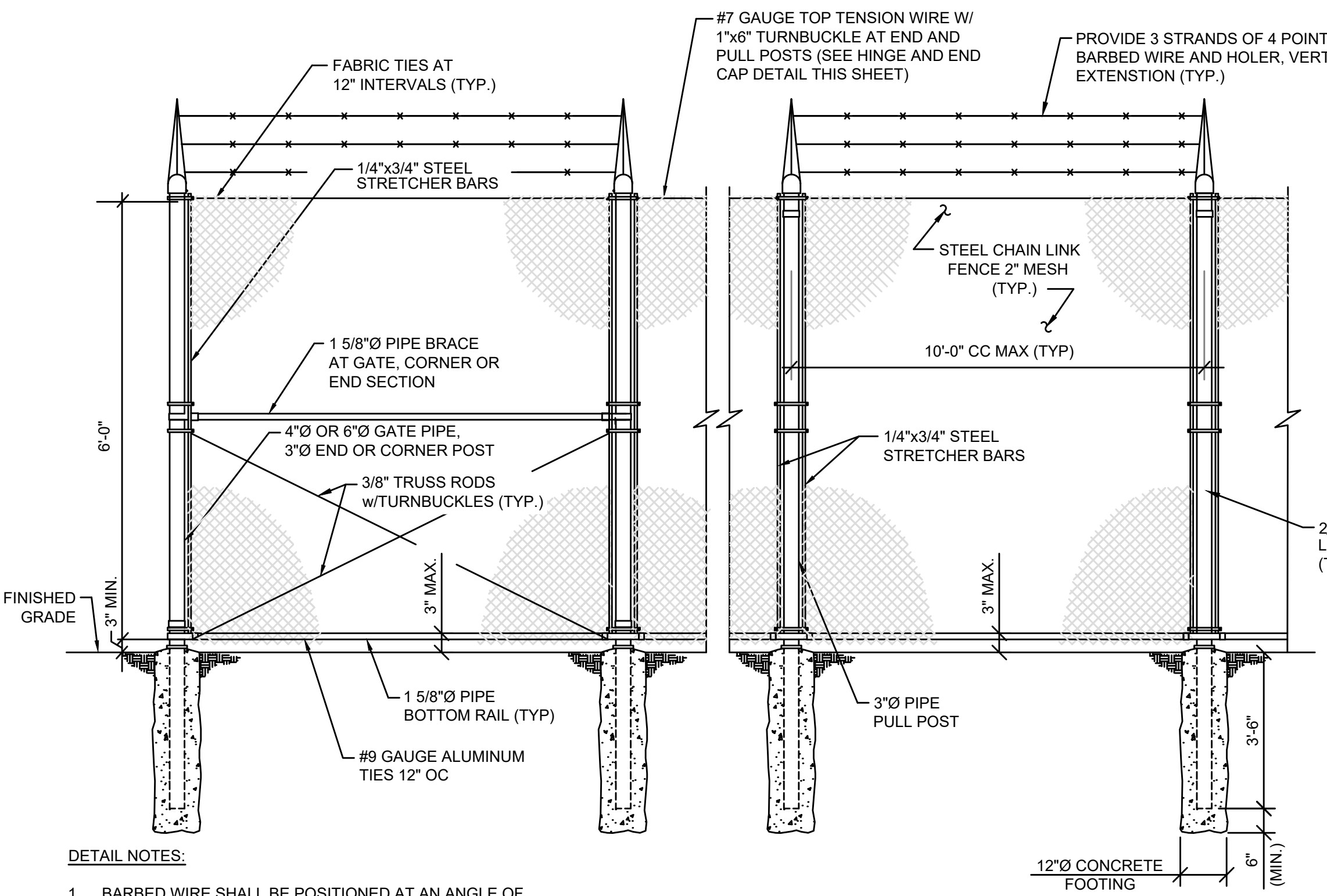
MAN GATE
NOT TO SCALE

- NOTES:
- MISCELLANEOUS HARDWARE SIMILAR TO THAT USED IN LINE FENCE.
 - SUBMIT SHOP DRAWINGS FOR APPROVAL.



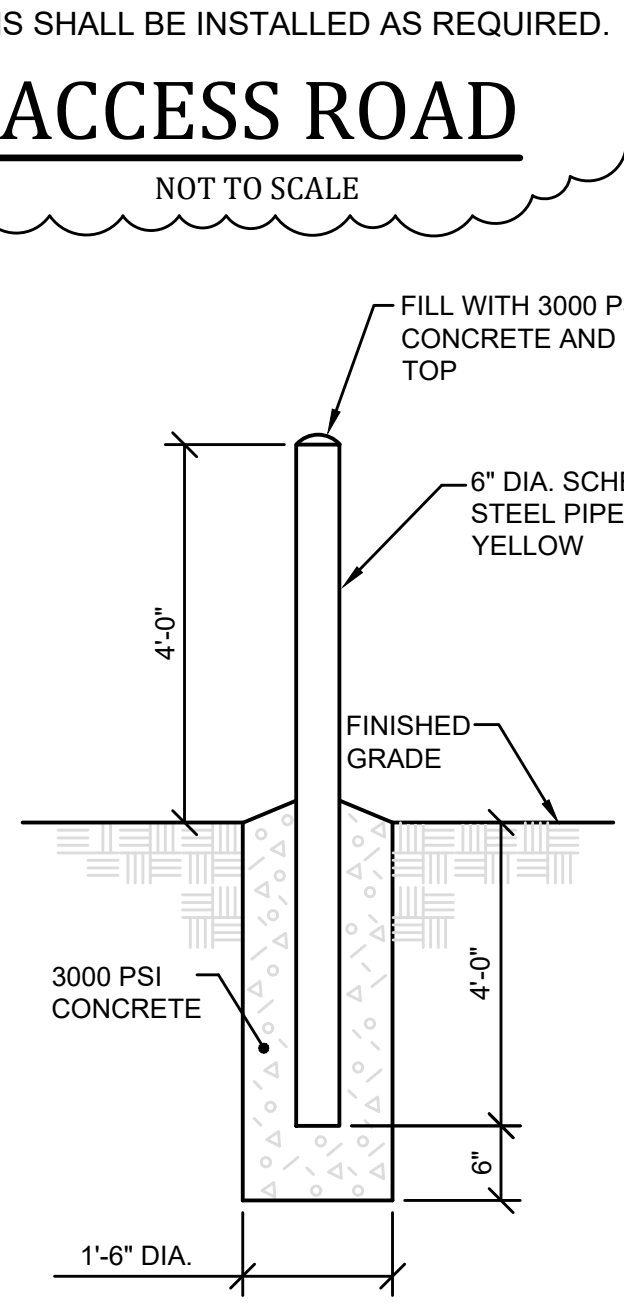
- NOTES:
- ACCESS ROAD TO BE SLOPED TO DRAIN.
 - REMOVE TOPSOIL TO A MINIMUM DEPTH OF 10\".
 - COMPACT EXISTING SUBGRADE TO 95% STD. PROCTOR.
 - CROSS DRAINS SHALL BE INSTALLED AS REQUIRED.

ACCESS ROAD
NOT TO SCALE

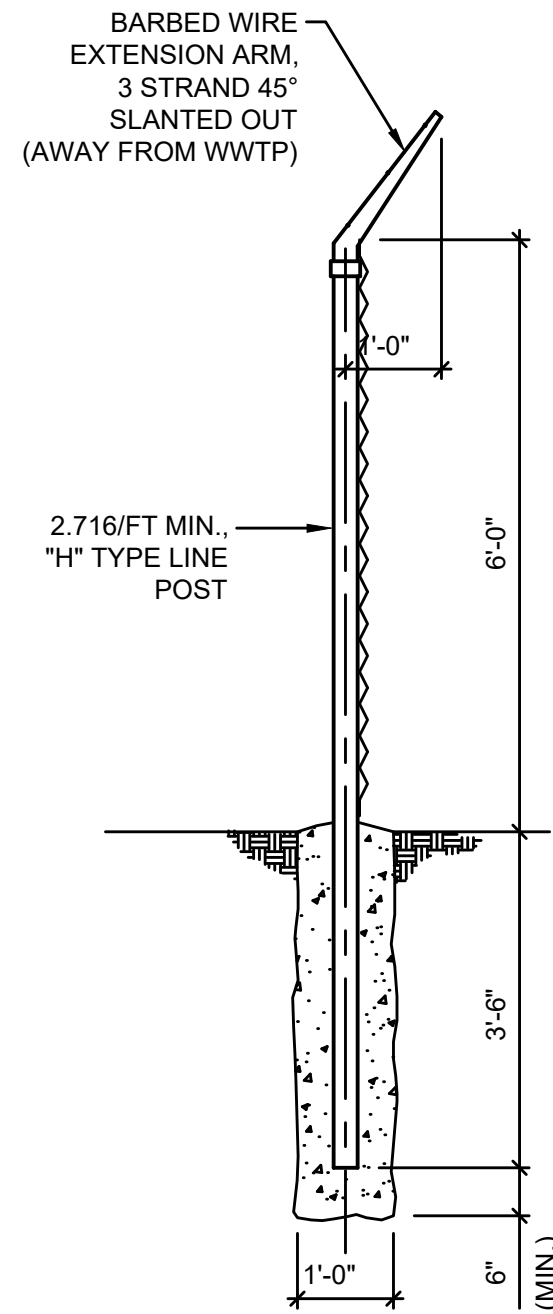


- DETAIL NOTES:
- BARBED WIRE SHALL BE POSITIONED AT AN ANGLE OF 45 DEGREES AWAY FROM THE WTP.
 - CHAINLINK FENCE SHALL MATCH EXISTING FENCE.

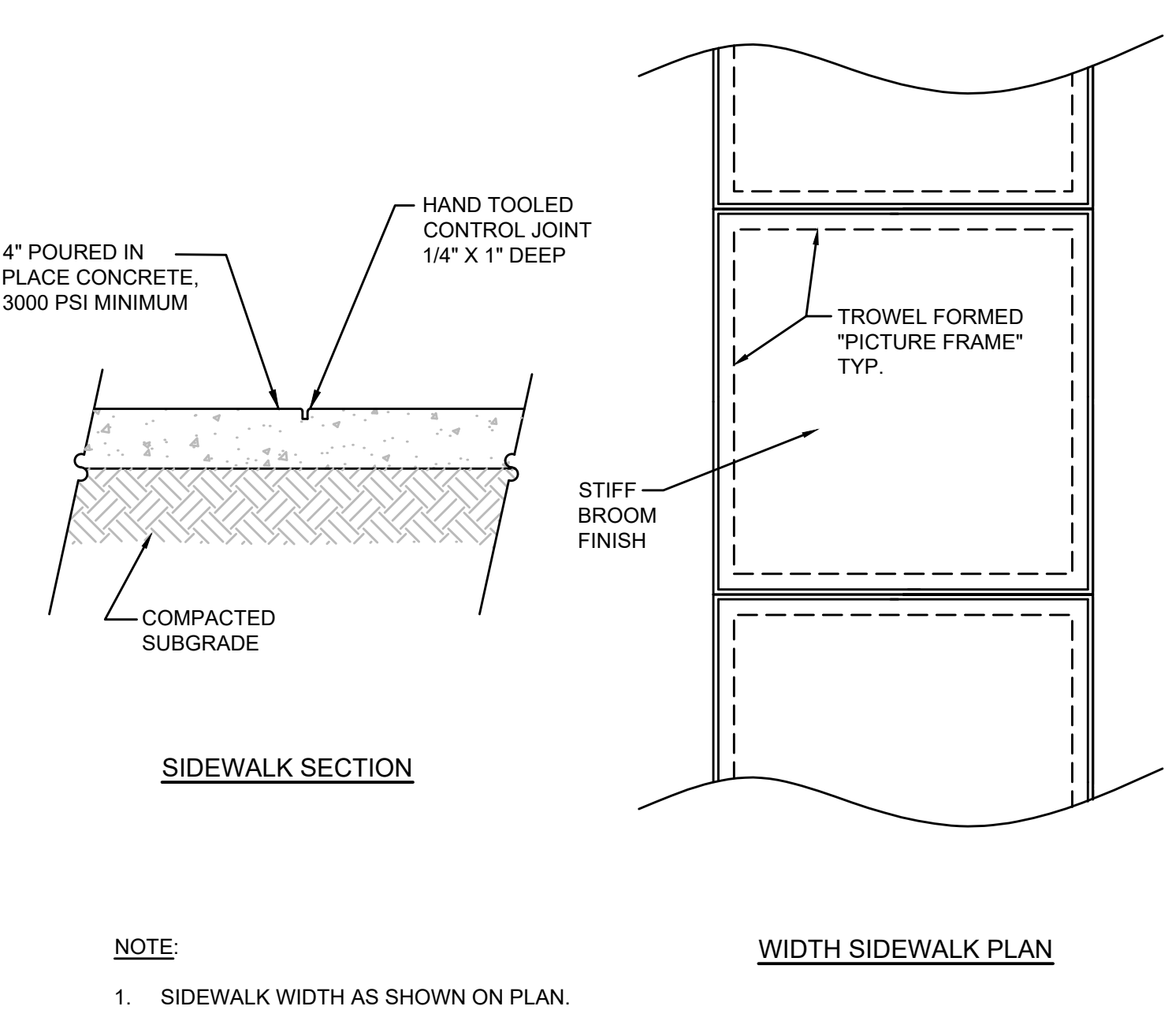
SECURITY FENCE
NOT TO SCALE



BOLLARD
NOT TO SCALE



FENCLINE POST
NOT TO SCALE



- NOTE:
- SIDEWALK WIDTH AS SHOWN ON PLAN.

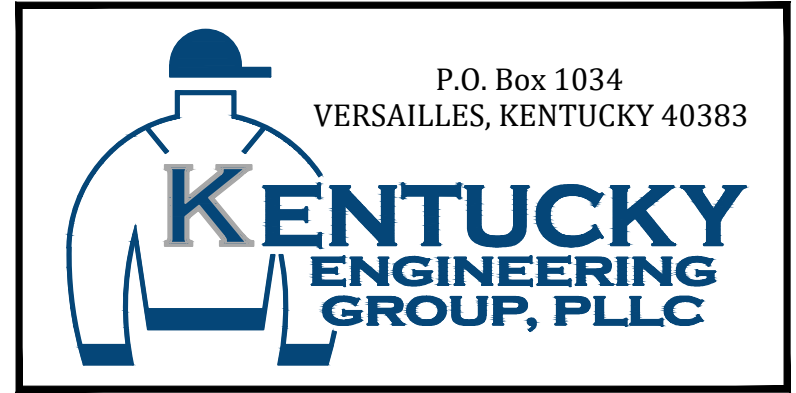
CONCRETE SIDEWALK
NOT TO SCALE

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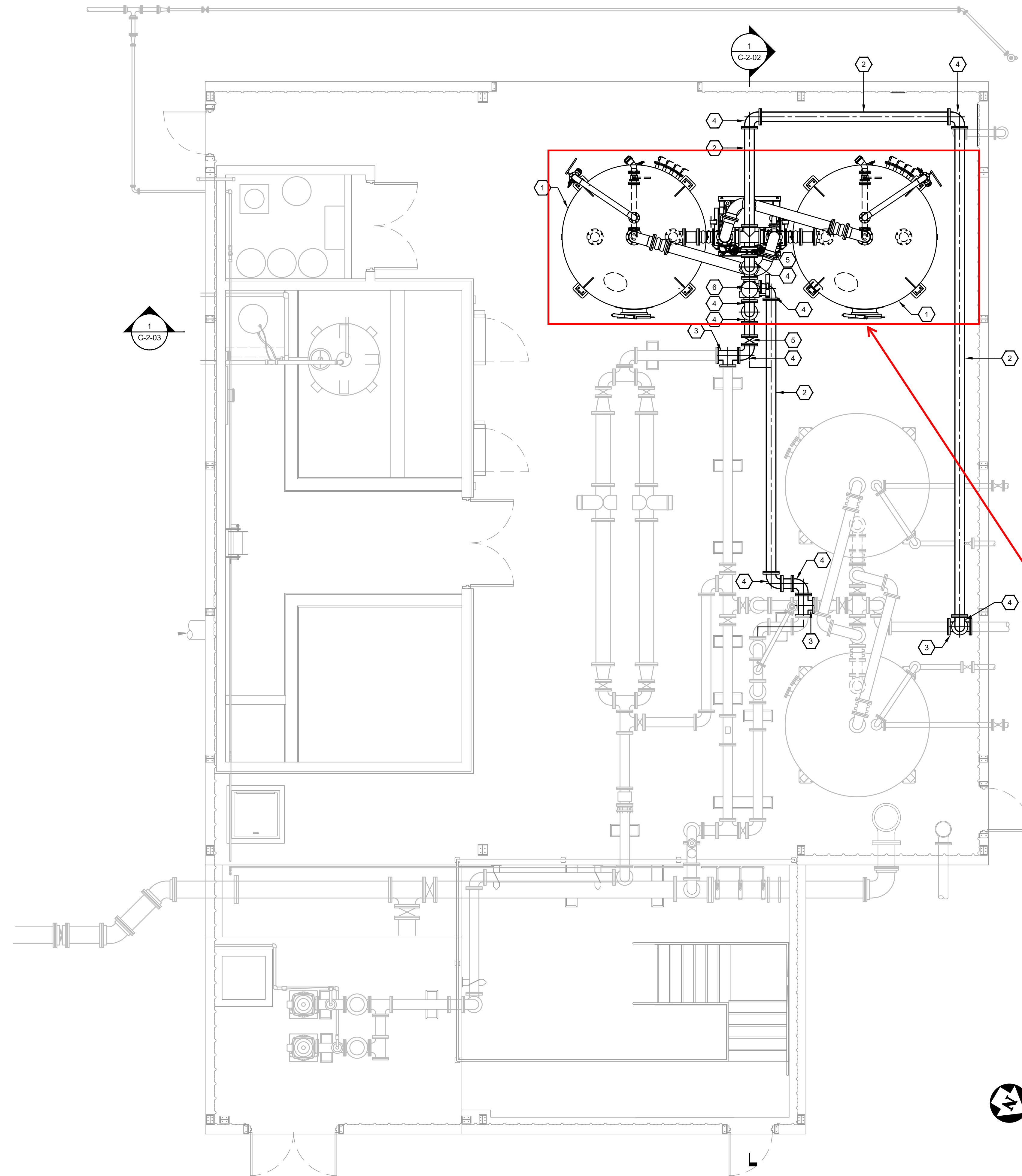
CONTRACT No. 7
WATER TREATMENT PLANT IMPROVEMENTS
FOR THE
GRAYSON COUNTY WATER DISTRICT

STANDARD DETAILS

PROJECT NO. 20016-07
SHEET NO. SD-0-01

BID DOCUMENTS

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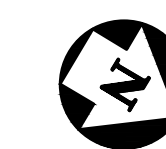
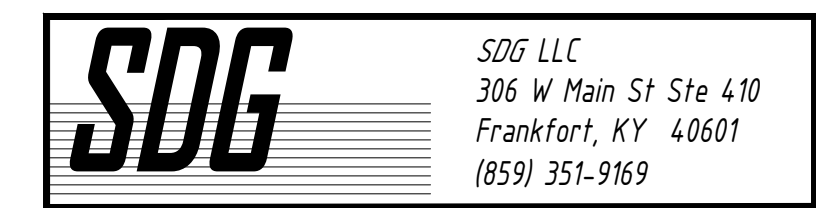
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2. 8" DI PIPE
3. 8" DI TEE
4. 8" DI 90° ELBOW
5. 8" BUTTERFLY VALVE
6. 8" SWING CHECK VALVE

4" STRUCTURAL HOUSEKEEPING PAD w/ #6 at 6" O.C. LONG WAY CNTRD
 - 180 DEG HOOKS EA END OF LONG BARS
 - ROUGHEN EXISTING CONCRETE TO 1/4" AVERAGE AMPLITUDE
 - APPLY EPOXY BONDING AGENT BEFORE PLACING NEW CONCRETE
 - PAD IS 10'-0" WIDE CENTERED UNDER TANKS
 - EXTEND PAD ALL THE WAY TO THE WALL ON THE RIGHT
 - EXTEND PAD 21" PAST TANK FEET ON THE LEFT



SEAL ONLY FOR
 STRUCTURAL PAD
 DENOTED WITH
 RED TEXT IN BOX



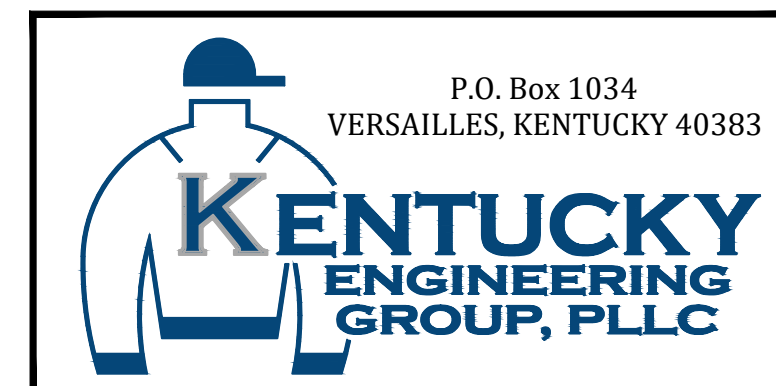
**GAC BUILDING
 FLOOR PLAN**

SCALE: 1/4"=1'-0" 0 2' 4' 8'

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GAC BUILDING
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 STRUCTURAL

PROJECT NO.
 20016-07

SHEET NO.
 S-01

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