

# **CONTRACT DOCUMENTS AND SPECIFICATIONS**

**FOR**

**Hartland 2 Pump Station Upgrades**

**Wastewater System Improvements  
Division of Water Quality  
Lexington Fayette Urban County Government**

**Remedial Measures Project ID No. EH-18**

**LFUCG Bid No. 67-2022**

**Date: May 2022**

**PREPARED BY:**

**Bell Engineering  
2480 Fortune Drive  
Suite 350  
Lexington, Kentucky 40509**

**GRW  
801 Corporate Drive  
Lexington, Kentucky 40503**

**Edition: CONTRACT SET**

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## SECTION 00100 - ADVERTISEMENT FOR BIDS

### 1.01 INVITATION

Sealed proposals for the following work will be received by the Lexington-Fayette Urban County Government (LFUCG) via Ion Wave (<https://lexingtonky.ionwave.net>) until 10:00 a.m., local time, Thursday, July 21, 2022, for furnishing all labor and/or materials and performing all work as set forth in the Contract Documents prepared by and for Lexington-Fayette Urban County Government, Division of Water Quality (OWNER). All forms and Contract Documents normally filled out and attached with bid submission may be downloaded from Lynn Imaging's Planroom and may be viewed on Ion Wave. All notary requirements are waived for this solicitation. A copy of bid bond must be included with submission. Immediately following the scheduled closing time for reception of Bids, all proposals which have been submitted in accordance with the above will be opened electronically and a bid tab sheet will be posted on Ion Wave within approximately 30 mins.

**Due to the current environment and recommendations for social distancing, LFUCG will only be accepting bids on-line through Ion Wave for this solicitation. Base bid and alternate totals (if required) should be provided on the appropriate line items tab on Ion Wave. Submissions without line item totals (if required) may be rejected and deemed non-responsive. THESE INSTRUCTIONS SUPERCEDE ALL OTHER BID SUBMISSION INSTRUCTIONS PROVIDED IN THIS PACKAGE. PLEASE SUBMIT ALL QUESTIONS VIA THE Q&A MODULE ON ION WAVE.**

### 1.02 DESCRIPTION OF WORK

The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment.

### 1.03 OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Plans, Specifications, and Contract Documents shall be obtained from Lynn Imaging, 328 Old Vine Street, Lexington, KY 40507, (859) 255-1021 or ([www.lynnimaging.com](http://www.lynnimaging.com)) and click on planroom for a non-refundable price of reproduction for each full set of plans and documents. Bids must be submitted through LFUCG's Ion Wave. Due to current environment and recommendations for social distancing, no Contract Documents may be examined in person.

### 1.04 METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a lump sum and line item unit price basis. Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Information Available to Bidders and Bid Form.

Bids should be submitted online via Ion Wave.

### 1.05 METHOD OF AWARD

Determination of the successful Bid will be based on the lowest responsive and responsible Bidder whose qualifications indicate the award will be in the best interest of the OWNER and whose Bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER

reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. The OWNER reserves the right to reject the Bid of any Bidder that is deemed to be unbalanced or front loaded. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

#### **1.06 BID WITHDRAWAL**

No Bidder may withdraw his Bid for a period of ninety (90) calendar days after the closing date for receipt of Bids. Errors and omissions will not be cause for withdrawal of Bid without forfeit of Bid Bond.

#### **1.07 BID SECURITY**

All Bids shall be accompanied by a Bid Bond of not less than five percent (5%) of the amount of the Bid executed by a Surety Company authorized to do business in the Commonwealth of Kentucky and countersigned by a licensed Kentucky Resident Agent, representing the Surety Company. Certified Check or Bid Bond shall be payable to Lexington-Fayette Urban County Government. Bid Bonds are not required for bids under \$50,000. A cashier's check or irrevocable letter of credit is an acceptable form of bid security.

A scanned copy of the bid bond is acceptable and must be uploaded with the bid through Ion Wave.

#### **1.08 SUBMISSION OF BIDS**

Contractors shall submit their Bids via Ion Wave not later than 10:00 a.m., local time, Thursday, July 21, 2022. Bids will remain sealed until 10:00 a.m., local time, Thursday, July 21, 2022, the official Bid closure time. Bids received after the scheduled closing time for receipt of Bids will not be considered.

#### **1.09 RIGHT TO REJECT**

The OWNER reserves the right to reject any and all Bids and to waive all informalities and/or technicalities where the best interest of the OWNER may be served.

#### **1.10 NOTIFICATION TO THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT FOR AFFIRMATIVE ACTION PLAN AND CURRENT WORKFORCE**

The successful bidder must submit the following to the OWNER:

1. Affirmative Action Plan for his/her firm.
2. Current Workforce Analysis Form

Failure to submit this as required herein may result in disqualification of the Bidder from the award of the contract.

#### **1.11 NOTICE CONCERNING MWDBE and Veteran Goals**

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

The OWNER has set a goal that not less than ten percent (10%) of the total value of this Contract be subcontracted to Disadvantaged Business Enterprises, which is made up of MBEs and WBEs, and set a goal that not less than three percent (3%) of the total value of this Contract be subcontracted to Veteran-Owned Small Businesses. The goals for the utilization of Disadvantaged Business Enterprises and Veteran-Owned Small Businesses as subcontractors are recommended goals. Contractor(s) who fail to meet such goals will be expected to provide written explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprise and Veteran-Owned Small Businesses as Subcontractors contact:

Sherita Miller, Division of Central Purchasing  
LFUCG  
200 East Main Street, 3rd Floor, Room 338  
Lexington, Kentucky 40507  
859-258-3323  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)

#### 1.12 PRE-BID MEETING AND SITE VISIT

A mandatory pre-Bid meeting will be held at 1:30 p.m., local time, Tuesday, July 5, 2022, via teleconference. A direct link to the Zoom meeting ID, and password will be issued in a future addendum. Following the virtual meeting, there will be a site visit at the existing Hartland 2 Pump Station at 3:00 p.m. local time, Tuesday, July 5, 2022. The gate will be opened to allow access to the station.

#### 1.13 CONSENT DECREE REQUIREMENTS

The work to be provided through this Bid will assist the OWNER in successfully implementing the Agreement (Contract) and complying with any requirements which are related to the CONSENT DECREE entered in a case styled *United States & Commonwealth of Kentucky v. Lexington-Fayette Urban County Government*, United States District Court for the Eastern District of Kentucky, Civil Action No. 5:06-cv-386-KSF (the "CONSENT DECREE"). The services provided through this Bid are hereinafter referred to as the Agreement (Contract). The primary goal of the Agreement (Contract) is to provide the owner with the technical support and/or construction services necessary to successfully meet the obligations and deadlines of the CONSENT DECREE.

The Bidder shall familiarize itself with and shall at all times comply with the CONSENT DECREE, and all federal, state and local laws, ordinances, and regulations that in any manner affect the Agreement (Contract). Time is of the essence in the performance of Agreement (Contract). Bidder is aware that the Owner is subject to penalties for non-compliance with the CONSENT DECREE deadlines.

If delays result solely by reason of acts of the Bidder, the Bidder shall be held liable for any financial penalties incurred by the Owner as a result of the delay, including but not limited to those assessed pursuant to the CONSENT DECREE. In the event the parties cannot mutually agree upon the cause(s) associated with the delays in completing project deliverables, the Bidder must immediately notify the Owner in the event of such delay, and provide the Owner a written action plan within five (5) business days on how it will attempt to resolve the delay.

In the event that Bidder's delay or other nonperformance of its obligations hereunder results in the imposition of penalties against the Owner pursuant to the CONSENT DECREE, or the Owner otherwise suffers damage as a result of such delay or nonperformance, Bidder shall be solely liable to Owner for any and all such damages, including any costs and attorney's fees.

An electronic version of the CONSENT DECREE is available on the LFUCG web page for review or to print a copy at no charge.

END OF SECTION

## **SECTION 00300 – INFORMATION AVAILABLE TO BIDDERS**

### **1.01 RECEIPT AND OPENING OF BIDS**

The Lexington-Fayette Urban County Government (herein called the OWNER) invites Bids from firms on the project described in the Advertisement for Bids. The OWNER will receive Bids online through Ion Wave (<https://lexingtonky.ionwave.net>) at the time and in the manner set forth in the Advertisement for Bids, at which time the bids will be opened electronically. The OWNER may consider informal any Bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all Bids. Any Bid may be withdrawn prior to the scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a Bid within ninety (90) days after the actual time and date of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid Security prior to that date.

The OWNER assumes no responsibility for Bids that are not submitted electronically as indicated above. Bids that are not submitted online by the stated time and date will be rejected.

### **1.02 PREPARATION OF BID**

Each Bid must be submitted on the prescribed digital Bid Form within Ion Wave. All blank spaces for the Bid prices must be filled in or the bid will be considered incomplete. Each Bid must be submitted online via Ion Wave.

### **1.03 SUBCONTRACTS**

The Bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on Bid Form. Prior to the award of Contract, the OWNER or the OWNER's representative will advise the Contractor of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the Contractor shall present a new name and/or firm to the OWNER at no change in the Contract Price.

### **1.04 QUALIFICATIONS OF BIDDER**

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the OWNER that such Bidder is properly qualified to carry out the obligations of the Agreement (Contract) and to complete the Work contemplated therein. Conditional Bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and alternatives and unit or lump sum prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. The contract, if awarded, will be awarded to the lowest, qualified, responsible Bidder based upon OWNER's evaluation which indicates that the award will be in the best interest of OWNER and the general public.

In the event there is any question as to the Bidder's qualifications and ability to complete the work, a final determination will be made in accordance with a fair evaluation by the OWNER of the following listed elements.

- A. If the OWNER requires filling out a detailed financial statement, the Bidder may provide its current certified financial statement(s) for the required time interval.

- B. Corporate firms are required to be registered and in good standing with the requirements and provisions of the Office of the Secretary of State, Commonwealth of Kentucky.
- C. Documents Required of Contractor - (1) A sworn statement signed by the President or owner of the Company regarding all current work in progress anywhere; (2) A document showing the percent of completion of each project and the total worth of each project; and (3) Documentation showing the percentage of the DBE employment levels on each project of the Bidder's current work force, and DBE participation levels for Subcontractors.
- D. Optional OWNER Requirements - The OWNER, at its discretion, may require the Bidder/Contractor to provide: (1) A current detailed financial statement for a period including up to 3 prior years. (2) Financial security or insurance in amounts and kinds acceptable to the OWNER to meet the financial responsibility requirements for the Contractor to indemnify the OWNER. (3) Additional information and/or DBE work force data, as well as DBE participation data.
- E. Each Bidder agrees to waive any claim it has or may have against the OWNER, the Architect/Engineer, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any Bid.

#### **1.05 BID SECURITY**

- A. Each Bid must be accompanied by a Bid bond prepared on a Form of Bid Bond and attached thereto, duly executed by the Bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the Bid. Such Bid bond will be returned to the unsuccessful Bidder(s) only upon written request to the Director of Central Purchasing within seven (7) days of opening of Bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.
- C. Electronic, scanned Bid bond(s) will be accepted and shall be uploaded to Ion Wave prior to close of bids.

#### **1.06 LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT**

The successful Bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his Bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his Bid.

#### **1.07 TIME OF COMPLETION AND LIQUIDATED DAMAGES**

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract Documents. Bidder must agree also to pay liquidated damages for each consecutive calendar day thereafter as specified in the Contract Documents.

## **1.08 EXAMINATION OF CONTRACT DOCUMENTS AND SITE**

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Engineer of all conflicts, errors or discrepancies in the Contract Documents.
- B. Bidders should examine the requirements of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this Article; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## **1.09 ADDENDA AND INTERPRETATIONS**

No interpretation of the meaning of the Contract Documents will be made to any Bidder orally. Every request for such interpretation should be submitted in writing via the Q&A module on Ion Wave. Addenda will be issued by the OWNER through Lynn Imaging's Planroom and posted to Ion Wave as needed. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. Acknowledgement of the receipt of addenda must be included with all submitted Bids. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under his Bid as submitted. All addenda so issued shall become part of the Contract Documents.

## **1.10 SECURITY FOR FAITHFUL PERFORMANCE**

- A. Simultaneously with the delivery of the executed Contracts, the Contractor shall furnish Performance, Payment, and Erosion and Sediment Control Bonds as security for the faithful performance of this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.
- B. The Contractor shall furnish the Warranty Bond upon completion of the Work, prior to the OWNER's release of the final payment.
- C. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverage's, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

- D. Contractor shall use standard Performance, Payment, Warranty, and Erosion and Sediment Control Bond forms such as documents provided with the Contract Documents or AIA form A312 (latest edition), for the Performance and Payment Bonds only.
- E. The Performance Bond shall be in the amount of one hundred percent (100%) of the Agreement (Contract) amount. The Payment Bond shall be in the amount of one hundred percent (100%) of the Agreement (Contract) amount. The Warranty Bond shall be in the amount of five percent (5%) of the final construction cost amount (based on contractor's final pay request). The Erosion and Sediment Control Performance Bond shall be in the amount of the Erosion and Sediment Control lump sum price in the Bid Form.

#### **1.11 POWER OF ATTORNEY**

Attorney-in-fact who signs Bid bonds or Contract bonds must file with each bond a certified and effectively dated copy of their Power of Attorney.

#### **1.12 TAXES AND WORKMEN'S COMPENSATION**

The Contractor and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law, such as social security measured by wages. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the Bid. The Contractor will not otherwise be reimbursed or compensated for such tax payments. The Contractor is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of this Contract.

#### **1.13 LAWS AND REGULATIONS**

The Bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, 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.

#### **1.14 EROSION AND SEDIMENT CONTROL AND PERMITS**

The Contractor and Subcontractors performing Work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in specifications herein.

#### **1.15 PREVAILING WAGE LAW AND MINIMUM HOURLY RATES**

There are no Federal or State prevailing wage rates for this Project.

#### **1.16 AFFIRMATIVE ACTION PLAN**

The successful Bidder must submit with their bid the following items to the Urban County Government (see section 00410 – Bid Form):

- A. Affirmative Action Plan of the firm
- B. Current Work Force Analysis Form
- C. Good Faith Effort Documentation to meet the MWDBE goals.
- D. List of Disadvantaged Business Enterprise Subcontractors and the Dollar Value of each Subcontract

A Work Force Analysis on the prescribed form shall be submitted for each Contract. Failure to submit these items as required herein may result in disqualification of the Bidder from award of the Contract.

All submissions should be attached to the Bidder's bid submission on Ion Wave.

#### **1.17 CONTRACT TIME**

The number of calendar days within which the Work is to be substantially completed and ready for final payment (the Contract Time) is set forth in the Bid Form and the Agreement (Contract).

#### **1.18 SUBSTITUTE OR "OR-EQUAL" ITEMS**

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by the Contractor if acceptable to the Engineer and OWNER, application for such acceptance will not be considered by the Engineer and OWNER until after the effective date of the Agreement (Contract). The procedure for submission of any such application by the Contractor and consideration by the Engineer and OWNER is set forth in the General Conditions.

#### **1.19 EQUIPMENT MANUFACTURERS LIST**

The Equipment Manufacturers identified in the Equipment Manufacturers List are the only equipment manufacturers/suppliers to be considered in the Bid. There are and will be no other equals considered during the bidding phase for these equipment items. The Contractor may select any of the listed manufacturers for each item and must circle the selected manufacturer for each item at the time of Bid submission.

The design was completed based on the first listed manufacturer. The Contractor, at no cost to the OWNER, will be responsible for any changes to the structures, piping, electrical, instrumentation, or other to accommodate any required changes should a vendor other than the first listed be selected in the bid. This will include payment to the Engineer of Record for any required redesign.

#### **1.20 ALTERNATE BIDS**

**Bidders shall submit alternate Bids/proposals only if and when such alternate Bids/proposals have been specifically requested in an Advertisement for Bids.** If alternate Bids/proposals are requested in an Advertisement for Bids, the form of submission of such alternate Bid and the conditions under which such alternate Bids will be considered for award of a contract will be established in the Advertisement.

Any Bidder who submits a Bid incorporating an alternate proposal when alternate Bids/proposals have not been requested in the Advertisement for Bids shall have his/her Bid rejected as non-responsive.

Any Bidder who submits a Bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Advertisement for Bids), or which imposes conditions for acceptance other than those established in the Advertisement for Bids, shall have their Bid rejected as non-responsive.

#### **1.21 SIGNING OF AGREEMENT (CONTRACT)**

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement (Contract) with all other written Contract Documents attached. Within ten days thereafter, Contractor shall sign and deliver the required number of counterparts of the Agreement (Contract) and attached documents to OWNER with the required Bonds, Certificate of

Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to Contractor at such time as it has been signed by the Mayor.

## 1.22 ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) CONTRACTORS

### A. Outreach for MWDBE(s)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and organizations. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at <https://lexingtonky.ionwave.net>. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE contractor database, please contact:

Sherita Miller, Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street, Room 338  
Lexington, Kentucky 40507  
859-258-3323  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)

### B. Bid Bond Assistance for MWDBE(s)

For those MWDBE contractors who wish to bid on LFUCG project, bid bond assistance is available. This bid bond assistance is in the form of a "Letter of Certification" which is accepted by the LFUCG's Division of Purchasing, in lieu of a bid bond. The "Letter of Certification" must be included in the bid package when it is submitted to the Division of Purchasing electronically. The "Letter of Certification" will reference the specific project for which the bid is being submitted, and the time and date on which the bid is due. Bid bond assistance must be requested from the Lexington-Fayette Urban County Government's Division of Central Purchasing.

### C. Eligibility for Bid Bond Assistance for MWDBE(s)

In order to be eligible for any Bid bonding assistance, a MWDBE construction company must be owned or controlled at the level of 51% or more by a member or members of a minority group or females. Prior to receiving assistance, a statement providing evidence of ownership and control of the company by a member or members of a minority group or females must be signed by the Owner or corporate officer and by an attorney or accountant submitted to:

Sherita Miller, Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street, Room 338  
Lexington, Kentucky 40507  
859-258-3323  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)

### D. MWDBE and Veteran Subcontractors

The LFUCG will, upon request, assist prime contractors in the procurement of eligible DBE and Veteran subcontractors in an effort to achieve 10% minimum MWDBE goal and to achieve 3% minimum Veteran goal.

For a list of eligible subcontractors, please contact:

Sherita Miller, Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street, Room 338  
Lexington, Kentucky 40507  
859-258-3323  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)

## 1.23 MWDBE PARTICIPATION GOALS

### GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

### B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
  - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

### C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by one or more women.
- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by a person(s) that are economically and socially disadvantaged.
- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned, managed and controlled by a veteran and/or a service disabled veteran.

- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled "MWDBE Participation Form". The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form." The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.
- 2) Bidders not reaching the Goal must submit the "MWDBE Participation Form", the "Quote Summary Form" and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter "None" on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
  - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
  - b. Included documentation of advertising in the above publications with the bidders good faith efforts package
  - c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
  - d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities
  - e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
  - f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
  - g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
  - g. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs and/or Veteran-Owned businesses soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

h. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.

j. Provided the interested MWBDE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

**Note:** Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

## 1.24 MINORITY BUSINESS ENTERPRISE PROGRAM



### MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA  
Minority Business Enterprise Liaison  
Division of Central Purchasing  
Lexington-Fayette Urban County Government  
200 East Main Street  
Lexington, KY 40507  
[smiller@lexingtonky.gov](mailto:smiller@lexingtonky.gov)  
859-258-3323

**OUR MISSION:** The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented Resolution 484-2017 – A Certified Minority, Women and Disadvantaged Business Enterprise ten percent (10%) minimum goal and a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and Certified Service Disabled Veteran – Owned Businesses for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals (a full copy is available in Central Purchasing):

***Certified Disadvantaged Business Enterprise (DBE)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as defined by 49 CFR subpart 26.

***Certified Minority Business Enterprise (MBE)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. African American, Asian American/Pacific Islander, Hispanic Islander, Native American/Native Alaskan Indian) as defined in federal law or regulation as it may be amended from time-to-time.

***Certified Women Business Enterprise (WBE)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

***Certified Veteran-Owned Small Business (VOSB)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

***Certified Service Disabled Veteran Owned Small Business (SDVOSB)*** – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term “Certified” shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Purchasing as having the appropriate credentials to make a determination as to the status of the business.

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in (<https://lexingtonky.ionwave.net>)

<b>Business</b>	<b>Contact</b>	<b>Email Address</b>	<b>Phone</b>
<b>LFUCG</b>	Sherita Miller	<a href="mailto:smiller@lexingtonky.gov">smiller@lexingtonky.gov</a>	859-258-3323
<b>Commerce Lexington – Minority Business Development</b>	Tyrone Tyra	<a href="mailto:ttyra@commercelexington.com">ttyra@commercelexington.com</a>	859-226-1625
<b>Tri-State Minority Supplier Diversity Council</b>	Susan Marston	<a href="mailto:smarston@tsmsdc.com">smarston@tsmsdc.com</a>	502-365-9762
<b>Small Business Development Council</b>	Scarlett Consalvi UK SBDC	<a href="mailto:sconsalvi@uky.edu">sconsalvi@uky.edu</a>	859-257-7666
<b>Community Ventures Corporation</b>	Phyllis Alcorn	<a href="mailto:palcorn@cvky.org">palcorn@cvky.org</a>	859-231-0054
<b>KY Transportation Cabinet (KYTC)</b>	Melvin Bynes	<a href="mailto:Melvin.bynes2@ky.gov">Melvin.bynes2@ky.gov</a>	502-564-3601
<b>KYTC Pre-Qualification</b>	Shella Eagle	<a href="mailto:Shella.Eagle@ky.gov">Shella.Eagle@ky.gov</a>	502-782-4815
<b>Ohio River Valley Women’s Business Council (WBENC)</b>	Sheila Mixon	<a href="mailto:smixon@orwbc.org">smixon@orwbc.org</a>	513-487-6537
<b>Kentucky MWBE Certification Program</b>	Yvette Smith, Kentucky Finance Cabinet	<a href="mailto:Yvette.Smith@ky.gov">Yvette.Smith@ky.gov</a>	502-564-8099
<b>National Women Business Owner’s Council (NWBOC)</b>	Janet Harris-Lange	<a href="mailto:janet@nwbo.org">janet@nwbo.org</a>	800-675-5066
<b>Small Business Administration</b>	Robert Coffey	<a href="mailto:robertcoffey@sba.gov">robertcoffey@sba.gov</a>	502-582-5971
<b>La Voz de Kentucky</b>	Andres Cruz	<a href="mailto:lavozdeky@yahoo.com">lavozdeky@yahoo.com</a>	859-621-2106
<b>The Key News Journal</b>	Patrice Muhammad	<a href="mailto:production@keynewsjournal.com">production@keynewsjournal.com</a>	859-685-8488



**LFUCG MWDBE PARTICIPATION FORM**

**Bid/RFP/Quote Reference # \_\_\_\_\_**

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**



**LFUCG MWDBE SUBSTITUTION FORM**

**Bid/RFP/Quote Reference # \_\_\_\_\_**

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**



**MWDBE QUOTE SUMMARY FORM**

Bid/RFP/Quote Reference # \_\_\_\_\_

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

<b>Company Name</b>	<b>Contact Person</b>
<b>Address/Phone/Email</b>	<b>Bid Package / Bid Date</b>

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc.)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**



## LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # \_\_\_\_\_

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

\_\_\_\_\_ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

\_\_\_\_\_ Included documentation of advertising in the above publications with the bidders good faith efforts package

\_\_\_\_\_ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

\_\_\_\_\_ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

\_\_\_\_\_ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

\_\_\_\_\_ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

\_\_\_\_\_ Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

\_\_\_\_\_ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

\_\_\_\_\_ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

\_\_\_\_\_ Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

\_\_\_\_\_ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation,

even when the prime contractor may otherwise perform these work items with its own workforce

\_\_\_\_\_ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

\_\_\_\_\_ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

\_\_\_\_\_ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

\_\_\_\_\_ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

\_\_\_\_\_ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

\_\_\_\_\_ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

**NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.**

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

\_\_\_\_\_  
**Company**

\_\_\_\_\_  
**Company Representative**

\_\_\_\_\_  
**Date**

\_\_\_\_\_  
**Title**

**1.25 OWNER PERMITS**

Bidder shall refer to Section 00890 regarding permits that have been obtained by the OWNER.

END OF SECTION

SECTION 00410 – BID FORM

HARTLAND 2 PUMP STATION UPGRADES

Division of Water Quality  
Lexington-Fayette Urban County Government

LFUCG Bid No. 67-2022

1.01 GENERAL

Place: Lexington, Kentucky

Date: 7/21/22

The following Bid Form shall be followed exactly in submitting a Bid for this Work.

This Bid Form Submitted by Herrick Company, Inc.

2176 Waddy Rd, Lawrenceburg, KY 40342

(Name and Address of Bidder)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of Kentucky, doing business as a corporation.

"a corporation," "a partnership", or an "individual" as applicable

To: Lexington-Fayette Urban County Government

(Hereinafter called "Owner")  
Office of the Director of Central Purchasing  
200 East Main Street, Room 338  
Lexington, KY 40507

The Bidder, in compliance with your Advertisement for Bids for the **Hartland 2 Pump Station Upgrades**; Lexington, Kentucky, having examined the Contract Documents including the Plans and Specifications with related documents, having examined the site for proposed Work, and being familiar with all of the conditions and any and all addendums surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this Bid is a part.

The Bidder hereby agrees to commence Work under this Contract on a date to be specified in a written "Notice to Proceed" of the Owner and to substantially complete the Project within **270** calendar days to substantial completion and **300** calendar days to final completion. Bidder further agrees to pay liquidated damages, as set forth in Section 00520, Agreement, for each consecutive day thereafter.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. 1 Date 6/29/22; Addendum No.      Date           

Addendum No. 2 Date 7/14/22; Addendum No.      Date           

Addendum No.      Date           ; Addendum No.      Date           

Addendum No.      Date           ; Addendum No.      Date           

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

1.02 LEGAL STATUS OF BIDDER

Bidder Herrick Company, Inc.

Date 7/21/22

\*A. A corporation duly organized and doing business under the laws of the State of KY, for whom Donna S. Herrick bearing the official title of Chief Executive Officer, whose signature is affixed to this Bid is duly authorized to execute contracts.

~~\*B. A Partnership, all of the members of which, with addresses are: (Designate general partners as such)~~

~~\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_~~

~~\*C. An individual, whose signature is affixed to this Bid. (Print name)~~

~~\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_~~

\* The Bidder shall fill out the appropriate form and strike out the other two.

1.03 BIDDERS AFFIDAVIT

Comes the Affiant, Donna S. Herrick, and after being first duly sworn, states under penalty of perjury as follows:

- A. His/her name is Donna S. Herrick and he/she is the individual submitting the Bid or is the authorized representative of Herrick Company, Inc. the entity submitting the Bid (hereinafter referred to as "Bidder").
- B. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the Bid is submitted, prior to award of the Agreement and will maintain a "current" status in regard to those taxes and fees during the life of the Agreement.
- C. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the Agreement.
- D. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
- E. Bidder has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of an Agreement to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.
- F. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as the "Ethics Act."
- G. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his/her conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught.

Donna S. Herrick  
Affiant Signature

STATE OF Kentucky  
COUNTY OF Anderson

The foregoing instrument was subscribed, sworn to and acknowledged before me by

Donna S. Herrick on this the 21st day of July, 2022.

My Commission expires: 5/8/26 Ryan P. Gabbard



Ryan P. Gabbard  
NOTARY PUBLIC, STATE AT LARGE

#### 1.04 BID SCHEDULE

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following proposed lump sum and/or unit prices, if applicable, which shall include the furnishing of all labor, materials, supplies, equipment and/or vehicle usage, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved, within the time set forth herein. All pricing must be submitted correctly in Ionwave to reflect the correct total of your bid. Contractors are responsible for this if items are entered incorrectly your bid will be rejected. Please pay close attention to how the units are specified and enter the unit amounts. Ionwave will calculate the totals and the total bid amount.

The LFUCG's decision on the bid amount is final.

The Contract, if awarded, will be on the basis of materials and equipment specified in the Specifications without consideration of possible substitute or "or equal" items. 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. Determination of the actual quantities and classification of unit price work performed by the Contractor will be made by the Engineer in accordance with the General Conditions.

**BID SCHEDULE**

Item	Description	Qty	Unit	Unit Price	Item Price
1	Mobilization	1	LS	6,000	6,000
2	Demobilization	1	LS	3,000	3,000
3	Bonds and Insurance	1	LS	13,000	13,000
4	Erosion and Sediment Control and Conformance with SWPPP	1	LS	200	200
5	General Site Improvement, Complete	1	LS	13,000	13,000
6	Pump Station Upgrades, Including Pumps, Guiderails, Controls, Electrical Improvements, Valves, Complete	1	LS	176,000	176,000
7	Bypass Pumping and Setup	1	LS	14,000	14,000
8	Dense Graded Aggregate (DGA), Extra, as Directed by Engineer	10	TON	20	200
9	No. 9 Crushed Stone, Extra as Directed by Engineer	10	TON	20	200
10	No. 57 Crushed Stone, Extra as Directed by Engineer	10	TON	20	200
11	No. 2 Crushed Stone, Extra as Directed by Engineer	10	TON	20	200
12	Allowance: Miscellaneous Site Improvements	1	LS	\$30,000.00	\$30,000.00
<b>TOTAL BASE BID (Items 1 thru 12)</b>					<b>256,000</b>
<b>TOTAL BID AMOUNT</b> <u>Two hundred, fifty-six thousand dollars and zero cents.</u>					

Respectfully Submitted,

FIRM: Herrick Company, Inc.  
ADDRESS: 2176 Waddy Rd  
CITY/STATE/ZIP: Lawrenceburg, KY 40342  
DATE: 7/21/22  
BY: *Donna S. Herrick*  
(must be original signature) Donna S. Herrick  
TITLE: Chief Executive Officer  
PHONE: 502-839-3484 FAX: 502-839-0939  
(area code, number & extension)  
EMAIL ADDRESS: hci@hci96.com

OFFICIAL ADDRESS AND PHONE:

2176 Waddy Rd.  
Lawrenceburg, KY 40342  
502-839-3484 (Seal if Bid is by Corporation)

By signing this form you agree to all of the terms and associated forms.

**1.05 STATEMENT OF BIDDER'S QUALIFICATIONS**

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Bid:

- A. Name of Bidder: Herrick Company, Inc.
- B. Permanent Place of Business: 2176 Waddy Rd, Lawrenceburg, KY 40342
- C. When Organized: 1996
- D. Where Incorporated: Kentucky
- E. Financial Condition:

If specifically requested by the Owner, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the Owner's Division of Central Purchasing within seven (7) calendar days following the Bid opening.

- F. In the event the Agreement is awarded to the undersigned, Performance, Payment, Erosion and Sediment Control, and Warranty bonds will be furnished by:

United Fire & Casualty Company (Surety)

Signed: Leigh McCarthy (Representative of Surety)  
 Leigh McCarthy, Attorney-in-Fact

- G. The following is a list of similar projects performed by the Bidder: (Attach separate sheet if necessary).

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
<u>*See attached.</u>		

- H. The Bidder has now under contract and bonded the following projects:

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>
<u>*See attached.</u>		



i. List Key Bidder Personnel who will work on this Project.

<u>NAME</u>	<u>POSITION DESCRIPTION</u>	<u>NO. OF YEARS WITH BIDDER</u>
*See attached.		

J. MWDBE Participation on current bonded projects under contract:

<u>SUBCONTRACTORS (LIST)</u>	<u>PROJECT (SPECIFIC TYPE)</u>	<u>MWDBE</u>	<u>% of WORK</u>
*See attached.			

(USE ADDITIONAL SHEETS IF NECESSARY)

K. We acknowledge that, if we are the apparent low Bidder, we may be required to submit to the Owner within seven (7) calendar days following the Bid Opening, a sworn statement regarding all office management and field management personnel. Additionally, if requested by the Owner, we will within seven (7) days following the request submit audited financial statements and loss history for insurance claims for the three (3) most recent years (or a lesser period if stipulated by the Owner)

1.06 LIST OF PROPOSED SUBCONTRACTORS

The following list of proposed subcontractors is required by the Owner to be executed, completed and submitted with the Bid Form. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of Bid.

<u>BRANCH OF WORK**</u> (List each major item)	<u>SUBCONTRACTOR</u>	<u>MWDBE (yes/no)</u>	<u>% of WORK</u>
1. <u>Electric</u>	Name: <u>Faust Electric</u>  Address: <u>1081 Sulphur Well Pike</u> <u>Nicholasville, KY 40356</u>	<u>No</u>	<u>16.5</u>
2. <u>Painting</u>	Name: <u>McKinney Painting</u>  Address: <u>104 Kuhlman Blvd</u> <u>Versailles, KY 40383</u>	<u>Yes</u>	<u>1.2</u>
3. _____	Name: _____  Address: _____ _____	_____	_____
4. _____	Name: _____  Address: _____ _____	_____	_____
5. _____	Name: _____  Address: _____ _____	_____	_____
6. _____	Name: _____  Address: _____ _____	_____	_____

\*\* Such as: Grading, bituminous paving, concrete, seeding and protection, construction staking, etc.

1.07 AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby swear (or affirm) under the penalty for false swearing:

- A. That I am the Bidder (if the Bidder is an individual), a partner of the Bidder (if the Bidder is a partnership), or an officer or employee of the Bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);
- B. That the attached Bid has been arrived at by the Bidder independently, and has been submitted without collusion with, and without any agreement, understanding or planned common course of action, with any other contractor, vendor of materials, supplies, equipment or services described in the Advertisement for Bid, designed to limit independent bidding or competition;
- C. That the contents of the Bid or Bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished, with the Bid or Bids, and will not be communicated to any such person, prior to the official opening of the Bid or Bids;
- D. That the Bidder is legally entitled to enter into the contracts with the Lexington-Fayette Urban County Government, and is not in violation of any prohibited conflict of interest;
- E. (Applicable to corporation only) That as a foreign corporation, we are registered with the Secretary of State, Commonwealth of Kentucky, and authorized to do business in the State \_\_\_\_\_ or, that as a domestic corporation, we are in good standing with the Secretary of State, Commonwealth of Kentucky \_\_\_\_\_. [Check the statement applicable.]
- F. This offer is for ninety (90) calendar days from the date this Bid is opened. In submitting the above, it is expressly agreed that, upon proper acceptance by the Lexington-Fayette Urban County Government of any or all items Bid above, an Agreement shall thereby be created with respect to the items accepted.
- G. That I have fully informed myself regarding the accuracy of the statements made in this statement.
- H. That I certify that Subcontractors have not and will not be awarded to any firm(s) that have been debarred from noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

Herrick Company, Inc.  
Company

7/21/22  
Date

Donna S. Herrick  
Representative Donna S. Herrick

\*See attached.

**1.08 STATEMENT OF EXPERIENCE**

NAME OF INDIVIDUAL: \_\_\_\_\_

POSITION/TITLE: \_\_\_\_\_

STATEMENT OF EXPERIENCE: \_\_\_\_\_

\_\_\_\_\_

NAME OF INDIVIDUAL: \_\_\_\_\_

POSITION/TITLE: \_\_\_\_\_

STATEMENT OF EXPERIENCE: \_\_\_\_\_

\_\_\_\_\_

NAME OF INDIVIDUAL: \_\_\_\_\_

POSITION/TITLE: \_\_\_\_\_

STATEMENT OF EXPERIENCE: \_\_\_\_\_

\_\_\_\_\_

NAME OF INDIVIDUAL: \_\_\_\_\_

POSITION/TITLE: \_\_\_\_\_

STATEMENT OF EXPERIENCE: \_\_\_\_\_

\_\_\_\_\_

\* Include all officers, office management, Affirmative Action officials, and field management personnel.  
Attach separate sheets if necessary.

1.09 EQUAL OPPORTUNITY AGREEMENT

The Law

- \* Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- \* Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- \* Section 503 of the Rehabilitation Act of 1973 States:

*The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.*

- \* Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- \* Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

*The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.*

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause an Agreement to be canceled and the contractor may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped, and aged persons.

Donna S. Herrick  
Signature Donna S. Herrick

Herrick Company, Inc.  
Name of Business

The Entity (regardless of whether construction Contractor, non-construction Contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any county, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

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

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.*

The Act further provides:

#### KRS 45.610. Hiring minorities - Information required

- (1) For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

#### KRS 45.620. Action against contractor - Hiring of minority contractor or subcontractor

- (1) If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 to 45.640.*
- (3) The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

*Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.*

KRS 45.640 Minimum skills

*Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.*

In the case of an Agreement exceeding \$250,000, the Contractor will be required within seven (7) days following the Bid Opening to furnish evidence that its work-force in Kentucky is representative of the available work-force in the area from which it draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the Contract.

1.10 LFUCG MWDBE PARTICIPATION FORM

LFUCG Bid/RFP/Quote Reference No. 67-2022



The MWDBE and/or Veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the Work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately.

MWDBE Company, Name, Address, Phone, Email	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
McKinney Painting, Matt Gamlin 104 Kuhlman Blvd Versailles, KY 40383 859-983-4515 matt@mckinneypainting.com	Painting	\$3000	1%

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the Contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Herrick Company, Inc.

Company

7/21/22

Date

*Donna S. Herrick*

Company Representative Donna S. Herrick

Chief Executive Officer

Title

1.11 LFUCG MWDBE SUBSTITUTION FORM

LFUCG Bid/RFP/Quote Reference No. 67-2022



The substituted MWDBE and/or Veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract

The undersigned acknowledges that any misrepresentation may result in termination of the Contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Herrick Company, Inc.  
Company

*Donna S. Herrick*  
Company Representative **Donna S. Herrick**

7/21/22  
Date

Chief Executive Officer  
Title

1.12 MWDBE QUOTE SUMMARY FORM

LFUCG Bid/RFP/Quote Reference No. 67-2022



The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project.

Company Name <b>Herrick Company, Inc</b>	Contact Person <b>Cody Lokits</b>
Address/Phone/Email <b>2176 Waddy Rd Lawrenceburg, KY 40342 502-839-3484 cody@hci96.com</b>	Bid Package / Bid Date <b>67-2022, 7/21/22</b>

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event, etc.)	Total dollars (\$) Do Not Leave Blank (Attach Documentation)	DBE * AA HA AS NA Female	Veteran
McKinney Painting Versailles, KY	Matt Gamlin	matt@ mckinneypain ting.com	7/1/22	Painting	Email	3000	WBE	No

\*(DBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the Contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Herrick Company, Inc.  
Company

*Donna S. Herrick*  
Company Representative **Donna S. Herrick**

7/21/22  
Date

Chief Executive Officer  
Title

\*Not applicable at this time.

1.13 LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

LFUCG Bid/RFP/Quote No. 67-2022



The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE vendors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Total Contract Amount Awarded to Prime Contractor for this Project \_\_\_\_\_

Project Name/ Contract #	Work Period/ From: _____ To: _____
Company Name:	Address: _____
Federal Tax ID:	Contact Person: _____

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the Contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

\_\_\_\_\_  
Company

\_\_\_\_\_  
Company Representative

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

1.14 LFUCG STATEMENT OF GOOD FAITH EFFORTS

LFUCG Bid/RFP/Quote No. 67-2022



By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBEs and/or Veterans on the project and can supply the appropriate documentation.

- Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms to participate.
- Included documentation of advertising in the above publications with the bidders good faith efforts package
- Attended LFUCG Central Purchasing Economic Inclusion Outreach event
- Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs of subcontracting opportunities
- Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms
- Requested a list of MWDBE subcontractors or suppliers from LFUCG Economic Engine and showed evidence of contacting the companies on the list(s).
- Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
- Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
- Followed up initial solicitations by contacting MWDBEs to determine their level of interest.
- Provided the interested MWDBE firm with adequate and timely information about the plans, specifications, and requirements of the contract.
- Selected portions of the work to be performed by MWDBE firms in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE participation, even when the prime contractor may otherwise perform these work items with its own workforce
- Negotiated in good faith with interested MWDBE firms not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
- Included documentation of quotations received from interested MWDBE firms which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

- \_\_\_\_\_ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE goals.
- \_\_\_\_\_ Made an effort to offer assistance to or refer interested MWDBE firms to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal
- \_\_\_\_\_ Made efforts to expand the search for MWBE firms beyond the usual geographic boundaries.
- X   Other - any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE participation.

Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement. Documentation of Good Faith Efforts are to be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Herrick Company, Inc.  
 \_\_\_\_\_  
 Company

*Donna S. Herrick*  
 \_\_\_\_\_  
 Company Representative Donna S. Herrick

7/21/22  
 \_\_\_\_\_  
 Date

Chief Executive Officer  
 \_\_\_\_\_  
 Title

1.15 EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of Herrick Company, Inc.  
(Name of Bidder)

to assure that all applicants for employment and all employees are treated on a fair and equitable basis without regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

Name of Organization: Herrick Company, Inc.

Categories	Total		White (not Hispanic or Latino)		Hispanic or Latino		Black or African-American (not Hispanic or Latino)		Native Hawaiian and other Pacific Islander (not Hispanic or Latino)		Asian (not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (not Hispanic or Latino)		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators	3	2	1														2	1
Professionals																		
Superintendents	4	4															4	
Supervisors																		
Foremen																		
Technicians																		
Protective Service																		
Para-Professionals	1	1															1	
Office/Clerical	2	2																2
Skilled Craft	14	14																14
Service/Maintenance																		
<b>Total</b>	<b>24</b>	<b>21</b>	<b>3</b>														<b>21</b>	<b>3</b>

Prepared By: Ryan P. Gabbard Date: 7 / 21 / 22  
 Ryan P. Gabbard, Project Manager

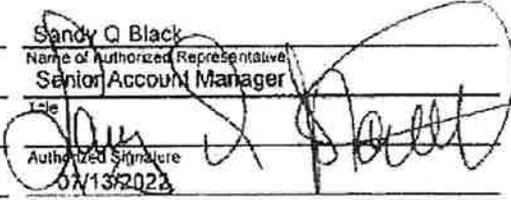
Named Insured: Herrick Company, Inc.  
 Address: 2176 Waddy Road, Lawrenceburg KY 40342  
 Project to be insured: Hartland 2 Pump Station Upgrades / LFUCG Bld No: 67-2022

In lieu of obtaining certificates of insurance at this time, the undersigned agrees to provide the above Named Insured with the minimum coverage listed below. These are outlined in the insurance and Risk Management of Section 00600 - Bonds and Certifications, including all requirements, and conditions.

Article Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided to Insured	Name of Insurer	A.M. Best's	
					Code	Rating
1.05.D.1	CGL	\$1,000,000/per occ., \$2,000,000/aggregate or \$2,000,000 combined single limit Requirements (a) through (e)	\$1,000,000 per OC \$2,000,000 Agg	Selective Insurance Company	XV	A+
1.05.D.1	Auto	Combined single \$1,000,000/per occ. aggregate Requirements (a) through (c)	\$1,000,000 per occ	Selective Insurance Company	XV	A+
1.05.D.1	WC	\$ <u>Statutory</u>	\$4,500,000 <del>\$4,500,000</del>	KY Assoc of General Contractors	VIII	A-
1.05.D.1	Employer's Liability	\$500,000	\$4,500,000			

Section 00600 includes required provisions, statements regarding insurance requirements, and the undersigned agrees to abide by all provisions for the coverage's checked above unless stated otherwise when submitting.

Marsh McLennan Agency  
 Agency or Brokerage  
360 East Vine Street 2nd Floor  
 Street Address  
Lexington KY 40588  
 City  
859-254-8023  
 Telephone Number

Sandy Q Black  
 Name of Authorized Representative  
Senior Account Manager  
 Title  
  
 Authorized Signature  
07/13/2022  
 Date

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.

**IMPORTANT: CONTRACT MAY NOT BE AWARDED IF A COMPLETED AND SIGNED COPY OF THIS FORM FOR ALL COVERAGES LISTED ABOVE IS NOT PROVIDED.**

1.18 DEBARRED FIRMS

PROJECT NAME: Hartland 2 Pump Station Upgrades

LFUCG BID NO.: 67-2022

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
LEXINGTON, KY

All prime Contractors shall certify that Subcontractors have not and will not be awarded to any firms that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

All Bidders shall complete the Debarment Certification in duplicate and submit both copies to the Owner with the Bid Form. The Owner (grantee) shall transmit one copy to the Lexington-Fayette Urban County Government, Division of Community Development within fourteen (14) days after Bid opening.

The undersigned hereby certifies that the firm of Herrick Company, Inc. has not and will not award a subcontract, in connection with any Agreement award to it as the result of this bid, to any firm that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964, Executive Order 11246 As Amended or any Federal Law.

Herrick Company, Inc.

Name of Firm Submitting Bid

Donna S. Herrick

Signature of Authorized Official Donna S. Herrick

Chief Executive Officer

Title

7/21/22

Date

1.18 DEBARRED FIRMS

PROJECT NAME: Hartland 2 Pump Station Upgrades

LFUCG BID NO.: 67-2022

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
LEXINGTON, KY

All prime Contractors shall certify that Subcontractors have not and will not be awarded to any firms that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

All Bidders shall complete the Debarment Certification in duplicate and submit both copies to the Owner with the Bid Form. The Owner (grantee) shall transmit one copy to the Lexington-Fayette Urban County Government, Division of Community Development within fourteen (14) days after Bid opening.

The undersigned hereby certifies that the firm of Herrick Company, Inc. has not and will not award a subcontract, in connection with any Agreement award to it as the result of this bid to any firm that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964, Executive Order 11246 As Amended or any Federal Law.

Herrick Company, Inc.

Name of Firm Submitting Bid

Donna S. Herrick  
Signature of Authorized Official **Donna S. Herrick**

Chief Executive Officer

Title

7/21/22

Date

1.19 DEBARMENT CERTIFICATION

All Contractors/Subcontractors shall complete this certification.

The Contractor/Subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.
  - a) Have not within a three year period preceding this Bid 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;
  - b) 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)(a) of this certification; and
  - c. Have not within a three (3) year period preceding this Bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.
- 2) Where the Contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: Herrick Company, Inc.

Project: Hartland 2 Pump Station Rehabilitation

Printed Name: Donna S. Herrick

Title of Authorized Representative: Chief Executive Officer

Signature: *Donna S. Herrick*

Date: 7/21/22

1.20 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 for not less than \$10,000 and not more than \$100,000 for each such failure.

Donna S. Herrick, Chief Executive Officer

Typed Name & Title of Authorized Representative

Donna S. Herrick  
 Signature of Authorized Representative

7/21/22

Date

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

1.21. BID BOND

BID BOND

Bond Number: N/A

KNOW ALL MEN BY THESE PRESENTS, that we Herrick Company, Inc.

as principal (the "Principal") and United Fire & Casualty Company

hereinto called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 East Main Street, Third Floor  
Lexington, Kentucky 40507

as obligee (the "Obligee"), in the penal sum of Five Percent (5%) of Bid Amount dollars for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for Hartland 2 Pump Station Upgrades

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal within the period specified therein, or, if no period be specified, within ninety (90) days after opening, and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or contract documents, or in the event of the failure of the Principal to enter into such contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference in money not to exceed the penal sum hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void; otherwise to remain in full force and effect. In no event shall the liability hereunder exceed the penal sum thereof.

PROVIDED AND SUBJECT TO THE CONDITION PRECEDENT, that any claim by Obligee under this bond must be submitted in writing by registered mail, to the attention of the Surety Law Department at the address above, within 120 days of the date of this bond. Any suit under this bond must be instituted before the expiration of one (1) year from the date of this bond. 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 apply.

DATED as of this 21st day of July, 2022

WITNESS / ATTEST:

[Signature]  
Principal (Secretary)  
*H. Douglas Herrick*

Herrick Company, Inc.  
Principal

By: [Signature] (seal)  
Name: [Name]  
Title: [Title]

[Signature]  
Surety (Secretary)

United Fire & Casualty Company  
Surety

By: [Signature] (seal)  
Name: Leigh McCarthy  
Title: Attorney-in-Fact





UNITED FIRE & CASUALTY COMPANY, CEDAR RAPIDS, IA  
 UNITED FIRE & INDEMNITY COMPANY, WEBSTER, TX  
 FINANCIAL PACIFIC INSURANCE COMPANY, LOS ANGELES, CA  
 CERTIFIED COPY OF POWER OF ATTORNEY  
 (original on file at Home Office of Company - See Certification)

Inquiries: Surety Department  
 118 Second Ave SE  
 Cedar Rapids, IA 52401

KNOW ALL PERSONS BY THESE PRESENTS, That United Fire & Casualty Company, a corporation duly organized and existing under the laws of the State of Iowa; United Fire & Indemnity Company, a corporation duly organized and existing under the laws of the State of Texas; and Financial Pacific Insurance Company, a corporation duly organized and existing under the laws of the State of California (herein collectively called the Companies), and having their corporate headquarters in Cedar Rapids, State of Iowa, does make, constitute and appoint

JAMES T. SMITH, JAMES E. MARTIN, BROOK T. SMITH, RAYMOND M. HUNDLEY, DEBORAH NEICHTER, MICHELE LACROSSE, JASON CROWWELL, LEIGH MCCARTHY, EACH INDIVIDUALLY

their true and lawful Attorney(s)-in-fact with power and authority hereby conferred to sign, seal and execute in its behalf all lawful bonds, undertakings and other obligatory instruments of similar nature provided that no single obligation shall exceed \$75,000,000.00 and to bind the Companies thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Companies and all of the acts of said Attorney, pursuant to the authority hereby given and hereby ratified and confirmed.

The Authority hereby granted shall expire the 23rd day of February, 2024 unless sooner revoked by United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

This Power of Attorney is made and executed pursuant to and by authority of the following bylaw duly adopted by the Boards of Directors of United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

"Article VI - Surety Bonds and Undertakings"

Section 2, Appointment of Attorney-in-fact. "The President or any Vice President, or any other officer of the Companies may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Companies in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. The signature of any officer authorized hereby, and the Corporate seal, may be affixed by facsimile to any power of attorney or special power of attorney or certification of either authorized hereby; such signature and seal, when so used, being adopted by the Companies as the original signature of such officer and the original seal of the Companies, to be valid and binding upon the Companies with the same force and effect as though manually affixed. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority shall have full power to bind the Companies by their signature and execution of any such instruments and to attach the seal of the Companies thereto. The President or any Vice President, the Board of Directors or any other officer of the Companies may at any time revoke all power and authority previously given to any attorney-in-fact.

IN WITNESS WHEREOF, the COMPANIES have each caused these presents to be signed by its vice president and its corporate seal to be hereto affixed this 23rd day of February, 2022

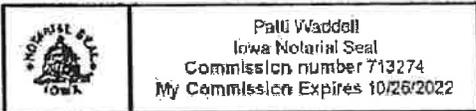
UNITED FIRE & CASUALTY COMPANY  
 UNITED FIRE & INDEMNITY COMPANY  
 FINANCIAL PACIFIC INSURANCE COMPANY

By: Dennis J. Richman  
 Vice President



State of Iowa, County of Linn, ss:

On 23rd day of February, 2022, before me personally came Dennis J. Richman to me known, who being by me duly sworn, did depose and say; that he resides in Cedar Rapids, State of Iowa; that he is a Vice President of United Fire & Casualty Company, a Vice President of United Fire & Indemnity Company, and a Vice President of Financial Pacific Insurance Company the corporations described in and which executed the above instrument; that he knows the seal of said corporations; 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 corporations and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.



Paul Waddell  
 Notary Public  
 My commission expires: 10/26/2022

I, Mary A. Bertsch, Assistant Secretary of United Fire & Casualty Company and Assistant Secretary of United Fire & Indemnity Company, and Assistant Secretary of Financial Pacific Insurance Company, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the bylaws and resolutions of said Corporations as set forth in said Power of Attorney, with the ORIGINALS ON FILE IN THE HOME OFFICE OF SAID CORPORATIONS, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

In testimony whereof I have herunto subscribed my name and affixed the corporate seal of the said Corporations this 21st day of July, 2022.



By: Mary A Bertsch  
 Assistant Secretary,  
 UF&C & UR&I & FPIC

MAYOR LINDA GORTON



LEXINGTON

TODD SLATIN  
DIRECTOR  
CENTRAL PURCHASING

United States, Louisville

2. DRAWINGS

N/A

Todd Slatin, Director  
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.  
This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Herrick Company, Inc.

ADDRESS: 2176 Waddy Rd, Lawrenceburg, KY 40342

SIGNATURE OF BIDDER: \_\_\_\_\_

Donna S. Herrick  
Donna S. Herrick, CEO

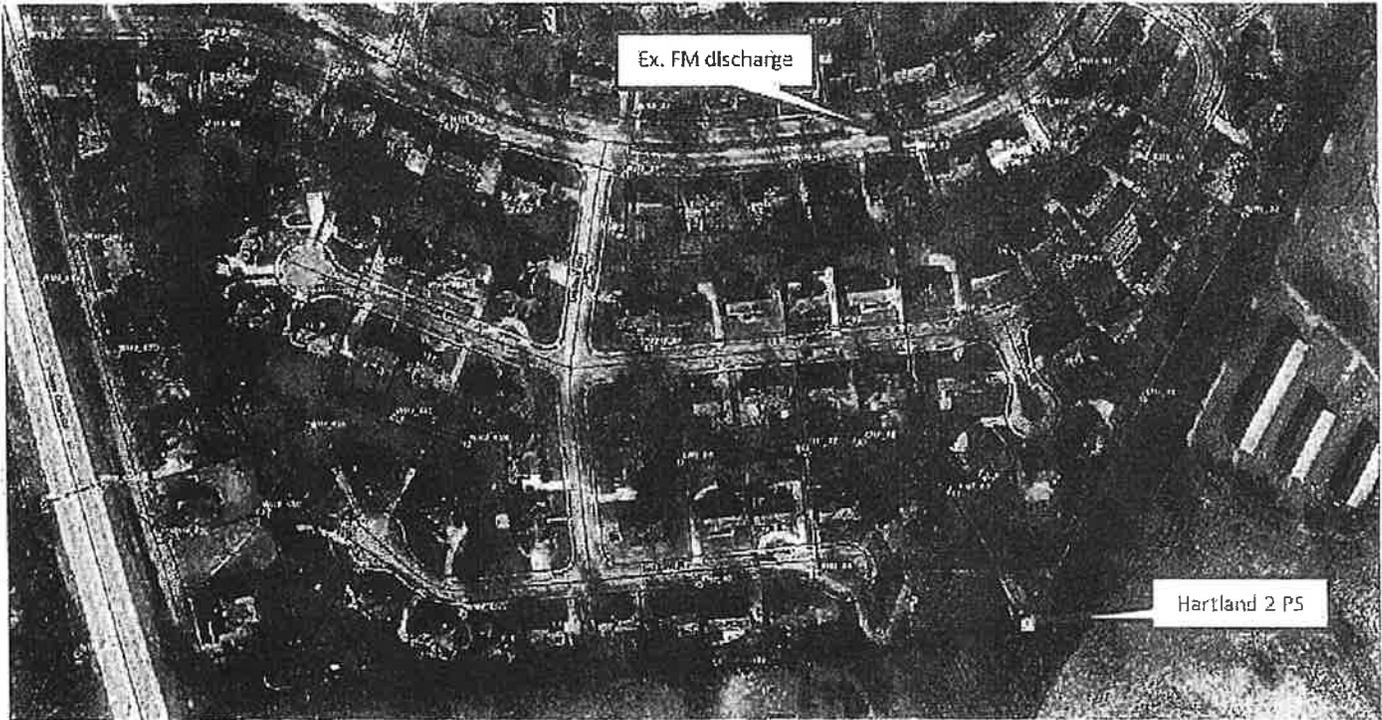


MAYOR LINDA GORTON



LEXINGTON

TODD SLATIN  
DIRECTOR  
CENTRAL PURCHASING



Todd Slatin, Director  
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.  
This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: Herrick Company, Inc.

ADDRESS: 2176 Waddy Rd, Lawrenceburg, KY 40342

SIGNATURE OF BIDDER:

Donna S. Herrick, CEO

Attachments:

1. Pre bid Meeting Summary
2. Pre bid Meeting Roster



**HERRICK COMPANY, INC.**  
**Bid: Hartland 2 PS Rehabilitation**

PROJECT NAME / Type of Work	Owner / Contact Info	Engineer	Status: Complete	Contract Amount
Campbellsville WTP Contract 1 - Improvements/Modifications	City of Campbellsville, 110 S. Columbia Ave., Campbellsville, KY 42718	Monarch Engineering, Lawrenceburg, KY 40342, 502-839-1310	2021	\$6,042,010.56
Frankfort Springs WTP - Building new pump station and installing new equipment	Hardin County Water District #2, 360 Ring Rd, Elizabethtown, KY 42701, 270-737-1056	Kenviron, Inc., Frankfort, KY 40601, 502-695-4357	2021	\$1,514,771.00
Frankfort WTP Refurbish - Replacing flocculation systems and pumps	City of Evarts, Evarts KY 40828	Kenviron, Inc., Frankfort, KY 40601, 502-695-4357	2021	\$209,853.00
Henry County Media #2 - Remove and install media	Henry County Water District, Campbellsburg, KY 40011, Keith Morris 502-777-4591	No engineer involved	2021	\$60,500.00
Hopkinsville WTP Filters - Replace support beams in	Hopkinsville Water Environmental Authority, Hopkinsville, KY 42240	Owner - Internal engineers involved	2021	\$49,900.00
Hopkinsville WWTP Improvements - Constructing new building	City of Lewisport, 350 Carolina St, Lewisport, KY 42351	Bluegrass Engineering, Georgetown, KY 40324 - Bryan Lovan 859-351-1714, Matt Curtis 502-370-6551	2021	\$95,350.00
Lexington Branch Chlorine Catwalk Project	Lexington-Fayette Urban County Government, Lexington, KY 40507, Brian Marcum 859-258-3325	Owner - Internal engineers involved	2021	\$74,350.00
Lexington Branch Secondary Digesters - Improvements, cleaning and installing pumps	LFUCG Division of Water Quality, Tiffany Rank, 125 Lisle Industrial Avenue, Lexington, KY 40511, 859-425-2406	LFUCG Division of Water Quality, Tiffany Rank, 125 Lisle Industrial Avenue, Lexington, KY 40511, 859-425-2406	2021	\$1,462,578.07
Lexington Branch/West Hickman Eyewash - Eyewash placement	LFUCG Division of Water Quality, Tiffany Rank, 125 Lisle Industrial Avenue, Lexington, KY 40511, 859-425-2406	LFUCG Division of Water Quality, Tiffany Rank, 125 Lisle Industrial Avenue, Lexington, KY 40511, 859-425-2406	2021	\$473,590.00
Lebanon Museum WWTP - New pump station	Creation Museum - Tom Van Huss, Petersburg, KY 41080, 888-582-4253	Owner - Contractor design-build	2020	\$51,000
Lebanon Dam Spillway - Grout	City of Edmonton, KY 42129, 270-432-2811	Monarch Engineering, Lawrenceburg, KY 40342, 502-839-1310	2020	\$39,500
Frankfort Sludge Valve Replacement WTP	Frankfort Plant Board, 305 Hickory Dr, Frankfort, KY 40601, 502-352-4372	Owner - Internal engineers involved	2020	\$82,151
Frankfort WWTP Spitter Box - Replace splitter box and gates	City of Frankfort, KY 40601, 502-875-2448	Owner - Contractor design-build	2020	\$32,750
Frankfort Phos Clarifiers WWTP - Replace mechanisms and clarifier	Hardin County Water District - Daniel Clifford, Radcliff, KY 40160, 207-737-1056	Owner - Internal engineers involved	2020	\$110,500
Frankfort Phos Rotors WWTP - Oxidation ditch rotor replacements	Lebanon Water Works Co., Lebanon, KY 40033, 270-692-2491	Owner - Internal engineers involved	2020	\$34,730
Frankfort Rhodes WWTP UV channels	Regional Water Resource Agency - Victor Cernius, 2101 Grimes Ave, Owensboro, KY 42303, 270-687-9450	Strand Associates - Mark Sneve, Louisville, KY 40202, 502-583-7020	2020	\$360,870
Frankfort Secondary WWTP Chemical Room - Replace pumps and	McCreary County Water District, 456 North Hwy 27, Whitley City, KY 42653, 606-376-2540	KY Engineering Group - Ryan Carr, Versailles, KY 40383, 859-251-4127	2020	\$277,567
Frankfort Midway WWTP Miscellaneous Repairs	City of Midway, KY 40347, 859-846-4413	Contract design-build	2020	\$76,351
Frankfort Morehead WWTP Blower - Replace blowers	Morehead Utility Plant Board, - Holly McGrath-Rosas 135 S Wilson Ave, Morehead, KY 40351, 606-784-5538	Eclipse Engineers - Alan Robinson, PE, Somerset, KY 42501, 606-451-0959	2020	\$315,500
Frankfort West Kickman Scum WWTP - Pipes and valves installation	LFUCG Division of Water Quality, 125 Lisle Industrial Ave, Lexington, KY 40511, 859-425-2400	Strand Associates - Mike Davis, Lexington, KY 40511, 859-225-8500	2020	\$1,486,537
Frankfort Spring Parks Aerial Sewer Pier Replacement - WTP Pier Replacement	City of Versailles, KY - Mitzi Dellus, 859-573-5436	GRW Engineers, Inc. - Mike Jacobs, 859-223-3999	2019	\$186,750
Frankfort Buffalo Trace Mxer / Install gear box on floating motor	Buffalo Trace Distillery, Frankfort, KY - B. Sauders or Travis Hammond, 502-696-5942	Contractor design-build	2019	\$58,400
Frankfort Horse Park PS Generator: Replace pump and generator	LFUCG Division of Water Quality - Betty Landrum, 125 Lisle Industrial Avenue, Lexington, KY, 859-258-3320	Hazen & Sawyer - Kurt Zehnnder, Lexington, KY, 859-219-1126	2019	\$145,525
Frankfort WTP Improvements / Rotors & screw pumps	City of Lebanon, KY - Eddie Masterson, 270-692-6272	Contractor design-build	2019	\$84,721
Frankfort In Trail Lift Station Rehabilitation Project: WTP Improvements	Hardin County Water District No. 1 - Daniel Clifford, 270-351-3222	Bell Engineering, Inc. - David Schrader, 859-278-5412	2019	\$784,890
Frankfort West Hickman WWTP Blower / Wastewater treatment	LFUCG Division of Water Quality, Betty Landrum, 125 Lisle Industrial Avenue, Lexington, KY, 859-258-3320	Internal engineers involved	2019	\$95,000
Frankfort WTP Improvements: Chemical Feed & Phosphorous Removal	City of Hardinsburg, KY - David Wakefield, 270-756-6719	KY Engineering Group, LLC - Ryan Carr, Versailles, KY, 859-251-4127	2018	\$1,930,382
Frankfort Horse Park Treatment Plant Valve Replacement - Valves	Wood Creek Water District - Robert Doan, 606-843-7113	Kenviron, Inc. - Vaughn Williams, 502-695-4357	2018	\$111,250

**HERRICK COMPANY, INC.**  
**Bid: Hartland 2 PS Rehabilitation**

PROJECT NAME / Type of Work	Owner / Contact Info	Engineer	Status: Complete	Contract Amount
Clarkman WWTP Zone 2 Aeration - Aeration System Improvements	LFJCG Division of Water Quality, Betty Landrum, 125 Lisle Industrial Avenue, Lexington, KY, 859-258-3320	Internal engineers involved	2018	\$531,400
Madstone Pump Station - Replace 3 Pump Stations 1 New Force Main	PDR Properties - Dona Ray, 1029 Monarch Street, Lexington, KY, 859-223-0425	Internal engineers involved	2018	\$293,030
Frankfort Treatment Plant Modifications - HSPS Valves Replacement, et al	Lebanon Water Works Company - Daren Thompson, 270-692-2491	KY Engineering Group, LLC - Jim Thompson, Versailles, KY, 859-251-4127	2018	\$174,250
Frankfort WTP Generator & SCADA System / Non-Potable Water System - Replace Generator, Install SCADA,	City of Frankfort Sewer Department, Kenny Hogsten, 1200 KY Avenue, Frankfort, KY, 502-875-2448	HMB Professional Engineers, Ray Bascom, 3 HMB Circle, Frankfort, KY, 502-695-9800	2018	\$1,909,660
Frankfort WWTP Clarifiers - Clarifier Rehab	City of Frankfort Sewer Department, Kenny Hogsten, 1200 KY Avenue, Frankfort, KY, 502-875-2448	Internal engineers involved	2018	\$186,500
Scottsville WWTP Miscellaneous Modifications - Modifications to Existing Grit Chamber, et al	City of Scottsville, KY - City Clerk Gayle Davis, 270-237-3238	GRW - Adalyn Haney, Louisville KY, 502-489-8484	2018	\$193,714
Campbellsville WTP Improvements - High Service Pump No. 2 Replacement	City of Campbellsville, KY - Mayor Tony Young, 270-465-7011	Monarch Engineering, Inc., Lawrenceburg, KY, 502-839-1310	2017	\$242,002
Frankfort WWTP Septage Receiving Station	Frankfort Sewer Department - Kenny Hogsten, 502-875-2448	Strand Associates, Inc. - John Herrford, Louisville, KY, 502-583-7020	2017	\$69,700
Water Treatment Plant Improvements - Contract 2	Cave Run Water Commission - Edward Bryant, 606-768-6665	KY Engineering Group, LLC - Bryan Lovan, Versailles, KY, 859-251-4127	2017	\$563,813
GMWSS No. 1 Digester Sludge Pump Replacement	GMWSS - Brad Parrent, C5- 859-509-5673	KY Engineering Group, LLC - Bryan Lovan, Versailles, KY, 859-251-4127	2017	\$232,250
Radcliff WWTP Mechanical Bar Screen	Hardin County Water District No. 1 - Daniel Clifford, 270-351-3222	Hardin County Water District No. 1, Jim Boyken, PE, 1400 Rogersville Road, Radcliff, KY 270-352-3222	2017	\$227,700
Radcliff WWTP Ultraviolet Disinfection System	Hardin County Water District No. 1 - Daniel Clifford, 270-351-3222	Hardin County Water District No. 1, Jim Boyken, PE, 1400 Rogersville Road, Radcliff, KY 270-352-3222	2017	\$404,400

Herrick Company, Inc  
2176 Waddy Road  
Lawrenceburg, KY 40342

BID: Hartland 2 Pump Station Rehabilitation

Bid Date: July 21, 2022

**Qualifications Statement –Required Attachments Section 1.05, H: Current Bonded Contracts**

Safety Manager for all projects: H. Douglas Herrick

Project Manager for all projects: Ryan P. Gabbard

<u>Project Name</u>	<u>Amount</u>	<u>Contract Date</u>	<u>Status</u>
Burkesville WWTP Improvements Burkesville, KY – Wastewater Treatment Plant Owner: City of Burkesville, KY, 378 Keen Street, Burkesville, KY, Ed Peretto (270-864-5670) GRW Engineers, Inc.: Mike Jacobs, 801 Corporate Drive, Lexington, KY (859-223-3999) HCI Superintendent: Greg Gribbins	\$3,327,655	Sept-20	In process
2020 WTP Improvements Louisa, KY – Water Treatment Plant Owner: City of Louisa, KY, 251 N Main Cross St., Louisa, KY, Mayor Harold Slone (606-638-4500) Kentucky Engineering Group: Ryan Carr, PO Box 1034, Versailles, KY (859-251-4127) HCI Superintendent: Chad Holbrook	\$496,000	June-21	In process
WWTP Improvements – Phase 1 Middlesboro, KY – Wastewater Treatment Plant Owner: City of Middlesboro, KY, 221 North 21 <sup>st</sup> St, Middlesboro, KY, Josh Campbell (606-248-7625) Vaughn & Melton Consulting Engineers, Inc.: Mitch Brunsma (606-248-6600) HCI Superintendent: Eddie Johnson	\$1,080,500	Aug-21	In process
E.C. McManis WWTP Headworks Improvements Frankfort, KY – Wastewater Treatment Plant Owner: City of Frankfort, Carl Groce, 1200 KY Avenue, Frankfort, KY (502-395-0256) Engineer: Bell Engineering, David Schrader, 2480 Fortune Drive, Ste. 350, Lexington, KY (859-278-5412) HCI Superintendent: Chad Holbrook	\$1,393,000	June-21	In process
Wastewater Treatment Plant Improvements Campbellsville, KY – WWTP Owner: City of Campbellsville, Brenda Allen, Mayor, 270-465-7011, 100 Terri Street, Campbellsville, KY Engineer: Monarch Engineering, Inc., Deron Byrne, 502-839-1310, 556 Carlton Drive, Lawrenceburg, KY HCI Superintendent: Greg Gribbins	\$374,500	Sept-21	In process

WTP Ammonia System & Sulfuric Acid Upgrades \$685,000 Dec-21 In process  
Frankfort, KY – Water Treatment Plant  
Owner: Frankfort Electric & Water Plant Board, Sharmista Dutton, 502-352-4372, 151 Flynn Ave,  
Frankfort, KY  
Engineer: HDR, Brent Tippey, 859-629-4831, 2517 Sir Barton Way, Lexington, KY  
HCI Superintendent: Chad Holbrook

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E.C. McManis WWTP Blowers \$701,670 Apr-22 In Process  
Frankfort, KY – Wastewater Treatment Plant  
Owner: Frankfort Sewer Department, Kenny Hogsten, 1200 Kentucky Ave, Frankfort, KY (502-875-2448)  
Engineer: Bell Engineering, David Schrader, 2480 Fortune Dr, Ste 350, Lexington, KY (859-278-5412)  
HCI Superintendent: Chad Holbrook

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Mayfield Emergency Clarifiers Modifications \$349,000 Mar-22 In Process  
Mayfield, KY – Wastewater Treatment Plant  
Owner: Mayfield Water & Electric Systems, Brent Schultz, 301 E Broadway, Mayfield, KY (270-804-5846)  
Engineer: Water Management Services, Steven Jones, 2 International Plaza, STE 401, Nashville, TN  
(615-366-6088)  
HCI Superintendent: Eddie Johnson

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On-Site Sodium Hypochlorite Generation \$339,700 Jan-22 In Process  
Lawrenceburg, KY – Water Treatment Plant  
Owner: City of Lawrenceburg, Monty Rhody, 100 N Main St, Lawrenceburg, KY (502-839-5372)  
Engineer: Same  
HCI Superintendent: Greg Gribbins

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Hartland 3 Pump Station Replacement \$1,110,000 Mar-22 In Process  
Lexington, KY – Wastewater Treatment Plant  
Owner: LFUCG, Division of Water Quality, Robert Peterson, 200 E Main, Lexington, KY (859-223-3999)  
Engineers: Bell Engineering, Jonathan Rehner, 2480 Fortune Dr., Lexington, KY (859-278-5412); Hazen and  
Sawyer, Kurt Zehnder, 230 Lexington Green Circle, Lexington, KY (859-219-1126); GRW Engineers, Mike  
Jacobs, 801 Corporate Drive, Lexington, KY (859-223-3999)  
HCI Superintendent: Bill Robinson

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George W. Arnold Water Treatment Facility \$698,995 Jan-22 In Process  
Upgrades & Expansion  
Guthrie, KY – Water Treatment Plant  
Owner: Logan-Todd Regional Water Commission, Kyle Kenner, 248 Tower Street, Guthrie, KY (270-482-  
6990)  
Engineers: Strand Associates, Andrew Esarey, 325 W. Main, Louisville, KY (502-583-7020)  
HCI Superintendent: To be determined

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## BID: Hartland 2 Pump Station Upgrades

### Bidder's Qualification Statement - Section 1.05 - Item I

Donna S. Herrick - Chief Executive Officer

HCI Start Date: 1/26/96 (Years in construction - 27)

**Experience:** Management, cost-tracking, asset acquisition, budgeting, financial planning, risk management and control, project analysis, corporate taxes, human resources and payroll, new business start-ups

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H. Douglas Herrick - Owner

HCI Start Date: 1/26/96 (Years in construction - 48)

**Experience:** Management, SFR contract builder, carpentry, estimating, supervisor on water- and waste-water treatment projects, including new construction, renovation, maintenance and emergency work

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Cody M. Lokits - President

HCI Start Date: 2/8/22 (Years in construction - 12)

**Experience:** BS in Civil Engineering, project engineer, project manager, project estimating, cost tracking & containment, safety officer

---

Eddie R. Johnson - Superintendent

HCI Start Date: 5/22/99 (Years in construction - 49)

**Experience:** Carpentry, electrical, plumber, layout & design, supervisory

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Gregory A. Gribbins - Superintendent

HCI Start Date: 1/7/19 (Years in construction - 30)

**Experience:** Foreman, layout, carpentry, supervisory

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Ryan P. Gabbard - Project Manager / Superintendent

HCI Start Date: 12/30/00 (Years in construction - 21)

**Experience:** Laborer, rebar foreman, layout, carpentry, tower construction, supervisory; project manager

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Chadrick D. Holbrook - Superintendent

HCI Start Date: 1/19/18 (Years in construction - 18 )

**Experience:** Operator, carpentry, supervisory

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Sabrina K. Gabbard - Office Manager / Payroll Administrator

HCI Start Date: 10/09/06 (Years in construction - 16)

**Experience:** Payroll administrator & Human Resources management, project reporting, equipment control & maintenance, payables & receivables, year-end information reporting, quarterly tax filing, field work as labor & forklift operator

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## Hartland 2 Pump Station Upgrades

### DBE Participation on Current Projects, Section 1.05, Item J

<u>Subcontractor</u>	<u>Project</u>	<u>MWDBE</u>	<u>% of Total Contract</u>
McKinney Painting	Burkesville WWTP	Yes	2%
M&M Manufacturing	Burkesville WWTP	Yes	1%
Mills Supply	Burkesville WWTP	Yes	1%
McKinney Painting	Middlesboro Phase 1	Yes	2%
M&M Manufacturing	Middlesboro Phase 1	Yes	<1%
McKinney Painting	Frankfort WWTP Headworks	Yes	1%
M&M Manufacturing	Campbellsville Influent Meters	Yes	7%
Mills Supply	Campbellsville Influent Meters	Yes	4%
Nationwide Fence	Campbellsville Influent Meters	Yes	1%
McKinney Painting	Frankfort WTP Ammonia	Yes	3%
M&M Manufacturing	Frankfort WTP Ammonia	Yes	3%
Mills Supply	Frankfort WTP Ammonia	Yes	<1%
Mills Supply	Frankfort WWTP Blowers	Yes	<1%
McKinney Painting	Frankfort WWTP Blowers	Yes	1.4%
M&M Manufacturing	Mayfield WWTP Clarifiers	Yes	11.7%
McKinney Painting	Hartland 3 Pump Station	Yes	1%
M&M Manufacturing	Logan/Todd WTP	Yes	1.4%

**Ryan Gabbard**

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**From:** Ryan Gabbard  
**Sent:** Friday, July 1, 2022 10:04 AM  
**To:** smiller@lexingtonky.gov  
**Subject:** INVITATION TO BID: Hartland 2 PS Rehab

Dear Sherita Miller - Minority & Business Enterprise Liaison - LFUCG,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

**LFUCG – HARTLAND 2 PUMP STATION UPGRADES**

**BID DATE:** Thursday, July 21, 2022  
**BID TIME:** 10:00 AM ET

We hereby request your assistance in providing this project information to Disadvantaged, Minority, Woman, and Veteran Owned firms to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

We are seeking proposals on the following scopes of work:

- *Miscellaneous Metals*
- *Painting and Coatings*
- *Process Equipment & Pumps*
- *Process Valves*
- *SCADA Integration*
- *Instrumentation & Controls*
- *Ductile Iron & PVC Piping*
- *Electrical*

Electronic bidding documents may be accessed at the following link:

[220721 – Hartland 2 PS Rehabilitation Project](#)

Please respond to this email if you can provide the requested assistance.

Thank you,

**Ryan Gabbard**  
**Herrick Company, Inc.**  
2176 Waddy Rd.  
Lawrenceburg, KY 40342  
Office: 502-839-3484

## Ryan Gabbard

---

**From:** Sherita Miller <smiller@lexingtonky.gov>  
**Sent:** Friday, July 1, 2022 10:10 AM  
**To:** Ryan Gabbard  
**Subject:** RE: INVITATION TO BID: Hartland 2 PS Rehab  
**Attachments:** LFUCG Certified List\_May 2022\_.xlsx

Good morning Ryan,

Attached is a copy of LFUCG's certified list of minority, women and veteran owned businesses. This is a list of businesses with various specialties.

Thanks, Sherita

**Sherita Miller, MPA, CPSD**  
*Minority Business Enterprise Liaison*  
Central Purchasing

859.258.3323 office  
[lexingtonky.gov](http://lexingtonky.gov)



**LEXINGTON**

**From:** Ryan Gabbard <Ryan@HCI96.COM>  
**Sent:** Friday, July 1, 2022 10:04 AM  
**To:** Sherita Miller <smiller@lexingtonky.gov>  
**Subject:** INVITATION TO BID: Hartland 2 PS Rehab

You don't often get email from [ryan@hci96.com](mailto:ryan@hci96.com). [Learn why this is important](#)

[EXTERNAL] Use caution before clicking links and/or opening attachments.

Dear Sherita Miller - Minority & Business Enterprise Liaison - LFUCG,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

### LFUCG – HARTLAND 2 PUMP STATION UPGRADES

**BID DATE:** Thursday, July 21, 2022  
**BID TIME:** 10:00 AM ET

We hereby request your assistance in providing this project information to Disadvantaged, Minority, Woman, and Veteran Owned firms to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

## Ryan Gabbard

---

**From:** Ryan Gabbard  
**Sent:** Friday, July 1, 2022 9:07 AM  
**To:** 'brian@millssupply.net'  
**Subject:** Invitation To Bid - Hartland 2 PS Rehabilitation

Brian Ackerman - Mills Supply Co., Inc,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

### **LFUCG – HARTLAND 2 PUMP STATION UPGRADES**

**BID DATE:** Thursday, July 21, 2022

**BID TIME:** 10:00 AM ET

We hereby invite your firm to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

We are seeking proposals on the following scopes of work:

- *Miscellaneous Metals*
- *Painting and Coatings*
- *Process Equipment & Pumps*
- *Process Valves*
- *SCADA Integration*
- *Instrumentation & Controls*
- *Ductile Iron & PVC Piping*
- *Electrical*

Electronic bidding documents may be accessed at the following link:

[220721 – Hartland 2 PS Rehabilitation](#)

**Disadvantaged, Minority, Woman, and Veteran Owned Businesses are encouraged to bid.**

Please respond to this email if you are interested in providing a proposal, and, if possible, please provide your proposal by **Wednesday, July 20, 2022** for review and consideration.

Thank you,

**Ryan Gabbard**  
**Herrick Company, Inc.**  
2176 Waddy Rd.

## Ryan Gabbard

---

**From:** Ryan Gabbard  
**Sent:** Friday, July 1, 2022 9:07 AM  
**To:** 'daniel@m-mmanufacturing.com'  
**Subject:** Invitation To Bid - Hartland 2 PS Rehabilitation

Daniel Hodges - M&M Manufacturing,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

### **LFUCG – HARTLAND 2 PUMP STATION UPGRADES**

**BID DATE:** Thursday, July 21, 2022

**BID TIME:** 10:00 AM ET

We hereby invite your firm to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

We are seeking proposals on the following scopes of work:

- *Miscellaneous Metals*
- *Painting and Coatings*
- *Process Equipment & Pumps*
- *Process Valves*
- *SCADA Integration*
- *Instrumentation & Controls*
- *Ductile Iron & PVC Piping*
- *Electrical*

Electronic bidding documents may be accessed at the following link:

[220721 – Hartland 2 PS Rehabilitation](#)

**Disadvantaged, Minority, Woman, and Veteran Owned Businesses are encouraged to bid.**

Please respond to this email if you are interested in providing a proposal, and, if possible, please provide your proposal by **Wednesday, July 20, 2022** for review and consideration.

Thank you,

**Ryan Gabbard**  
**Herrick Company, Inc.**  
2176 Waddy Rd.

## Ryan Gabbard

---

**From:** Ryan Gabbard  
**Sent:** Friday, July 1, 2022 9:07 AM  
**To:** 'matt@mckinneypainting.com'  
**Subject:** Invitation To Bid - Hartland 2 PS Rehabilitation

Matt Gamlin - Mckinney Painting,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

### **LFUCG – HARTLAND 2 PUMP STATION UPGRADES**

**BID DATE:** Thursday, July 21, 2022  
**BID TIME:** 10:00 AM ET

We hereby invite your firm to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

We are seeking proposals on the following scopes of work:

- *Miscellaneous Metals*
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- *Process Equipment & Pumps*
- *Process Valves*
- *SCADA Integration*
- *Instrumentation & Controls*
- *Ductile Iron & PVC Piping*
- *Electrical*

Electronic bidding documents may be accessed at the following link:

[220721 – Hartland 2 PS Rehabilitation](#)

**Disadvantaged, Minority, Woman, and Veteran Owned Businesses are encouraged to bid.**

Please respond to this email if you are interested in providing a proposal, and, if possible, please provide your proposal by **Wednesday, July 20, 2022** for review and consideration.

Thank you,

**Ryan Gabbard**  
**Herrick Company, Inc.**  
2176 Waddy Rd.

## Ryan Gabbard

---

**From:** Ryan Gabbard  
**Sent:** Friday, July 1, 2022 8:50 AM  
**To:** brad.putty@ky.gov  
**Subject:** INVITATION TO BID: Hartland 2 PS Rehab

Dear Brad Putty - Office for Civil Rights & Small Bus. Development - KYTC,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

### **LFUCG – HARTLAND 2 PUMP STATION UPGRADES**

**BID DATE:** Thursday, July 21, 2022

**BID TIME:** 10:00 AM ET

We hereby request your assistance in providing this project information to Disadvantaged, Minority, Woman, and Veteran Owned firms to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

We are seeking proposals on the following scopes of work:

- *Miscellaneous Metals*
- *Painting and Coatings*
- *Process Equipment & Pumps*
- *Process Valves*
- *SCADA Integration*
- *Instrumentation & Controls*
- *Ductile Iron & PVC Piping*
- *Electrical*

Electronic bidding documents may be accessed at the following link:

[220721 – Hartland 2 PS Rehabilitation Project](#)

Please respond to this email if you can provide the requested assistance.

Thank you,

**Ryan Gabbard**  
**Herrick Company, Inc.**  
2176 Waddy Rd.  
Lawrenceburg, KY 40342  
Office: 502-839-3484

**Ryan Gabbard**

---

**From:** Ryan Gabbard  
**Sent:** Friday, July 1, 2022 8:50 AM  
**To:** sheila.eagle@ky.gov  
**Subject:** INVITATION TO BID: Hartland 2 PS Rehab

Dear Shella Jarvis - Office for Civil Rights & Small Bus. Development - KYTC,

**Herrick Company, Inc.** will be bidding as a General Contractor on the following Project:

**LFUCG – HARTLAND 2 PUMP STATION UPGRADES**

**BID DATE:** Thursday, July 21, 2022  
**BID TIME:** 10:00 AM ET

We hereby request your assistance in providing this project information to Disadvantaged, Minority, Woman, and Veteran Owned firms to provide a proposal on any portion of the project as described below, per the Plans & Specifications:

*The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades, to include emergency pump bypass connections, replacement of all operating valves, upgrade of electrical controls and conduit, and replacement of pumps and associated equipment along with all incidental work for a complete installation, as shown on the Drawings and described in the Specifications.*

We are seeking proposals on the following scopes of work:

- *Miscellaneous Metals*
- *Painting and Coatings*
- *Process Equipment & Pumps*
- *Process Valves*
- *SCADA Integration*
- *Instrumentation & Controls*
- *Ductile Iron & PVC Piping*
- *Electrical*

Electronic bidding documents may be accessed at the following link:

[220721 – Hartland 2 PS Rehabilitation Project](#)

Please respond to this email if you can provide the requested assistance.

Thank you,

**Ryan Gabbard**  
**Herrick Company, Inc.**  
2176 Waddy Rd.  
Lawrenceburg, KY 40342  
Office: 502-839-3484

## Ryan Gabbard

---

**From:** Matt Gamlin <matt@mckinneypainting.com>  
**Sent:** Thursday, July 21, 2022 8:58 AM  
**To:** Ryan Gabbard  
**Cc:** HCI; Cody Lokits  
**Subject:** Re: LFUCG - Hartland 2 Pump Station Upgrades

Yes

Matt Gamlin  
McKinney Painting  
(Mobile Response)

---

**From:** Ryan Gabbard <Ryan@HCI96.COM>  
**Sent:** Thursday, July 21, 2022 8:37:08 AM  
**To:** Matt Gamlin <matt@mckinneypainting.com>  
**Cc:** HCI <HCI@HCI96.COM>; Cody Lokits <cody@HCI96.COM>  
**Subject:** LFUCG - Hartland 2 Pump Station Upgrades

Matt,

To confirm, we have you down for \$3,000 for the painting work on this project (verbal from you to Cody). Is this correct?

Thanks,

*Ryan P. Gabbard*

Project Manager  
Herrick Company, Inc.  
2176 Waddy Rd.  
Lawrenceburg, KY 40342  
502-839-3484 Office  
502-682-6903 Cell

**Please note my new email address: [ryan@hci96.com](mailto:ryan@hci96.com)**

### Disclaimer

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful.

This email has been scanned for viruses and malware, and may have been automatically archived by Mimecast, a leader in email security and cyber resilience. Mimecast integrates email defenses with brand protection, security awareness training, web security, compliance and other essential capabilities. Mimecast helps protect large and small organizations from malicious activity, human error and technology failure; and to lead the movement toward building a more resilient world. To find out more, visit our website.

### Disclaimer

**SECTION 00510 – NOTICE OF AWARD**

CONTRACTOR Herrick Company, Inc.  
2176 Waddy Rd.  
Lawrenceburg, KY 40342

OWNER: Lexington-Fayette Urban County Government  
Division of Water Quality  
Lexington, Kentucky

PROJECT: Hartland 2 Pump Station Upgrades  
Lexington-Fayette Urban County Government

LFUCG Bid No. 67-2022

You are hereby notified that the Owner has considered the Bid submitted by you for the above-described project in response to its Advertisement for Bids dated July 21, 2022.

It appears that it is to the best interest of said Owner to accept your Bid in the amount of Two Hundred Fifty Six Thousand and No/100 dollars (\$ 256,000.00 ), and you are hereby notified that your Bid has been accepted for

**HARTLAND 2 PUMP STATION UPGRADES**

LFUCG Bid No. 67-2022

The Contractor is required by these Contract Documents to execute and deliver the formal Agreement (Contract) with the undersigned Owner and to furnish the required Contractor's Performance, Payment, Warranty, and Erosion and Sediment Control Bonds within fifteen (15) days from the date of the delivery of this Notice.

If you fail to execute said Agreement (Contract) and to furnish said Bonds within fifteen (15) days from the date of delivery of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and to award the Work covered by your Bid to another, or to re-advertise the Work or otherwise dispose thereof as the Owner may deem appropriate.

Dated this 31 day of August, 2022.

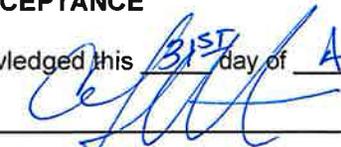
Lexington-Fayette Urban County Government

By: 

Title: Remedial Measures Program Manager

**NOTICE OF ACCEPTANCE**

Receipt of the above Notice of Award is hereby acknowledged this 31<sup>ST</sup> day of AUGUST, 2022.

By: 

Title: PRESIDENT

END OF SECTION

**SECTION 00520 – AGREEMENT (CONTRACT)**

THIS AGREEMENT, made on the 7 day of September, 2022, by and between Lexington Fayette Urban County Government, acting herein called "OWNER" and Herrick Company, Inc. doing business as a corporation located in the City of Lawrenceburg, County of Anderson, State of Kentucky, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of Two Hundred, Fifty-Six Thousand and no/100 dollars quoted in the BID by the CONTRACTOR, dated July 21, 2022, hereby agree to commence and complete the construction described as follows:

**1.01 SCOPE OF WORK**

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, supervision, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the BID, the Contract Documents, and the Specifications prepared by the Engineer for the Hartland 2 Pump Station Upgrades LFUCG Bid No. 67-2022.

**1.02 TIME OF COMPLETION**

The time period estimated and authorized by the OWNER for Substantial Completion of Work is 270 **calendar days**, and Final Completion is 300 **calendar days** of work by the Agreement in full. The time shall begin ten (10) calendar days after CONTRACTOR is issued the Notice to Proceed.

**1.03 ISSUANCE OF NOTICE TO PROCEED**

Notice to Proceed for Work will be issued in whole or in part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined by the Engineer after consultation with the CONTRACTOR and the OWNER.

**1.04 AGREEMENT (CONTRACT) AMOUNT**

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the AGREEMENT as quoted in the BID, subject to any additions and deductions, as provided therein.

**1.05 PROGRESS PAYMENTS**

The OWNER shall make payments on account of the AGREEMENT in accordance with the General Conditions, as recommended by the Engineer and authorized by the OWNER, less the aggregate of previous payments.

**1.06 ACCEPTANCE AND FINAL PAYMENT**

Final payment shall be due within ninety (90) days after Final Completion of the Work, provided the Work is deemed "Final Completion" and fully accepted by the OWNER.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and other indebtedness connected with the AGREEMENT (CONTRACT) has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER so certifies, the OWNER shall upon certificate of the ENGINEER, and without terminating the AGREEMENT (CONTRACT), make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

#### 1.07 EXTRA WORK

The OWNER, without invalidating the AGREEMENT (CONTRACT) may order extra work or make changes by altering, adding to or deducting from the Work, the AGREEMENT (CONTRACT) amount being adjusted accordingly. All such work shall be executed and paid for in accordance with the General Conditions.

#### 1.08 LIQUIDATED DAMAGES

If the CONTRACTOR shall fail or refuse to complete the Work within the AGREEMENT (CONTRACT) Time, or extension of time granted by the OWNER, then the CONTRACTOR agrees as a partial consideration for the awarding of this AGREEMENT (CONTRACT) that the OWNER may retain the compensation otherwise to be paid to the CONTRACTOR the amount of one thousand dollars (\$1,000.00) per consecutive calendar day that the CONTRACTOR shall be in default after the Final Completion time stipulated in the Contract Documents. The said amount is fixed and agreed upon by and between the CONTRACTOR and the OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would in such event sustain.

#### 1.09 CONSENT DECREE REQUIREMENTS

- A. The OWNER, the United States Environmental Protection Agency, and the Commonwealth of Kentucky have entered into a Consent Decree in a case styled *United States, et al. v. Lexington-Fayette Urban County Government*, United States District Court for the Eastern District of Kentucky, Case No. 5:06-CV-00386 ("CONSENT DECREE"), that requires OWNER to complete numerous projects related to its sanitary sewer system and stormwater management program within specific periods of time.
- B. **Time is of the essence in the performance of this Agreement (CONTRACT).** CONTRACTOR is aware that the OWNER is subject to penalties for non-compliance with the CONSENT DECREE deadlines. The CONTRACTOR shall be specifically liable and responsible for payment of any and all penalties, fines, or fees assessed against or incurred by the OWNER as a result of any delay in, or non-performance of, any of the CONTRACTOR's obligations or responsibilities under this AGREEMENT (CONTRACT), or for any other damages suffered by OWNER as a result of such delay or non-performance. This shall specifically include, but shall not be limited to, any penalty, fine, fee, or assessment against the OWNER by the U.S. Department of Justice, U.S. Environmental Protection Agency, and/or the Kentucky Energy and Environment Cabinet related to the CONSENT DECREE.
- C. The provisions of the Contract Documents and the various rates of compensation for CONTRACTOR's services provided for elsewhere in this AGREEMENT (CONTRACT) have been agreed to in anticipation of the orderly and continuous progress of the AGREEMENT (CONTRACT) through completion.
- D. If delays result by reason of acts of the OWNER or approving agencies, which are beyond the control of the CONTRACTOR, an extension of time for such delay will be considered. If delays occur, the CONTRACTOR shall immediately notify the OWNER and within five (5) business days from the date of the delay apply in writing to the OWNER for an extension of

time for such reasonable period as may be mutually agreed upon between the parties, and if approved, the AGREEMENT (CONTRACT) schedule shall be revised to reflect the extension. Such extension of time to the completion date shall in no way be construed to operate as a waiver on the part of the OWNER of any of its rights in the AGREEMENT (CONTRACT). In the event the parties cannot agree upon an extension of time, the Dispute shall be addressed in the manner outlined hereinafter under this Article.

In the event that the overall delay resulting from the above-described causes is sufficient to prevent complete performance of the AGREEMENT (CONTRACT) within six (6) months of the time specified herein, the fees to be paid to CONTRACTOR shall be subject to adjustment as agreed upon by the parties.

- E. If delays result solely by reason of acts of the CONTRACTOR, the CONTRACTOR shall be held liable for any financial penalties incurred by the OWNER as a result of the delay, including but not limited to those assessed pursuant to the CONSENT DECREE. Disputes as outlined hereinafter in this Article shall apply in the event the parties cannot mutually agree upon the cause(s) associated with delays in completing project deliverables. The CONTRACTOR must immediately notify the OWNER in the event of such delay, and provide the OWNER a written action plan within five (5) business days on how it will attempt to resolve the delay.

#### F. DISPUTES

Except as otherwise provided in this AGREEMENT (CONTRACT), any dispute hereunder may be resolved by agreement of the OWNER's Agent (Charles H. Martin, P.E., Director of Water Quality) and the CONTRACTOR. In the absence of such an agreement, the dispute shall be submitted to the OWNER's Commissioner, Department of Public Works and Environmental Quality, whose decision shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, capricious, arbitrary, or so grossly erroneous as necessarily to imply bad faith. Pending a final decision of a dispute hereunder the CONTRACTOR shall proceed diligently with the performance of the AGREEMENT (CONTRACT) in accordance with the direction of the OWNER.

### 1.10 RIGHT TO REVIEW, AUDIT, AND INSPECT

The CONTRACTOR shall provide to the OWNER or its duly authorized representative(s), at any time during the course of the contract and up to five (5) years thereafter, access to any books, documents, papers, emails, and/or other records or communications which are directly pertinent to this specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

### 1.11 CONTRACT DOCUMENTS

In general, the Advertisement for Bids, Information Available to Bidders, the Bid, the General Conditions, Performance, Payment, Erosion and Sediment Control and Warranty Bonds, AGREEMENT (CONTRACT), Supplementary Conditions, Supplemental General Conditions for SRF, Technical Specifications, any and all Addenda, and Plan Drawings form the AGREEMENT (CONTRACT) and they are fully a part of the AGREEMENT (CONTRACT) as if hereto attached or herein repeated.

A full listing of the Contract Documents consist of the following:

Specifications:	Per Table of Contents
Drawings (Plans):	Per Table of Contents

IN WITNESSETH WHEREOF, the parties hereto have executed this AGREEMENT (CONTRACT) as of the date and year above written.

(Seal)

Lexington-Fayette Urban County Government  
Lexington, Kentucky

(Owner)

ATTEST:

Mackenzie Stock  
Clerk of Urban County Council

By: Linda Gorton  
(Signature of Mayor)

Linda Gorton Mayor  
(Name/Title)

(Seal)

HERRICK COMPANY, INC.  
(Contractor)

[Signature]  
(Secretary)\*

By: [Signature]  
(Contractor's Signature)

Donna S Herrick  
(Witness)

Cody Lokits President  
(Name/Title)

2176 Waddy Road  
(Address)

Lawrenceburg KY 40342

\*IMPORTANT: Strike out any non-applicable terms:

Secretary of the OWNER should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing AGREEMENT (CONTRACT).

END OF SECTION

**SECTION 00550 – NOTICE TO PROCEED**

CONTRACTOR: Herrick Company, Inc.

2176 Waddy Road

Lawrenceburg, Kentucky 40342

OWNER: Lexington-Fayette Urban County Government  
Lexington, Kentucky

PROJECT: Hartland 2 Pump Station Upgrades  
Lexington-Fayette Urban County Government  
Lexington, Kentucky

LFUCG Bid No. 67-2022

Agreement (Contract) Amount:  
Two Hundred, Fifty-Six Thousand and no/100 dollars (\$256,000.00)

This Notice to Proceed is issued on September 8, 2022; therefore, Contractor is hereby notified to commence Work on the referenced Project on or before \_\_\_\_\_, 20\_\_ and to substantially complete Work within 270 CONSECUTIVE CALENDAR DAYS thereafter. The Agreement (Contract) completion date is therefore \_\_\_\_\_, 20\_\_.

The Agreement (Contract) provides for assessment of the sum of \_\_\_\_\_ dollars (\$ \_\_\_\_\_) as liquidated damages for each consecutive calendar day after the above established Agreement (Contract) completion date that the Work remains incomplete.

Lexington-Fayette Urban County Government

By \_\_\_\_\_

Title: Remedial Measures Program Manager

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

END OF SECTION

**SECTION 00600 – BONDS AND CERTIFICATES**

**(This page is intentionally left blank.)**

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS, that

\_\_\_\_\_  
Herrick Company, Inc.  
(Name of CONTRACTOR)

\_\_\_\_\_  
2176 Waddy Rd, Lawrenceburg, KY 40342  
(Address of CONTRACTOR)

a \_\_\_\_\_ Corporation, hereinafter  
(Corporation, Partnership, or Individual)

called Principal, and \_\_\_\_\_ United Fire & Casualty Company  
(Name of Surety)

\_\_\_\_\_  
118 Second Ave SE, Cedar Rapids, IA 52401  
(Address of Surety)

hereinto called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 East Main Street, Third Floor  
Lexington, Kentucky 40507

Obligee, hereinafter called "OWNER" in the penal sum of:

Two Hundred Fifty Six Thousand and No/100-----dollars (\$ 256,000.00 ), for  
the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators,  
successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into an Agreement (Contract) with OWNER for the  
Hartland 2 Pump Station Upgrades, LFUCG Bid No. 67-2022 in accordance with Contract Documents  
prepared by Bell Engineering and GRW and dated May 2022, which Agreement (Contract) is by  
reference made a part hereof, and is hereinafter referred to as the Agreement (Contract).

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly  
and faithfully perform said Agreement (Contract), then this obligation shall be null and void; otherwise it  
shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER.

Whenever, Principal shall be, and declared by OWNER to be in default under the Agreement (Contract), the OWNER having performed OWNER'S obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

1. Complete the Agreement (Contract) in accordance with its terms and conditions or
2. Obtain a Bid or Bids for completing the Agreement (Contract) in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for an Agreement (Contract) between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Agreement (Contract) or Agreements (Contracts) of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Agreement (Contract) Amount; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Agreement (Contract) Amount", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Agreement (Contract) and any amendments thereto, less the amount properly paid by OWNER to Principal.

Any suit under this bond must be instituted before the expiration of one (1) year from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of (number)

which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST:

Herrick Company, Inc.  
Principal

[Signature]  
(Principal) Secretary

By: Donna S Herrick (s)  
Donna S Herrick, CEO  
2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

Sabrina K Taylor  
Witness as to Principal  
2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

United Fire & Casualty Company  
Surety  
By: Leigh McCarthy  
Attorney-in-Fact  
118 Second Ave SE  
Address  
Cedar Rapids, IA 52401

ATTEST:

\_\_\_\_\_  
(Surety) Secretary

(SEAL)  
Jennifer Edwards  
Witness to Surety  
2307 River Rd, Ste 200  
Address  
Louisville, KY 40206

Title: Attorney-in-Fact  
Surety  
By: Leigh McCarthy

Title: Jennifer Edwards, Underwriting Assistant

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Agreement (Contract).



PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, that

\_\_\_\_\_ Herrick Company, Inc.  
(Name of CONTRACTOR)

\_\_\_\_\_ 2176 Waddy Rd, Lawrenceburg, KY 40342  
(Address of CONTRACTOR)

a \_\_\_\_\_ Corporation, hereinafter  
(Corporation, Partnership, or Individual)

called Principal, and \_\_\_\_\_ United Fire & Casualty Company  
(Name of Surety)

\_\_\_\_\_ 118 Second Ave SE, Cedar Rapids, IA 52401  
(Address of Surety)

hereinto called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 East Main Street, Third Floor  
Lexington, Kentucky 40507

Obligee, hereinafter called "OWNER" in the penal sum of:

Two Hundred Fifty Six Thousand and No/100-----dollars (\$ 256,000.00 ), for the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into an Agreement (Contract) with OWNER for the Hartland 2 Pump Station Upgrades, LFUCG Bid No. 67-2022, in accordance with Contract Documents prepared by Bell Engineering and GRW and dated, May 2022, which Agreement (Contract) is by reference made a part hereof, and is hereinafter referred to as the Agreement (Contract).

NOW, THEREFORE THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined for all labor and material used or reasonably required for use in the performance of the Agreement (Contract), then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor material, or both, used or reasonably required for use in the performance of the Agreement (Contract), labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Agreement (Contract).

2. The above named Principal and Surety hereby jointly and severally agree with the OWNER that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant and have execution thereon. The OWNER shall not be liable for the payment of any costs or expenses of any such suit.
3. No suit or action shall be commenced hereunder by any claimant:
  - (a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: The Principal, the OWNER, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the Work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the Work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in an envelope addressed to the Principal, OWNER, or Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
  - (b) After the expiration of one (1) year following the date on which Principal ceased Work on said Agreement (Contract), it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.
  - (c) Other than in a state court of competent jurisdiction in and for the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.
4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against aid improvement, whether or not claim for the amount of such lien be presented under and against this bond.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of (number)

which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST:

Herrick Company, Inc.  
Principal

[Signature]  
(Principal) Secretary

By: Donna S Herrick (s)  
Donna S. Herrick, CEO  
2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

Sabrina K Taylor  
Witness as to Principal

2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

United Fire & Casualty Company  
Surety

ATTEST:

By: Leigh McCarthy  
Attorney-in-Fact

\_\_\_\_\_  
(Surety) Secretary

118 Second Ave SE  
Address  
Cedar Rapids, IA 52401



(SEAL)  
Jennifer Edwards  
Witness to Surety

2307 River Rd, Ste 200  
Address  
Louisville, KY 40206

Title: Attorney-in-Fact  
Surety

By: Leigh McCarthy

Title: Jennifer Edwards, Underwriting Assistant

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Agreement (Contract).

1.03 EROSION AND SEDIMENT CONTROL PERFORMANCE BOND

Bond No. 54-244378

EROSION AND SEDIMENT CONTROL PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that

Herrick Company, Inc.  
(Name of CONTRACTOR)

2176 Waddy Rd, Lawrenceburg, KY 40342  
(Address of CONTRACTOR)

a \_\_\_\_\_ Corporation, hereinafter  
(Corporation, Partnership, or Individual)

called Principal, and United Fire & Casualty Company  
(Name of Surety)

118 Second Ave SE, Cedar Rapids, IA 52401  
(Address of Surety)

hereinto called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 East Main Street, Third Floor  
Lexington, Kentucky 40507

Obligee, hereinafter called "OWNER" in the penal sum of:

Two Thousand Five Hundred Sixty and No/100 dollars (\$ 2,560.00), for the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal by written agreement is entering into an Agreement (Contract) with OWNER for the Hartland 2 Pump Station Upgrades, LFUCG Bid No. 67-2022, in accordance with Contract Documents prepared by Bell Engineering and GRW and dated May 2022, which Agreement (Contract) is by reference made a part hereof, and is hereinafter referred to as the Agreement (Contract).

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly and faithfully perform said Agreement (Contract), then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER.

Whenever, Principal shall be, and declared by OWNER to be in default under the Agreement (Contract), the OWNER having performed OWNER's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

1. Complete the installation, maintenance, and removal of the soil erosion and sediment controls and final stabilization of the site in accordance with the Agreement (Contract), the LFUCG Land Disturbance Permit, Chapter 16 Article X Division 5 of the LFUCG Code of Ordinances, and the KPDES General Permit for Stormwater Discharges Associated with Construction Activities (KYR 10).

2. Obtain a Bid or Bids for completing the installation, maintenance, and removal of the soil erosion and sediment controls and final stabilization of the site in accordance with the Agreement's (Contract's) terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for an Agreement (Contract) between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Agreement (Contract) or Agreements (Contracts) of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Agreement (Contract) Amount; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Agreement (Contract) Amount", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Agreement (Contract) and any amendments hereto, less the amount properly paid by OWNER to Principal.

Any suit under this bond must be instituted before the expiration one (1) year from the date on which final payment under the Agreement (Contract) falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of (number)

which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST:

Herrick Company, Inc.  
Principal

[Signature]  
(Principal) Secretary

By: Donna S Herrick (s)  
Donna S. Herrick, CEO  
2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

[Signature]  
Witness as to Principal

2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

United Fire & Casualty Company  
Surety

ATTEST:

By: [Signature]  
Attorney-in-Fact

\_\_\_\_\_  
(Surety) Secretary

118 Second Ave SE  
Address  
Cedar Rapids, IA 52401



(SEAL)  
[Signature]  
Witness to Surety

Title: Attorney-in-Fact  
Surety

2307 River Rd, Ste 200  
Address  
Louisville, KY 40206

By: Leigh McCarthy

Title: Jennifer Edwards, Underwriting Assistant

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Agreement (Contract).

1.04 WARRANTY BOND

Bond No. 54-244378

WARRANTY BOND

KNOW ALL MEN BY THESE PRESENTS, that

Herrick Company, Inc.  
(Name of CONTRACTOR)

2176 Waddy Rd, Lawrenceburg, KY 40342  
(Address of CONTRACTOR)

a Corporation, hereinafter  
(Corporation, Partnership, or Individual)

called Principal, and United Fire & Casualty Company  
(Name of Surety)

118 Second Ave SE, Cedar Rapids, IA 52401  
(Address of Surety)

hereinto called Surety, are held and firmly bound unto

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
200 East Main Street, Third Floor  
Lexington, Kentucky 40507

Obligee, hereinafter called "OWNER" in the penal sum of: \_\_\_\_\_

Twelve Thousand Eight Hundred and No/100-----dollars (\$ 12,800.00),

for the payment of whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents. The warranty bond shall be in the amount of five percent (5%) of the final construction cost amount (based on contractor's final pay request).

WHEREAS, Principal by written agreement is entering into an Agreement (Contract) with OWNER for the Hartland 2 Pump Station Upgrades, LFUCG Bid No. 67-2022 in accordance with Contract Documents prepared by Bell Engineering and GRW and dated May, 2022, which Agreement (Contract) is by reference made a part hereof, and is hereinafter referred to as the Agreement (Contract).

NOW, THEREFORE, THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that, if the Principal shall well and faithfully do and perform the required maintenance and shall indemnify and save harmless the OWNER against all claims, loss or damage, and expenses of reconstruction or additional work required to restore the Project to its acceptable condition within a period of one (1) year from the date of acceptance by OWNER of the Project, then this obligation shall be void; otherwise, it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the OWNER.

Any suit under this bond must be instituted before the expiration of one (1) year from the date on which final payment under the Contract falls due.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators, successors, or assigns of the OWNER.

IN WITNESS WHEREOF, this instrument is executed in six (6) counterparts, each one of (number)

which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

ATTEST:

Herrick Company, Inc.  
Principal

[Signature]  
(Principal) Secretary

By: Donna S. Herrick (s)  
Donna S. Herrick, CEO  
2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

[Signature]  
Witness as to Principal

2176 Waddy Rd  
Address  
Lawrenceburg, KY 40342

United Fire & Casualty Company  
Surety

ATTEST:

By: [Signature]  
Attorney-in-Fact

\_\_\_\_\_  
(Surety) Secretary

118 Second Ave SE  
Address  
Cedar Rapids, IA 52401



(SEAL)  
[Signature]  
Witness to Surety

Title: Attorney-in-Fact  
Surety

2307 River Rd, Ste 200  
Address  
Louisville, KY 40206

By: Leigh McCarthy

Title: Jennifer Edwards, Underwriting Assistant

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Agreement (Contract).

# **POWER OF ATTORNEY**

**(to be inserted)**



UNITED FIRE & CASUALTY COMPANY, CEDAR RAPIDS, IA  
 UNITED FIRE & INDEMNITY COMPANY, WEBSTER, TX  
 FINANCIAL PACIFIC INSURANCE COMPANY, LOS ANGELES, CA  
 CERTIFIED COPY OF POWER OF ATTORNEY  
 (original on file at Home Office of Company – See Certification)

Inquiries: Surety Department  
 118 Second Ave SE  
 Cedar Rapids, IA 52401

KNOW ALL PERSONS BY THESE PRESENTS, That United Fire & Casualty Company, a corporation duly organized and existing under the laws of the State of Iowa; United Fire & Indemnity Company, a corporation duly organized and existing under the laws of the State of Texas; and Financial Pacific Insurance Company, a corporation duly organized and existing under the laws of the State of California (herein collectively called the Companies), and having their corporate headquarters in Cedar Rapids, State of Iowa, does make, constitute and appoint

JAMES T. SMITH, JAMES H. MARTIN, BROOK T. SMITH, RAYMOND M. HUNDLEY, DEBORAH NEICHTER, MICHELE LACROSSE, JASON CROMWELL, LEIGH MCCARTHY, EACH INDIVIDUALLY

their true and lawful Attorney(s)-in-Fact with power and authority hereby conferred to sign, seal and execute in its behalf all lawful bonds, undertakings and other obligatory instruments of similar nature provided that no single obligation shall exceed \$75,000,000.00 and to bind the Companies thereby as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Companies and all of the acts of said Attorney, pursuant to the authority hereby given and hereby ratified and confirmed.

The Authority hereby granted shall expire the 23rd day of February, 2024 unless sooner revoked by United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

This Power of Attorney is made and executed pursuant to and by authority of the following bylaw duly adopted by the Boards of Directors of United Fire & Casualty Company, United Fire & Indemnity Company, and Financial Pacific Insurance Company.

**“Article VI – Surety Bonds and Undertakings”**

Section 2, Appointment of Attorney-in-Fact. “The President or any Vice President, or any other officer of the Companies may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Companies in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. The signature of any officer authorized hereby, and the Corporate seal, may be affixed by facsimile to any power of attorney or special power of attorney or certification of either authorized hereby; such signature and seal, when so used, being adopted by the Companies as the original signature of such officer and the original seal of the Companies, to be valid and binding upon the Companies with the same force and effect as though manually affixed. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority shall have full power to bind the Companies by their signature and execution of any such instruments and to attach the seal the Companies thereto. The President or any Vice President, the Board of Directors or any other officer of the Companies may at any time revoke all power and authority previously given to any attorney-in-fact.

IN WITNESS WHEREOF, the COMPANIES have each caused these presents to be signed by its vice president and its corporate seal to be hereto affixed this 23rd day of February, 2022



UNITED FIRE & CASUALTY COMPANY  
 UNITED FIRE & INDEMNITY COMPANY  
 FINANCIAL PACIFIC INSURANCE COMPANY

By: *Dennis J. Richmann*  
 Vice President

State of Iowa, County of Linn, ss:

On 23rd day of February, 2022, before me personally came Dennis J. Richmann to me known, who being by me duly sworn, did depose and say; that he resides in Cedar Rapids, State of Iowa; that he is a Vice President of United Fire & Casualty Company, a Vice President of United Fire & Indemnity Company, and a Vice President of Financial Pacific Insurance Company the corporations described in and which executed the above instrument; that he knows the seal of said corporations; 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 corporations and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporations.



*Patti Waddell*  
 Notary Public  
 My commission expires: 10/26/2022

I, Mary A. Bertsch, Assistant Secretary of United Fire & Casualty Company and Assistant Secretary of United Fire & Indemnity Company, and Assistant Secretary of Financial Pacific Insurance Company, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the bylaws and resolutions of said Corporations as set forth in said Power of Attorney, with the ORIGINALS ON FILE IN THE HOME OFFICE OF SAID CORPORATIONS, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

In testimony whereof I have hereunto subscribed my name and affixed the corporate seal of the said Corporations this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.



By: *Mary A. Bertsch*  
 Assistant Secretary,  
 UF&C & UF&I & FPIC

# POWER OF ATTORNEY

(to be inserted)

## 1.05 RISK MANAGEMENT PROVISIONS INSURANCE AND INDEMNIFICATION

### A. DEFINITIONS

The Contractor understands and agrees that the Risk Management Provisions of this Agreement (Contract) define the responsibilities of the Contractor to the Owner.

As used in these Risk Management Provisions, the terms "Contractor" and "Owner" shall be defined as follows:

1. "Contractor" means the contractor and its employees, agents, servants, owners, principals, licensees, assigns and subcontractors of any tier.
2. "Owner" means the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, boards, consultants, assigns, volunteers and successors in interest.

### B. INDEMNIFICATION AND HOLD HARMLESS PROVISION

1. It is understood and agreed by the parties that Contractor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Contractor under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.
2. Contractor shall indemnify, save, hold harmless and defend the Owner from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by Contractor's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the Contractor; and (b) not caused solely by the active negligence or willful misconduct of the Owner.
3. In the event the Owner is alleged to be liable based upon the above, Contractor shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by the Owner, which approval shall not be unreasonably withheld.
4. These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this Agreement (Contract).
5. The Work and services performed hereunder involve a Consent Decree as further explained in of Section 00100, provision 1.13 of these specifications. The provisions of that provision are incorporated herein by reference as if expressly stated.
6. Owner is a political subdivision of the Commonwealth of Kentucky. Contractor acknowledges and agrees that the Owner is unable to provide indemnity or otherwise save, hold harmless, or defend the Contractor in any manner.

C. FINANCIAL RESPONSIBILITY

The Contractor understands and agrees that it shall, prior to final acceptance of its Bid and the commencement of any Work, demonstrate the ability to assure compliance with the Indemnity Agreement and other provisions of this Agreement (Contract).

D. INSURANCE REQUIREMENTS

Bidders' attention is directed to the following insurance requirements, as Bidders must confer with their respective insurance agents, brokers, or carriers to determine in advance of Bid submission the availability of the insurance coverages and endorsements required herein. If an apparent low Bidder fails to comply strictly with the insurance requirements below, that Bidder shall be disqualified from the award of the Agreement (Contract), at the Owner's discretion.

1. Required Insurance Coverage

Contractor shall procure and maintain for the duration of this Agreement (Contract) the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to Owner in order to protect Owner against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the Work hereunder by Contractor. The cost of such insurance shall be included in any Bid.

<u>Coverage</u>	<u>Limits</u>
General Liability (Insurance Services Office Form CG 00 01)	\$1 million per occurrence \$2 million aggregate, or \$2 million combined single limit
Commercial Automobile Liability (Insurance Services Office Form CA 0001)	Combined single, \$1 million per occurrence
Worker's Compensation	Statutory
Employer's Liability	\$500,000

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). Owner shall be named as additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by Owner.
- c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless it is deemed not to apply by Owner.
- d. The General Liability Policy shall include an Explosion-Collapse Underground (XCU) endorsement.
- e. The General Liability Policy shall include a Pollution Liability and/or Environmental Casualty endorsement unless it is deemed not to apply by Owner.

- f. Owner shall be provided at least thirty (30) days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- g. Said coverage shall be written by insurers acceptable to Owner and shall be in a form acceptable to Owner. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.
- h. Owner requests that the Bidder obtain an Umbrella Liability endorsement to the CGL policy for a limit of liability of \$5,000,000.00 and that this CGL policy endorsement be renewed for one (1) year after completion of this project.

## 2. Renewals

After insurance has been approved by Owner, evidence of renewal of an expiring policy must be submitted to Owner, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

## 3. Deductibles and Self-Insured Programs

**IF CONTRACTOR INTENDS TO SUBMIT SELF-INSURANCE PLAN, IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO BID OPENING DATE.**

Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of Contractor's financial capacity to respond to claims. Any such programs or retentions must provide Owner with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If Contractor satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, Contractor agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of Bid and the commencement of work:

- a. Contractor's latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statement.
- c. Actuarial funding reports or retained losses.
- d. Risk Management Manual or a description of self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

## 4. Safety and Loss Control

Contractor shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and the Owner.

5. Verification of Coverage

Prior to award of bid, Contractor agrees to furnish Owner with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf. If requested, Contractor shall provide Owner copies of all insurance policies, including all endorsements.

6. Right to Review, Audit and Inspect

Contractor understands and agrees that Owner may review, audit and inspect any and all of Contractor's records and operations to insure compliance with these Insurance Requirements.

7. Contractor understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default under this Agreement (Contract). Contractor also agrees that Owner may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging Contractor for any such insurance premiums purchased, or suspending or terminating this Agreement (Contract).

1.06 CERTIFICATE OF LIABILITY INSURANCE

**(Insert Contractor's Certificate)**

END OF SECTION

**SECTION 00700 – GENERAL CONDITIONS**

(This page is intentionally left blank).

# 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 and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
  5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
  7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
  8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
  9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
  10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
  11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *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.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *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.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *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 Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

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

## 1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F 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 Paragraph 9.09 or any other provision of the Contract Documents.

### C. *Day:*

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

### D. *Defective:*

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

- a. does not conform to the Contract Documents; or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

- c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases 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. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

### 2.02 *Copies of Documents*

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

### 2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the

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

#### 2.04 *Starting the Work*

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

#### 2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
  - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
  - 2. a preliminary Schedule of Submittals; and
  - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

#### 2.06 *Preconstruction Conference; 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 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, 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 instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

#### 2.07 *Initial Acceptance of Schedules*

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

and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

### **ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE**

#### **3.01 *Intent***

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

#### **3.02 *Reference Standards***

- A. Standards, Specifications, Codes, Laws, and Regulations
  1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, 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 Contract Documents.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) 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 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
  - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Supplementing Contract Documents*

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

- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
  - 1. A Field Order;
  - 2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
  - 3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier 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
  - 2. 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.
- 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.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

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

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
  - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their 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.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
  - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
  - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
  - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

#### 4.04 *Underground Facilities*

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

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data 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 such information and data;
  - b. locating all Underground Facilities shown or indicated in the Contract Documents;
  - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
  - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

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

consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

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

#### 4.05 *Reference Points*

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

#### 4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their 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 any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. 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 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, 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: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 – BONDS AND INSURANCE

### 5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent 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 each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

### 5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also

meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

### 5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

### 5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
  - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
  - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
  - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

- a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
  - b. by any other person for any other reason;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
  6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, 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;
  2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
  3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
  4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
  5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
  6. include completed operations coverage:
    - a. Such insurance shall remain in effect for two years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
  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, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, 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.
  3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
  4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
  5. allow for partial utilization of the Work by Owner;
  6. include testing and startup; and
  7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,

members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

#### 5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their 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 Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (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 as trustee 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 utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

#### 5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

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

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

interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

**ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES**

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

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

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

#### 6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
  - 1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that:
      - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
  - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - 1) shall certify that the proposed substitute item will:
    - a) perform adequately the functions and achieve the results called for by the general design,
    - b) be similar in substance to that specified, and
    - c) be suited to the same use as that specified;
  - 2) will state:
    - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
    - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

- c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
  - 3) will identify:
    - a) all variations of the proposed substitute item from that specified, and
    - b) available engineering, sales, maintenance, repair, and replacement services; and
  - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute 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.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

#### 6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be

required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
  2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner,

Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (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 such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

#### 6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, 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.

#### 6.08 *Permits*

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

## 6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

## 6.10 *Taxes*

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

## 6.11 *Use of Site and Other Areas*

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

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
- 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 claim or action, legal or equitable, brought

by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

#### 6.12 *Record Documents*

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

#### 6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. 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, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. 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 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

#### 6.14 *Safety Representative*

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

#### 6.15 *Hazard Communication Programs*

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

#### 6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are

required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

#### 6.17 *Shop Drawings and Samples*

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

##### 1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

##### 2. *Samples:*

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

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

##### C. *Submittal Procedures:*

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

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

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

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

6.18 *Continuing the Work*

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

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

#### 6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
  - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
  - 1. observations by Engineer;
  - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
  - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  - 4. use or occupancy of the Work or any part thereof by Owner;
  - 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
  - 6. any inspection, test, or approval by others; or
  - 7. any correction of defective Work by Owner.

#### 6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, 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 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, 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.

#### 6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

## **ARTICLE 7 – OTHER WORK AT THE SITE**

### **7.01 *Related Work at Site***

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
  - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
  - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering 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. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

### **7.02 *Coordination***

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

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
  2. the specific matters to be covered by such authority and responsibility will be itemized; and
  3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

**ARTICLE 8 – OWNER'S RESPONSIBILITIES**

8.01 *Communications to Contractor*

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

8.02 *Replacement of Engineer*

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

8.03 *Furnish Data*

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

8.04 *Pay When Due*

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

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and

tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

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

8.07 *Change Orders*

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

8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *Evidence of Financial Arrangements*

A. 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.

8.12 *Compliance with Safety Program*

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 pursuant to Paragraph 6.13.D.

**ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION**

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

## 9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

## 9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

## 9.04 *Authorized Variations in Work*

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

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

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

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

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

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

**ARTICLE 10 – CHANGES IN THE WORK; CLAIMS**

10.01 *Authorized Changes in the Work*

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

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

#### 10.02 *Unauthorized Changes in the Work*

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

#### 10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
  - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
  - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
  - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

#### 10.04 *Notification to Surety*

- A. If 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.

#### 10.05 *Claims*

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

- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
  2. approve the Claim; or
  3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

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

### **11.01 *Cost of the Work***

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing

in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, 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, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, 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 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

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

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

3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
  4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
  5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

#### 11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
1. Contractor agrees that:
    - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
    - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

### 11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
  - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - 2. there is no corresponding adjustment with respect to any other item of Work; and
  - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

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

### 12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
  - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
  - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

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

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

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
  - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
  - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
  - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
  - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
  - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
  - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

## 12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

### 12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

### 13.01 *Notice of Defects*

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

### 13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, 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.

### 13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
  - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
  - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
  - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

### 13.04 *Uncovering Work*

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

- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

#### 13.05 *Owner May Stop the Work*

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

#### 13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

#### 13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract

Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
  2. correct such defective Work; or
  3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

### 13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's

recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

#### 13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

### **ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION**

#### 14.01 *Schedule of Values*

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

## 14.02 *Progress Payments*

### A. *Applications for Payments:*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

### B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations 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 9.07, 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 Documents; 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 moneys paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
  - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

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

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
  - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
  - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - c. there are other items entitling Owner to a set-off against the amount recommended; or
  - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
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 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

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

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

#### 14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
  - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

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

#### 14.07 *Final Payment*

##### A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
  - b. consent of the surety, if any, to final payment;
  - c. a list of all Claims against Owner that Contractor believes are unsettled; and
  - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner 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.

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

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

*C. Payment Becomes Due:*

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

**14.08** *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

**14.09** *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
  1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees

specified therein, or from Contractor's continuing obligations under the Contract Documents;  
and

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

## **ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION**

### *15.01 Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

### *15.02 Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
  1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
  2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
  3. Contractor's repeated disregard of the authority of Engineer; or
  4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
  1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
  2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
  3. complete the Work as Owner may deem expedient.

- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
  - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
  - 4. reasonable expenses directly attributable to termination.

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

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

**ARTICLE 16 – DISPUTE RESOLUTION**

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
  - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
  - 2. agrees with the other party to submit the Claim to another dispute resolution process; or
  - 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

## ARTICLE 17 – MISCELLANEOUS

### 17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

### 17.02 *Computation of Times*

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

### 17.03 *Cumulative Remedies*

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

### 17.04 *Survival of Obligations*

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

### 17.05 *Controlling Law*

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

### 17.06 *Headings*

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

## SECTION 00800 – SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700) (2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

### ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

#### 1.01 Defined Terms

##### 1.01.A.12 Replace in its entirety with the following:

“12. Contract Documents – The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), Contractor’s Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and Engineer’s written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or Hardcopies of the items listed in this paragraph are Contract Documents. Files in electronic format of text, data, graphics, and the like that may be furnished by Owner to Contractor are not Contract Documents.”

##### 1.01.A.44 First sentence, change: “in the opinion of the Engineer,” to “in the opinion of Engineer and Owner.”

#### 1.02 Terminology

Delete 1.02.E and replace with the following:

##### 1.02.E The words “furnish,” “furnish and install,” “install,” and “provide” or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean “furnish and install complete in place and ready for service.”

Add the following:

##### 1.02.G The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract (EJCDC C-700, (2007 Edition) have the meanings assigned to them in the General Conditions.

### ARTICLE 2 – PRELIMINARY MATTERS

Add the following:

#### 2.00 Execution of Agreement

##### 2.00.A At least six (6) counterparts of the Agreement will be executed and delivered by the Contractor to the OWNER within fifteen (15) days of the Notice of Award and receipt of the Contract Documents by the Contractor for execution; and OWNER will execute and deliver one counterpart to Contractor within ten (10) days of receipt of the executed Agreement from Contractor.

- 2.01 Delivery of Bonds and Evidence of Insurance
- 2.01.B Replace "Before any Work at the Site is started, Contractor and Owner shall each deliver to the other" with "When Contractor delivers the executed counterparts of the Agreement to the Owner, Contractor shall deliver to the Owner," and replace "and Owner respectively are" with "is."
- 2.02 Copies of Documents
- 2.02A Revise as follows:
- Owner shall furnish to Contractor up to ~~ten~~ three printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.
- 2.03 Commencement of Contract Times; Notice to Proceed:
- 2.03.A Delete in its entirety and substitute the following:
- 2.03.A The Contract Time will commence to run on the day indicated in the Notice to Proceed; but in no event will the Contract Time 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. By mutual consent of the parties to the Contract, these time limits may be changed.

### ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING AND REUSE

- 3.01 Intent

Add the following:

- 3.01.D It is the intent of the Specification and Contract Documents to obtain an operable Project. Equipment, components, systems, etc., therein shall be made operable by the Contractor.
- 3.01.E The Contract Drawings may be supplemented from time to time with additional Drawings by the Engineer as may be required to illustrate the work or, as the work progresses, with additional Drawings, by the Contractor, subject to the approval of the Engineer. Supplementary Drawings, when issued by the Engineer or by the Contractor, after approval by the Engineer, shall be furnished in sufficient quantity to all those who, in the opinion of the Engineer, are affected by such Drawings.

- 3.03 Reporting and Resolving Discrepancies

Add the following:

- 3.03.B.2 In resolving such conflicts, errors and discrepancies, the Contract Documents shall be given precedence in the following order:
- a. Agreement
  - b. Field and Change Orders
  - c. Addenda
  - d. Special Conditions
  - e. Instruction to Bidders
  - f. General Conditions
  - g. Project Specifications and Drawings
  - h. LFUCG standard specifications and standard details

Figure dimensions on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

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

4.02 Subsurface and Physical Conditions

4.02.A Delete: "the Supplementary Conditions," and substitute "Section 00320 – Geotechnical Data."

4.02.B Second sentence, delete: "Supplementary Conditions" and substitute "Specifications and Contract Drawings."

4.04 Underground Facilities

Add the following:

4.04.B.3 The Owner, Engineer, and Engineer's Consultants shall not be liable to Contractor for any claims, costs, losses or damages incurred or sustained by Contractor on or in connection with any other project or anticipated project.

4.06 Hazardous Environmental Condition at Site

4.06.A First sentence, delete "Supplementary Conditions" and substitute "Section 00300 – Information Available To Bidders."

4.06.B Second sentence, delete "Supplementary Conditions:" and substitute "Specifications and Contract Drawings."

4.06.G First sentence, insert "Kentucky" between "by" and "Laws."

Add the following at the end of this section: "The parties understand and acknowledge that no Kentucky case, statute, or Constitutional provision authorizes a local government to indemnify a contractor and that this contract provision may be unenforceable."

ARTICLE 5 – BONDS AND INSURANCE

Delete Article 5 in its entirety and substitute the following:

5.01 Performance and Payment Bonds

5.01A Concurrent with execution of the Agreement and within fifteen (15) days of the Notice of Award, the successful Contractor shall procure, execute and deliver to the OWNER and maintain, at his own cost and expense, the following bonds in the forms attached, of a surety company approved by the State of Kentucky as a Surety:

5.01.B Performance Bond – in an amount not less than 100% of the total amount payable to the Contractor by the terms of the Contract as security for the faithful performance of the work. Bond must be valid until one (1) year after the date of issuance of the Certificate of Substantial Completion.

5.01.C Payment Bond – in an amount not less than 100% of the total amount payable to the Contractor by the terms of the Contract as security for the payment of all persons performing labor and furnishing material in connection with the work. Bond must be valid until one (1) year after date of issuance of the Certificate of Substantial Completion.

- 5.01.D All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.
- 5.01.E If the Surety on any Bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business in the State of Kentucky is revoked, the Contractor shall within five (5) days thereafter substitute another Bond or Surety, both of which shall be acceptable to the OWNER.
- 5.02 Insurance Requirements  
See Section 00600 – Bonds and Certificates for Insurance Requirements.
- 5.03 Contractor's Liability Insurance  
See Section 00600 – Bonds and Certificates for Insurance Requirements.
- 5.04 Indemnification Agreement  
See Section 00600 – Bonds and Certificates for Indemnification.

#### ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

- 6.06 Concerning Subcontractors, Suppliers and Others
- 6.06.B First sentence, delete: "If the Supplementary Conditions," and substitute "The Bid Form." The seventh line, delete "Supplementary Conditions," and substitute "Bid Form."
- 6.06.G Delete in its entirety and substitute the following:
- 6.06.G All work performed for Contractor by a Subcontractor shall be pursuant to an appropriate agreement between the Contractor and Subcontractor. The Subcontractor shall not commence work until Contractor has obtained all insurance as required by Paragraphs 5.02 through 5.03 inclusive.
- 6.07 Patent Fees and Royalties
- 6.07 Delete 6.07.A, 6.07.B, and 6.07.C in their entirety and substitute the following:
- 6.07.A Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work of any invention, design, process, products or device which is the subject of patent rights or copyrights held by others. Contractor shall indemnify and hold harmless OWNER and Engineer, and anyone directly or indirectly employed by either of them from and against all claims, damages, losses and expenses, including attorney's fees, arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or furnished by him in fulfillment of the requirements of this Contract. In the event of any claim or action by law on account of such patents or fees, it is agreed that the OWNER may retain out of the monies which are, or which may become due the Contractor under this Contract, a sum of money sufficient to protect itself against loss, and to retain the same until said claims are paid or are satisfactorily adjusted.
- 6.08 Permits
- 6.08.A Third sentence of paragraph delete, "or if there are no Bids.....to the Work.," and substitute "and the Contractor shall pay all charges of utility owners for connections to the Work."
- 6.09 Laws and Regulations
- 6.09.B Delete 6.09B in its entirety and substitute the following:

- 6.09.B If Contractor observes that the Specifications or Drawings are at variance with any Laws or Regulations, he shall give Engineer prompt written notice thereof. If Contractor performs any Work knowing it to be contrary to such Laws or Regulations, and without such notice to Engineer, he shall bear all costs arising therefrom. The Contractor shall, at all times, observe and comply with and shall cause all his agents and employees and all his Subcontractors to observe and comply with all such existing Laws or Regulations, and shall protect and indemnify the OWNER and the Engineer and the municipalities in which work is being performed, and their officers and agents against any claim, civil penalty, fine or liability arising from or based on the violation of any such Law or Regulation, whether by himself or his employees or any of his Subcontractors.
- 6.13 Safety and Protection
- 6.13.B First sentence, after "CONTRACTOR" add the following:  
 ", subject to provisions 6.09.B,"
- 6.19 Contractor's General Warranty and Guarantee
- 6.19.A After the first sentence of Section 6.19.A add the following:  
 "All materials or equipment delivered to the site shall be accompanied by certificates, signed by an authorized officer of the supplier, and notarized guaranteeing that the materials or equipment conform to specification requirements, Such certificates shall be immediately turned over to the Engineer. Materials or equipment delivered to the site without such certificates will be subject to rejection. The warranty and guarantee period shall be for a period of one (1) year, or such longer period as may be prescribed by Law, from the date of Substantial Completion."
- 6.20 Indemnification
- 6.20.A First sentence, after "...claims, costs" add the following:  
 ", civil penalties, fines,"
- 6.20.C Add the following:
- 6.30.C.3 Nothing in the Contract Documents shall create or give to third parties any claim or right of action against the Contractor, the OWNER or the Engineer beyond such as may legally exist irrespective of the Contract.

ARTICLE 7 – OTHER WORK AT THE SITE

- 7.02 Coordination  
 Delete in its entirety.
- 7.03 Legal Relationships
- 7.03.B Delete "Owner and."
- 7.03.C Delete "Owner and."

## ARTICLE 8 – OWNER’S RESPONSIBILITIES

- 8.02 Replacement of Engineer
- 8.02.A Delete in its entirety.
- 8.06 Insurance
- 8.06.A Delete in its entirety.
- 8.11 Evidence of Financial Arrangements
- 8.11.A Delete in its entirety.

## ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION

- 9.01 OWNER’S Representative
  - 9.01.A Delete in its entirety and substitute the following:
  - 9.01.A Engineer will be the OWNER’S representative during the construction period, and his instructions shall be carried into effect promptly and efficiently.
  - 9.03 Project Representative
- Add the following:
- 9.03.B The Resident Project Representative will serve as the Engineer’s liaison with the Contractor, working principally through the Contractor’s resident superintendent to assist him in understanding the intent of the Contract Documents.
  - 9.03.C The Resident Project Representative shall conduct on-site observations of the work in progress to confirm that the work is proceeding in accordance with the Contract Documents. He will verify that tests, equipment and systems start-ups and operating maintenance instructions are conducted as required by the Contract Documents. He will have the authority to disapprove or reject defective work in accordance with Article 13.
  - 9.09 Limitations on Engineer’s Authority and Responsibilities

Add the following:

- 9.09.F Except upon written instructions of the Engineer, the Resident Project Representative:
  1. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
  2. Shall not exceed limitations of Engineer’s authority as set forth in the Contract Documents.
  3. Shall not undertake any of the responsibilities of Contractor, Subcontractors, or Contractor’s superintendent, or expedite the Work.
  4. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract.
  5. Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.

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

- 11.01 Cost of the Work
- 11.01.A Last sentence, following "...in Paragraph 11.01.B," insert the following:
- "or claims for extra cost shall be considered based on an escalation of labor costs throughout the period of the Contract,"
- 11.01.A.2 Add the following at the end of the paragraph:
- "No claims for extra cost shall be considered based on an escalation of material costs throughout the period of the Contract."
- 11.01.A.3 Delete second sentence "If required...be acceptable."
- 11.01.A.4 Delete in its entirety.
- 11.01.A.5.a Delete in its entirety.
- 11.01.A.5.c Add the following before last sentence of paragraph:
- "These rates shall include all fuel, lubricants, insurance, etc. Equipment rental charges shall not exceed the prorated monthly rental rates listed in the current edition of the 'Compilation of Rental Rates for Construction Equipment' as published by the Associated Equipment Distributors. Charges per hour shall be determined by dividing the monthly rates by 176."
- 11.01.A.5.f Delete in its entirety.
- 11.01.A.5.g Delete in its entirety.
- 11.01.A.5.h Delete in its entirety.
- 11.03 Unit Price of Work:
- 11.03.D.1 Delete "materially and significantly," and insert "by more than plus or minus twenty percent (20%)."

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

- 12.01 Change of Contract Price
- 12.01.A Add the following after the last sentence:
- Section 01025 shall be given precedence over section 00700 regarding changes in contract price.
- 12.03 Delays
- 12.03.B Delete in its entirety and substitute the following:
- 12.03.B Delays beyond the control of the Contractor, as provided in paragraph 12.03.A, shall not entitle the Contractor to obtain additional project overhead costs unless such delays extend the Project as described below:
1. beyond the original Contract Times,

2. beyond the Contract Times for which the overhead costs have been previously approved, or
3. beyond Contract Times that are extended as a result of delays described in 12.03.C.

For the purpose of this paragraph, overhead costs shall be the supplemental costs defined in 11.01.A.5, paragraphs a, b, c, g, h and i. The Contractor's bid shall include all overhead costs as necessary to be on the Project for the original Contract Times.

12.03.C Add the following after the last sentence:

If the Contractor and the Owner cannot agree upon an equitable adjustment in the Contract Times, delays described in this Paragraph 12.03.C shall be determined as follows:

1. 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.
2. 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.
3. 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.
4. 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.

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

13.03 Tests and Inspections

13.03.B Delete in its entirety and substitute the following:

13.03.B Contractor shall employ and pay for inspections and testing services specifically noted as such in the Contract.

13.03.C Delete in its entirety and substitute the following:

13.03.C If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be specifically inspected, tested, or approved by some public body, Contractor shall assume full responsibility therefore, pay all costs in connection therewith and furnish Engineer the required certificates of inspection, testing or approval.

Add the following:

- 13.03.G The OWNER reserves the right to independently perform at its own expense, laboratory tests on random samples of material or performance tests on equipment delivered to the site. These tests if made will be conducted in accordance with the appropriate referenced standards or Specification requirements. The entire shipment represented by a given sample, samples or piece of equipment may be rejected based on the failure of samples or pieces of equipment to meet specified test requirements. All rejected materials or equipment shall be removed from the site, whether stored or installed in the Work, and the required replacement shall be made, all at no additional cost to the OWNER.
- 13.05 OWNER May Stop the Work:
- 13.05A First sentence, after "...conform to the Contract Documents," insert "or if the Work interferes with the operation of the existing facility."
- 13.06 Correction or Removal of Defective Work

Add the following:

- 13.06.C At any time during the progress of the Work and up to the date of final acceptance, the Engineer shall have the right to reject any work which does not conform to the requirements of the Contract Documents, even though such work has been previously inspected and paid for. Any omissions or failure on the part of the Engineer to disapprove or reject any Work or materials at the time of inspection shall not be construed as an acceptance of any defective work or materials.

#### ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

- 14.01 Schedule of Values

Add the following:

- 14.01.B The Contractor shall submit for the Engineer's approval, a complete breakdown of all Lump Sum Items in the Proposal. This breakdown, modified as directed by the Engineer, will be used as a basis for preparing estimates and establishing progress payments.
- 14.02 Progress Payments
- 14.02.A.3 Delete in its entirety and replace with the following:
- 14.02.A.3 Progress payment request shall include the percentage of the total amount of the Contract which has been completed from initiation of construction of the Project to and including the last day of the preceding month, or other mutually agreed upon day of the month accompanied by such data and supporting evidence as OWNER or Engineer may require.

Add the following:

- 14.02.A.4 Forms to be used shall be prepared by the Contractor and submitted to the Engineer for approval.
- 14.02.A.5 At the option of the OWNER, partial payment up to the estimated value, less retainage, may be allowed for any materials and equipment not incorporated in the Work, pursuant to the following conditions:
- a. Equipment or materials stored on the site shall be property stored, protected and maintained.

- b. For any partial payment, the Contractor shall submit, with his monthly progress payment from each material or equipment manufacturer, bills or invoices indicating actual material cost.
  - c. Contractor shall submit evidence that he has paid for materials or equipment stored and for which the Engineer has authorized partial payment and previous progress payments, prior to submission to the next monthly payment request. (See example letter at the end of this Section 00800).
- 14.02.A.6 The OWNER will retain ten percent (10%) of the amount of each such estimate until Work covered by the Contract is fifty percent (50%) complete. After fifty percent (50%) of the Work of the original Contract has been completed as evidenced by approved Partial Payment Requests exclusive of stored materials and in the opinion of the OWNER, satisfactory progress is being made, the OWNER may adjust future partial payment so that five percent (5%) of the original Contract Price is retained.
- 14.02.A.7 If the OWNER determines it is appropriate to reduce retainage, the method used for such adjustment shall be to fix retainage at five percent (5%) of the original Contract amount (when the work is 50% complete) and to pay all subsequent Partial Payment Requests to the full approved amount. The intent of such an adjustment is to gradually reduce retainage to five percent (5%) of the original Contract amount when the work is one hundred percent (100%) complete.
- 14.02.A.8 The OWNER may reinstate up to ten percent (10%) retainage if it is determined that the Contractor is not making satisfactory progress or there is other specific cause for retainage.
- 14.02.B.1 Review of Applications:  
First sentence delete "10 days," insert "30 days."
- 14.02.C.1 Payment Becomes Due:  
First sentence delete "Ten days" and insert "Thirty Days."
- 14.02.D.3 Delete in its entirety.
- 14.04 Substantial Completion
- 14.04 Delete paragraphs A, B, C, and D in their entirety and substitute the following:
- 14.04.A Contractor may, in writing to OWNER and Engineer, certify that the entire Project is substantially complete and request that Engineer issue a certificate of Substantial Completion. Within a reasonable time thereafter, OWNER, Contractor and Engineer shall inspect the Project to determine the status of completion. If Engineer and OWNER do not consider the Project substantially complete, Engineer will notify Contractor in writing giving his reasons, therefore. If Engineer and OWNER consider the Project substantially complete, Engineer will prepare and deliver to OWNER a tentative certificate of Substantial Completion and the responsibilities between OWNER and Contractor for maintenance, heat and utilities. There shall be attached to the certificate a tentative list of items to be completed or corrected before Final Completion, and the certificate shall fix the time within which such items shall be completed or corrected, said time to be within Contract Time. No warranties associated with the Project shall start until issuance of the certificate of Substantial Completion.
- 14.04.B In accordance with KRS 371.410, Substantial Completion is the point at which, as certified in writing by OWNER, a project is at the level of completion, in strict compliance with the contract, where:
1. Necessary approval by public regulatory authorities has been given.

2. The Owner has received all required warranties and documentation; and
3. The Owner may enjoy beneficial use or occupancy and may use, operate, and maintain the project in all respects, for its intended purpose.

14.05 Partial Utilization

14.05.A Delete in its entirety and substitute the following:

14.05.A Partial Utilization is also referred to as "Beneficial Occupancy" and "In Service Date." Partial Utilization (Beneficial Occupancy) will occur before Substantial Completion of entire Project. Prior to Substantial Completion of the entire Project, OWNER may request Contractor to permit them to use a specified part of the Project which they believe they may use without significant interference with construction of the other parts of the Project. Prior to requesting Beneficial Occupancy all testing shall be complete and passed, all training shall be complete, and that part of the Project shall be operational for its functional design. If Contractor agrees, Contractor shall certify to OWNER and Engineer that said part of the Project has achieved Beneficial Occupancy and request the Engineer to issue a memorandum declaring Beneficial Occupancy for that part of the Project. Within a reasonable time thereafter, OWNER, Contractor, and Engineer shall inspect that part of the Project to determine its status of completion. If Engineer and OWNER do not consider that it has achieved Beneficial Occupancy, Engineer will notify Contractor in writing giving his reasons therefor. If Engineer and OWNER consider that part of the Project to have reached Beneficial Occupancy, Engineer will execute and deliver to OWNER and Contractor a memorandum to that effect, fixing the date of Beneficial Occupancy and the responsibility between OWNER and Contractor for maintenance, heat, and utilities, as it pertains to that part of the Project.

14.05.B Equipment Warranties will not begin until after successful start-up, training, and acceptance by Owner for Substantial Completion of the entire Project. Any manufacturer's request to initiate warranty period earlier than Owner's acceptance will not be valid.

#### ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 Owner May Suspend Work

Add the following:

15.01.B Should the OWNER suspend Work due to repeated unsafe Work conducted by the Contractor, which is confirmed by subsequent inspection by OSHA, the Contractor shall not be allowed any adjustment in Contract Price or extension of Contract Time attributed to the delay.

15.02 Owner May Terminate for Cause

15.02.A.2 Add the following to the end of first sentence after "jurisdiction":

"(including those governing employee safety)"

15.02D Delete in its entirety.

Add the following:

15.05 Assignment of Contract

15.05 Contractor shall not assign, transfer, convey or otherwise dispose of the Contract, or of his legal right, title, or interest in or to the same or to any part thereof, without the prior written consent of the OWNER. Contractor shall not assign by power of attorney or otherwise any monies due him and payable under this Contract without the prior written consent of the

OWNER. Such consent, if given, will in no way relieve the Contractor from any of the obligations of this Contract. OWNER shall not be bound to abide by or observe the requirements of any such assignment.

#### ARTICLE 16 – DISPUTE RESOLUTION

16.01 Methods and Procedures

16.01.A Replace the first sentence with the following:

“If required by applicable laws and regulations, and not specifically excluded elsewhere, either OWNER or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding.”

#### ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice

Add the following:

17.01.B No oral statement of any person whomsoever shall in any manner or degree modify or otherwise affect the terms of this Contract. Any notice to the Contractor, from OWNER and Engineer, relative to any part of this Contract shall be in writing.

Add the following:

17.07 Claims for Injury or Damage

17.07.A Should OWNER or Contractor suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 17.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.08 Non-Discrimination in Employment

17.08.A The Contractor shall comply with the following requirements prohibiting discrimination:

17.08.A.1 That no person (as defined in KRS 344.010) shall Bid on Lexington-Fayette Urban County Government Construction projects or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of Bids, said person shall have been found, by declaratory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declaratory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to KRS 344.200 has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

17.08.A.2 That it is an unlawful practice for any employer:

- a. to fail or refuse to hire, or to discharge any individual or otherwise to discriminate against an individual, with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, age, or national origin; or

- b. to limit, segregate or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee because of such individual's sex, race, color, religion, age, or national origin.
- 17.08.A.3 That it is unlawful practice for an employer, labor organization, or joint-labor management committee controlling apprenticeship or other training or retraining, including on-the-job training programs to discriminate against an individual because of his race, color, religion, sex, age, or national origin in admission to, or employment in, any program established to provide apprenticeship or other training.
- 17.08.A.4 That a copy of the LFUCG Ordinance shall be available for viewing at the Lexington-Fayette Urban County Government offices.
- 17.09 Temporary Street Closing or Blockage
- 17.09.A The Contractor will notify the Engineer, Owner, and LFUCG Division of Traffic Engineering at least 72 hours prior to making any temporary street closing or blockage. This will permit orderly notification to all concerned public agencies.
- 17.10 Percentage of Work Performed by Prime Contractor
- 17.10.A The Contractor shall perform on site, and with its own organization, Work equivalent to at least fifty percent (50%) of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the Contractor requests a reduction, and the Engineer determines that the reduction would be to the advantage of the OWNER.
- 17.11 Clean-Up
- 17.11.A Clean-up shall progress, to the greatest degree practicable, throughout the course of the Work. The Work will not be considered as completed, and final payment will not be made, until the right-of-way and all ground occupied or affected by the Contractor in connection with the Work has been cleared of all rubbish, equipment, excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage-ways shall be left unobstructed, and in such a condition that drift will not collect, or scour be induced.
- 17.12 General
- 17.12.A The duties and obligations imposed by the Contract Documents and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon Contractor, and all of the rights and remedies available to OWNER and Engineer, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and 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. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.
- 17.13 Debris Disposal
- 17.13.A For all LFUCG projects any fill, trash, construction demolition debris, yard waste, dirt or debris of any kind that is removed from the project site must be disposed of in accordance with local, state, and federal regulations. The disposal site or facility must be approved in

advance by the LFUCG and disposal documentation is required. The Contractor will be responsible for payment of any fines associated with improper disposal of material removed from the project site.

17.14 Maintenance of Traffic

17.14.A Traffic shall be maintained on state and LFUCG highways and streets at all times during construction. For all work that impacts traffic, the Contractor shall obtain a traffic permit at least two (2) working days in advance from the Division of Traffic Engineering (859) 258-3489.

17.14.B It shall be the Contractor's responsibility to notify LFUCG Police Department's Safety Officer (859) 258-3600 prior to performing any construction work, which might interfere with traffic or compromise the public safety.

Add the following:

ARTICLE 18 – LIQUIDATED DAMAGES FOR FAILURE TO COMPLETE WORK ON TIME

18.01 Liquidated Damages

18.01.A If the Contractor shall fail to complete the Work within the Contract Time, or extension of time granted by the OWNER in accordance with Article 12, then the Contractor will pay to the OWNER the amount for liquidated damages as specified in the Contract for each calendar day that the Contractor shall be in default after the time stipulated in the Contract Documents.

(Reference Section 00800, Article 14.02.A.5.c)

\*\*\*PUT ON CONTRACTOR'S LETTERHEAD\*\*\*

DATE: \_\_\_\_\_

TO: OWNER: Lexington-Fayette Urban County Government

ADDRESS: Division of Water Quality

125 Lisle Industrial Road, Suite 180

Lexington, Kentucky 40511

RE: Project Title: Hartland 2 Pump Station Upgrades  
 Lexington Fayette Urban County Government  
 Lexington, Kentucky  
 LFUCG Bid No.: 67-2022

We hereby certify that the labor and materials listed on this request for payment have been used in the construction of this work, or that all materials included in this request for payment and not yet incorporated into the construction are now on the site or stored at an approved location with proper insurance to protect these stored materials; and that all lawful charges for labor, materials etc., covered by previous Certificates of Payment have been paid and that all other lawful charges on which this request for payment is based have been paid for in full or will be paid for in full from the funds received in payment of this request within ten (10) calendar days from receipt of this partial payment from the OWNER.

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

BY: \_\_\_\_\_

TIME: \_\_\_\_\_

State of: \_\_\_\_\_

County of: \_\_\_\_\_

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

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

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

END OF SECTION

**SECTION 00890 – PERMITS**

**See attached KY DOW Approval Letter**

**END OF SECTION**

ANDY BESHEAR  
GOVERNOR



REBECCA W. GOODMAN  
SECRETARY

**ENERGY AND ENVIRONMENT CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601  
TELEPHONE: 502-564-2150  
TELEFAX: 502-564-4245

May 12, 2022

Robert Peterson, P.E.  
LFUCG-Division of Water Quality  
125 Lisle Industrial Ave  
Lexington, KY 40511

Re: Hartland 2 PS Upgrades  
Jessamine County, Kentucky  
Lexington West Hickman WWTP  
Activity ID #: 2295, APE20220007  
Receiving Treatment Plant KPDES #: KY0021504

Dear Mr. Peterson:

We have reviewed the plans and specifications for the above referenced project. The plans include upgrades of the Hartland 2 pump station. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit.

If we can be of any further assistance or should you wish to discuss this correspondence, please do not hesitate to contact Daniel Kulik at 502-782-6998.

Sincerely,

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

Terry Humphries, P.E.  
Supervisor, Engineering Section  
Water Infrastructure Branch  
Division of Water

TH / DK  
Enclosures

c: Jessamine County Health Department  
Bell Engineering  
Division of Plumbing

**Sewer Line Construction**  
Lexington West Hickman WWTP  
Facility Requirements

Activity ID No.: APE20220007

**GACT000000155 (Hartland 2 PS Upgrades) Duplex pump station with pumps capable of 150 gpm at 46 ft TDH each:**

**Submittal/Action Requirements:**

Condition No.	Condition
S-1	When this project is completed, the applicant shall: submit written certification: Due 30 calendar days after Completion of Construction to the Division of Water that the facilities have been constructed and tested in accordance with the approved plans and specifications and the approval conditions. Such certification shall be signed by a registered professional engineer. Failure to certify may result in penalty assessment and/or future approvals being withheld. [401 KAR 5:005 Section 24(2)]

**Narrative Requirements:**

Condition No.	Condition
T-1	The plans and specifications submitted for the project are approved by the Department of Environmental Protection as to sanitary features, subject to the requirements contained within the permit. [401 KAR 5:005 Section 24(3)]
T-2	Authority to construct these sewers is hereby granted. This approval is issued under the provisions of KRS Chapter 224.10-100 (19) regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any permits or licenses required by this cabinet and other state, federal, and local agencies. [401 KAR 5:005 Section 24(3)(c)2]
T-3	A permit to construct a facility shall be effective and valid for twenty-four (24) months upon issuance unless otherwise conditioned. If construction has not commenced within twenty-four (24) months following a permit's issuance, a new permit shall be obtained before construction may begin. [401 KAR 5:005 Section 24(1)]
T-4	The permit is issued to the applicant, and the permittee shall remain the responsible party for compliance with all applicable statutes and administrative regulations until a notarized applicable change in ownership certification is submitted and the transfer of ownership is acknowledged by the cabinet. [401 KAR 5:005 Section 28(1)]
T-5	The issuance of a permit by the cabinet does not convey any property rights of any kind or any exclusive privilege. [401 KAR 5:005 Section 24(5)]
T-6	There shall be no deviations from the plans and specifications submitted with the application or the conditions specified, unless authorized in writing by the cabinet. [401 KAR 5:005 Section 24(3)(b)1]

**Sewer Line Construction**  
Lexington West Hickman WWTP  
Facility Requirements

Activity ID No.:APE20220007

**GACT000000155 (Hartland 2 PS Upgrades) Duplex pump station with pumps capable of 150 gpm at 46 ft TDH each:**

**Narrative Requirements:**

Condition No.	Condition
T-7	For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250, if the following requirements of 401 KAR 4:050 Section 2 are met:  1) During the construction of the crossing, no material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc., unless prior approval has been obtained from the cabinet. 2) The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside of the flood plain, unless the applicant has received prior approval from the cabinet to fill within the flood plain. 3) For subfluvial crossings of erodible channels, there shall be at least thirty (30) inches of clear cover above the top of the pipe or conduit at all points. 4) For subfluvial crossings of nonerodible channels, there shall be at least six (6) inches of clear cover above the top of the pipe or conduit at all points, and the pipe or conduit shall be encased on all sides by at least six (6) inches of concrete. 5) The weight of a pipe and its contents during normal operating conditions at all points must exceed that of an equal volume of water, or the applicant must provide the division with sufficient information to show that the pipe and joints have sufficient strength.  Contact the Floodplain Management Section of the Surface Water Permits Branch at (502) 564-3410 with any question on these requirements. [KRS 151.250 & 401 KAR 4:060]
T-8	If any portion of the sewer project will be constructed in or along a stream or wetland, contact the Water Quality Certification Section, located within the Water Quality Branch, at 502-564-3410, to determine if a 401 certification will be required. [KRS 224.16-050]
T-9	Facilities shall be designed and constructed in accordance with the "Recommended Standards for Wastewater Facilities" of the Great Lakes-Upper Mississippi River Board of State Public Health and Environmental Managers, commonly referred to as "Ten States' Standards", 2004 edition. [401 KAR 5:005 Section 7(1)(a)]
T-10	Gravity sewer lines and force mains shall be designed and constructed to give mean velocities, when flowing full, of not less than two (2) feet per second. Velocity calculations shall incorporate roughness coefficients pursuant to 401 KAR 5:005 Section 8(8). [401 KAR 5:005 Section 8(8)]
T-11	An audible and visible alarm shall be provided at any proposed wastewater pump station. [Ten States (WW) 46]
T-12	All proposed pump station wetwells shall be sized such that, based on the average flow, the time to fill the wetwell from the pump-off elevation to the pump-on elevation shall not exceed thirty (30) minutes. [401 KAR 5:005 Section 8(16)]

**Sewer Line Construction**  
Lexington West Hickman WWTP  
Facility Requirements

Activity ID No.: APE20220007

**GACT0000000155 (Hartland 2 PS Upgrades) Duplex pump station with pumps capable of 150 gpm at 46 ft TDH each:**

**Narrative Requirements:**

Condition No.	Condition
T-13	All pump stations shall provide a minimum of two (2) hours of detention time, based on the average design flow, above the high level alarm elevation or provide an alternate source of power with wetwell storage providing sufficient time for the alternate power source to be activated. [401 KAR 5:005 Section 8(18)]

**Sewer Line Construction**  
Lexington West Hickman WWTP  
Facility Requirements

Activity ID No.:APE20220007

**PORT0000000257 (Hartland 2 PS Upgrades) Duplex pump station with pumps capable of 150 gpm at 46 ft TDH each:**

**Narrative Requirements:**

Condition No.	Condition
T-1	Pumps and force mains handling raw wastewater shall be capable of passing spheres of at least three (3) inches in diameter. Pump suction and discharge openings, as well as sewer force main pipe, shall be a minimum of four (4) inches in diameter. The above requirements do not apply to grinder pump stations or force mains directly connected to grinder pump stations. [Ten States (WW) 42.33, 49.1]

**SECTION 00910 - ADDENDA**

**(Insert Addenda as they are issued.)**

**END OF SECTION**



**ADDENDUM #1**

Bid Number: **#67-2022**

Date: June 29, 2022

Subject: Hartland 2 Pump Station Upgrade

Address inquiries to:  
Brian Marcum  
[brianm@lexingtonky.gov](mailto:brianm@lexingtonky.gov)  
(859) 258-3325

**TO ALL PROSPECTIVE SUBMITTERS:**

Please be advised of the following clarifications to the above referenced Bid. Please note the date change for the mandatory Bid meeting.

**1. SPECIFICATIONS**

**A. SPECIFICATION SECTION 00100 – ADVERTISEMENT FOR BIDS**

Replace text in Article 1.12 – Pre-Bid Meeting and Site Visit with the following:

“A mandatory pre-Bid meeting will be held in the Cane Room Conference room at 1:30 p.m. local time, Wednesday, July 6, 2022, at LFUCG DWQ offices at 125 Lisle Industrial, Lexington Kentucky 40511. A Microsoft Teams meeting will be available for those who cannot make the in person meeting. Shortly after the pre-Bid meeting, there will be a site visit at the existing Hartland 2 Pump Station. The gate will be opened to allow access to the station.

Teleconference link:

Microsoft Teams meeting Join on your computer or mobile app Click here to join the meeting

<[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_ODQ0ZiNINDAtMGEzOS00MDg4LTIiYTktNWlwZDcwOGM3NiZl%40thread.v2/0?context=%7b%22Tid%22%3a%22083fc4d2-72ad-412b-ae7d-6b81b83916dd%22%2c%22Oid%22%3a%22148017a5-c42e-4f7e-864e-3de5bb20c0bc%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODQ0ZiNINDAtMGEzOS00MDg4LTIiYTktNWlwZDcwOGM3NiZl%40thread.v2/0?context=%7b%22Tid%22%3a%22083fc4d2-72ad-412b-ae7d-6b81b83916dd%22%2c%22Oid%22%3a%22148017a5-c42e-4f7e-864e-3de5bb20c0bc%22%7d)>

Or call in (audio only)

+1 502-208-2565,,364383716#

<tel:+15022082565,,364383716#>



MAYOR LINDA GORTON



**LEXINGTON**

TODD SLATIN  
DIRECTOR  
CENTRAL PURCHASING

United States, Louisville

**2. DRAWINGS**

N/A

A handwritten signature in black ink that reads "Todd Slatin".

Todd Slatin, Director  
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.  
This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

SIGNATURE OF BIDDER: \_\_\_\_\_





**ADDENDUM #2**

Bid Number: #67-2022

Date: July 14, 2022

Subject: Hartland 2 Pump Station Upgrades

Address inquiries to:  
Brian Marcum  
[brianm@lexingtonky.gov](mailto:brianm@lexingtonky.gov)  
(859) 258-3325

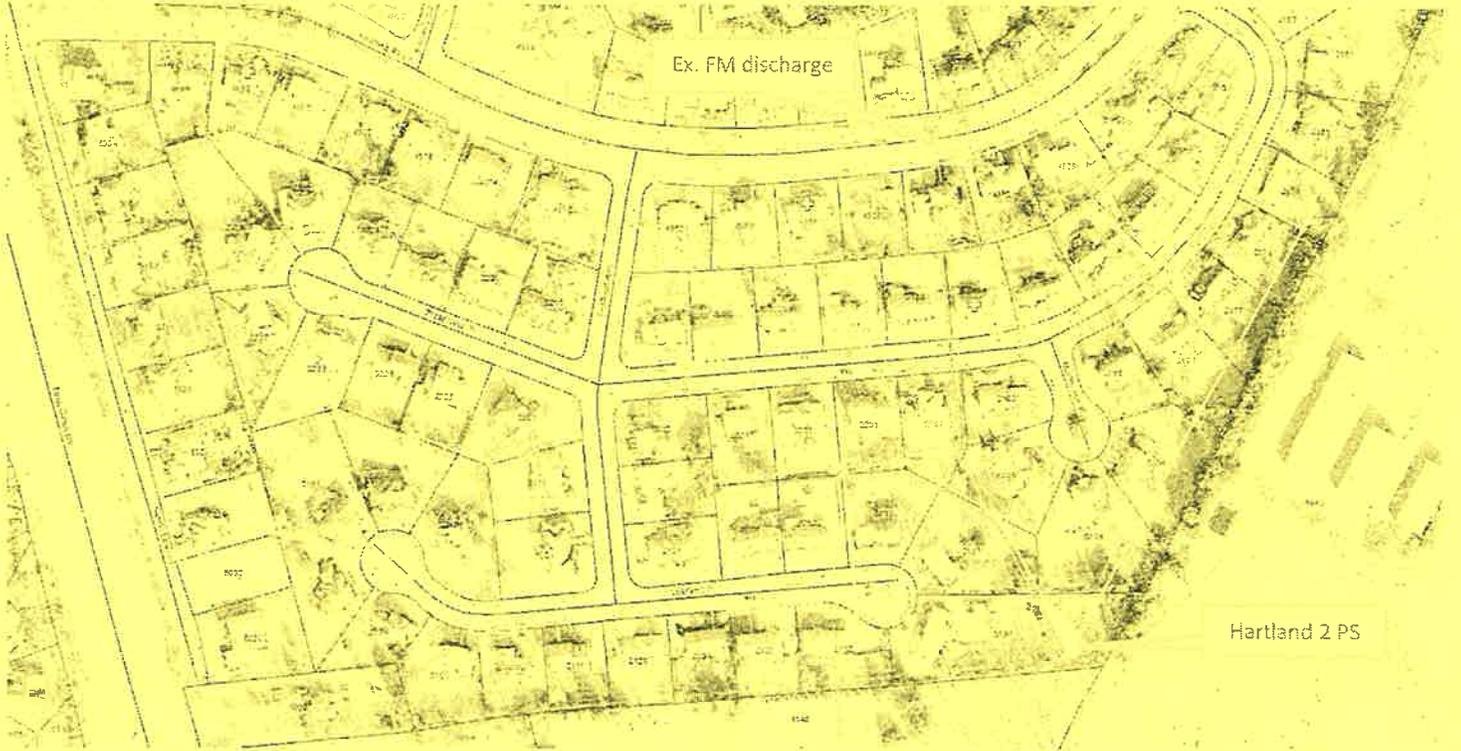
**TO ALL PROSPECTIVE SUBMITTERS:**

Please be advised of the following clarifications to the above referenced Bid:

**1. GENERAL QUESTIONS**

	Questions	Answers
1.	Is there a copy of the pre-bid sign in sheet available?	See attached.
2.	Is there any lining of the pump station required during the upgrades?	No.
3.	Is the base 90° and vertical discharge pipe to be replaced on each pump?	Yes. The two vertical discharge piping and base 90° inside the wet well shall be replaced and included in the Contractor's bid.
4.	Where is a nearby manhole for bypass pumping?	A map of the surrounding sewer system is included in this Addendum. The Hartland 2 pump station 4-inch force main is approximately 930 linear feet long.





*Todd Slatin*

Todd Slatin, Director  
Division of Central Purchasing

All other terms and conditions of the Bid and specifications are unchanged.  
This letter should be signed, attached to and become a part of your Bid.

COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

SIGNATURE OF BIDDER: \_\_\_\_\_

Attachments:

- 1. Pre bid Meeting Summary
- 2. Pre bid Meeting Roster





Hartland 2 Pump Station Upgrades  
LFUCG, Lexington, KY

GRW Project No. 4859-03  
Date: July 6, 2022

1. Introduction

- ◆ Owner: LFUCG DWQ
  - Bob Peterson, PE, RMP Manager
  - Kurt Zehnder, PE, Project Manager
  - Todd Slatin, Purchasing Director
  - Sherita Miller, MBE Liaison
  - Jody Scrivner, Administrative Specialist
- ◆ Engineers:
  - Bell Engineering
    - Jonathan Rehner, PE
    - David Schrader, PE
  - GRW Engineers, Inc.
    - Mike Jacobs, PE
  - Stormwater Program Manager
    - Tetra Tech
      - ◆ Abby Terry, EIT
- ◆ Please type your name and the company you are representing in the chat box. This will create a list of the meeting attendees. If you are calling in, wait until the end of the meeting and we will verbally get your information.

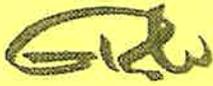
2. Project Description

The project includes providing all construction supervision, labor, materials, tools, test equipment necessary for the Hartland 2 Pump Station Upgrades. The principal features of the Work to be performed under this Contract includes, but is not limited to replacement of pumps and associated equipment, new emergency pump bypass connection, replacement of all operating valves and upgrade of electrical controls and conduits.

The foregoing descriptions shall not be construed as a complete description of all work required.

3. Bid/Construction Schedule

- ◆ July 6, 2022: Mandatory Virtual Pre-bid Meeting (1:30 pm)
- ◆ July 6, 2022: Non-Mandatory Site Visit (3:00 pm)
- ◆ July 11, 2022: Cut-Off Date for Questions (5:00 pm)
- ◆ July 14, 2022: Final Addendum Issued (by 3:30pm)
- ◆ July 21, 2022: Virtual Bid Opening (2:00 pm)<sup>\*\*\*</sup>
- ◆ September 5, 2022 :Notice to Proceed (tentative)
- ◆ September 8, 2022: Preconstruction Conference (tentative)
- ◆ July 2, 2023: Construction Complete
- ◆ December 31, 2023: Consent Judgement Construction Deadline



Hartland 2 Pump Station Upgrades  
LFUCG, Lexington, KY

GRW Project No. 4859-03  
Date: July 6, 2022

#### 4. Bidding Questions and Procedures

- Due to the current environment and recommendations for social distancing, LFUCG will only be accepting bids on-line through Ion Wave for this solicitation. Base bid and alternate totals (if required) should be provided on the appropriate line items tab on Ion Wave. Submissions without line item totals (if required) may be rejected and deemed non-responsive. **Please submit all questions via the Q&A Module on ION WAVE.**
- Pre-bid meeting Questions:
  - Questions may be asked verbally. Questions will be recorded and issued as part of an addendum.
  - Verbally asked questions may be verbally responded to by the Owner/Engineer at the meeting, and responses recorded in the addendum.
  - Responses from Owner/Engineer at pre-bid meeting may change after we have had a chance to get back to the office and research/clarify information.
- Final written responses in addendums will override any verbal question responses.
- Final issued addendums will be the legal response of record.

#### 5. Affirmative Action

- The successful Bidder must submit with their bid (see section 00410 – Bid Form) the following items:
  - Affirmative Action Plan of the firm
  - Current Work Force Analysis Form
  - Good Faith Effort Documentation to meet the MWDBE goals.
  - List of Disadvantaged Business Enterprise Subcontractors and the Dollar Value of each Subcontract
- It is requested that each Bidder include in its bid a goal of (10%) for MWDBE participation and a goal of (3%) for Veteran participation.
- Contact Sherita Miller, [smillar@lexingtonky.gov](mailto:smillar@lexingtonky.gov) Division of Central Purchasing for additional information.

#### 6. Erosion, Sediment, and Stormwater Control

Contractor shall follow the permitting, inspection, and enforcement procedures for erosion, sediment, and stormwater control established by Tetra Tech. Copies of the permitting, inspection, and enforcement (PIE) procedures will be distributed following the meeting with the meeting minutes as part of the Addendum.

#### 7. Wage Rates

- State and Federal Wage rates are not included as part of this project.

#### 8. Bid Form

- The bid form contains both lump sum work and unit price work.
  - The lump sum work includes everything in the plans and specifications not listed in the unit price work.
  - Allowances are included for miscellaneous site improvements

Hartland 2 Pump Station Upgrades  
LFUCG, Lexington, KY

GRW Project No. 4859-03  
Date: July 6, 2022

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**9. Completed Permits Prior to Construction**

- KY DOW Construction Permit – obtained by Owner

**10. Permits to be completed**

- Storm Water Pollution Prevention Plan (SWPPP)
  - Included in specification section 02371. Partially completed. Contractor to complete.
  - Approved LFUCG Land Disturbance Permit Application & Erosion and Sediment Control (ESC) checklist is included in SWPPP specification
- View General Notes, sheet 1 of the drawings

**11. Site Access**

- Contractor access to the site shall be through the pump station access road (2136 Leafland Place). Contractor shall trim trees along access to minimize damage to the trees. A certified arborist must be used.
- Contractor shall take note that all construction shall remain within the paved surface around the existing pump station and the existing easement limits.

**12. General Construction**

- Blasting not allowed.
- Site security and temporary chain link construction fencing is required
- Staging and storage will be the responsibility of the Contractor. Contractor must remain within the existing easement limits. Any additional area needed will be the responsibility of the Contractor.
- Bypass pumping and maintaining service at all times is the responsibility of the Contractor.
- Materials to be salvaged from the existing pump station are listed on DWG. C-03
  - Transfer switch
  - SCADA components

Hartland 2 Pump Station Upgrades  
LFUCG, Lexington, KY

GRW Project No. 4859-03  
Date: July 6, 2022

### 13. Submittals

Required submittals include but are not limited to:

- Schedule of Values
- Construction Sequencing Plan
- Construction Access Plan
- Staging Area Plan
- Bypass Pumping Plan
- Maintenance of Operations Plan
- Spoils Management Plan
- Dewatering Plan

The named submittals are incidental to the contract and are not pay items

### 13. Questions and Comments

- *LFUCG-DWQ stated that the shipping address for any material needed for the project will be coordinated at a future date with the successful/awarded contractor. This is due to the limited space around the site to store materials. Contractors may consider having equipment delivered to their shop and brought to the site.*
- *LFUCG-DWQ mentioned that the site is in a heavy residential neighborhood and contractors need to ensure, to the extent practical, that disturbance to the surrounding homes is minimal.*
- *Is the access drive owned by LFUCG? The asphalt drive was installed by LFUCG for LFUCG's use on an existing easement. The easement is on Mr. and Mrs. Walden's property.*
- *It was noted by the design team that tree trimming will run the entire length of the entrance drive to the station.*
- *What are the existing flows at the station? Please see Bypass Pumping Notes on sheet C-03 of the drawings.*

*At the site visit, the following was discussed:*

- *Will the pump base and vertical pipe inside the wet well be replaced? Further direction on this will be supplied via addendum*
- *Where is a nearby manhole for bypass pumping? A map of the surrounding sewer system will be supplied via addendum.*

Attendance Summary

Total Number of Participants  
 Meeting Title  
 Meeting Start Time  
 Meeting End Time  
 Meeting Id

Hardland Pump Station 2 - Virtual/In person Prebid Meeting (Teams)  
 7/6/2022, 1:30:36 PM  
 7/6/2022, 2:07:01 PM  
 19306809-9bde-4108-ade4-8d4bc426e899

Full Name	Company	Phone Number	Email	Role
Zehnder, Kurt	Hazen & Sawyer	1-(859)-219-1126	kzehnder@hazensawyer.com	Organizer
Robert Peterson	LFUCG	1-(859)-425-2438	rpeterson@lexingtonky.gov	Presenter
Charlie Martin	LFUCG	1-(859)-425-2439	cmartin@lexingtonky.gov	Presenter
Jody Scriver	LFUCG	1-(859)-425-2440	jscriver@lexingtonky.gov	Presenter
Jonathan Reiner	Bell Engineering	1-(859)-519-8976	jreiner@bell.com	Attendee
David Schrader (Guest)	Bell Engineering	1-(859)-351-1265	dtschrader@bell.com	Presenter
Jacobs, Mike	GRW	1-(859)-229-3999	Mike@grw.com	Presenter
Todd Slatin	LFUCG	1-(859)-258-3320	tslatin@lexingtonky.gov	Presenter
Sherita Miller	LFUCG	1-(859)-258-3320	smiller@lexingtonky.gov	Presenter
James Jones	Intellimodus	1-502-340-2849	James.Jones@intellimodus.com	Attendee
Chris Combs	C.J. Hughes	1-(304)-522-3868	ccombs@cjhughes.com	Attendee
Terry, Abby	Tetra Tech	1-859-514-8819	abby.terry@tetratech.com	Attendee
Timothy W. Klopfenstein	Intellimodus		Tim.Klopfenstein@intellimodus.com	Attendee
Cody Lolits	Herrick Co. Inc	1-859-699-2961	clolits@hcof.com	
Doug Herrick	Herrick Co. Inc	1-502-829-3484	dh@hcof.com	Attendee

## SECTION 01010 - SUMMARY OF WORK

### PART 1 - GENERAL

#### 1.01 THE REQUIREMENT

- A. The Work to be done under this Contract and in accordance with these Specifications consists of furnishing all equipment, supervision, labor, skill, material and all other items necessary for the construction of the Hartland 2 Pump Station Upgrades.
- B. The Contractor shall perform all work required for such construction in accordance with the Contract Documents and subject to the terms and conditions of the Contract, complete and ready for use.
- A. The principal features of the Work to be performed under this Contract includes, but is not limited to:
  - 1. Installation of emergency pump bypass connection.
  - 2. Replacement of all operating valves.
  - 3. Upgrade of electrical controls and conduit, including generator connection.
  - 4. Replacement of pumps and associated equipment.
  - 5. Maintenance of existing sanitary sewer flows during construction.
- D. The foregoing description(s) shall not be construed as a complete description of all work required.

#### 1.02 CONTRACT DOCUMENTS

- A. Work to be done is shown on the set of Drawings entitled: Hartland 2 Pump Station Upgrades. The numbers and titles of all Drawings appear on the index sheet of the Drawings. All drawings so enumerated shall be considered an integral part of the Contract Documents as defined herein.

#### 1.03 GENERAL ARRANGEMENT

- A. Drawings indicate the extent and general arrangement of the work. If any departures from the Drawings are deemed necessary by the Contractor to accommodate the materials and equipment he proposes to furnish, details of such departures and reasons therefore shall be submitted as soon as practicable to the Engineer for approval. No such departures shall be made without the prior written approval of the Engineer. Approved changes shall be made without additional cost to the Owner for this work or related work under other Contracts of the Project.

#### 1.04 CONSTRUCTION PERMITS, EASEMENTS AND ENCROACHMENTS

- A. The Owner shall obtain or cause to be obtained all permanent and temporary construction easements as shown on the Drawings or required for completion of the Work. The Contractor shall verify that these easements have been obtained and shall comply with the conditions set forth in each easement.

- B. The Contractor shall obtain, keep current and pay all fees for any necessary construction permits from those authorities, agencies, or municipalities having jurisdiction over land areas, utilities, or structures which are located within the Contract limits and which will be occupied, encountered, used, or temporarily interrupted by the Contractor's operations unless otherwise stated. Record copies of all permits shall be furnished to the Engineer.
- C. When construction permits are accompanied by regulations or requirements issued by a particular authority, agency or municipality, it shall be the Contractor's responsibility to familiarize himself and comply with such regulations or requirements as they apply to his operations on this Project.

#### **1.05 ADDITIONAL ENGINEERING SERVICES**

- A. In the event that the Engineer is required to provide additional engineering services as a result of substitution of materials or equipment by the Contractor which are not "or equal", or changes by the Contractor in dimension, weight, power requirements, etc., of the equipment and accessories furnished, or if the Engineer is required to examine and evaluate any changes proposed by the Contractor for the convenience of the Contractor, then the Engineer's charges in connection with such additional services shall be charged to the Contractor by the Owner.
- B. In the event that the Engineer is required to provide additional engineering services as a result of Contractor's errors, omissions, or failure to conform to the requirements of the Contract Documents, or if the Engineer is required to examine and evaluate any changes proposed by the Contractor solely for the convenience of the Contractor, then the Engineer's charges in connection with such additional services shall be charged to the Contractor by the Owner.

#### **1.06 ADDITIONAL OWNER'S EXPENSES**

- A. In the event the Work of this Contract is not completed within the time set forth in the Contract or within the time to which such completion may have been extended in accordance with the Contract Documents, the additional engineering or inspection charges incurred by the Owner may be charged to the Contractor and deducted from the monies due him. Extra work or supplemental Contract work added to the original Contract, as well as extenuating circumstances beyond the control of the Contractor, will be given due consideration by the Owner before assessing engineering and inspection charges against the Contractor.
- B. Unless otherwise specifically permitted, the normal time of work under this Contract is limited to 40 hours per week, Monday through Friday. Work beyond these hours will result in additional expense to the Owner. Any expenses and/or damages, including the cost of the Engineer's on site personnel, arising from the Contractor's operations beyond the hours and days specified above shall be borne by the Contractor.
- C. Charges assessed to the Contractor for additional engineering and inspection costs will be determined based on actual hours charged to the job by the Engineer. Daily rates will depend on the number and classifications of employees involved, but in no case shall such charges exceed \$500 per day for field personnel based on an eight hour workday. Additional charges will apply if multiple personnel are needed or if engineering time is required as part of the work outside the contract times.
- D. Charges for additional Owner's expenses shall be in addition to any liquidated damages assessed in accordance with the Contract.

## 1.07 TIME OF WORK

- A. The normal time of work for this Contract is limited to 40 hours per week and shall generally be between the hours of **6:00 a.m. and 5:00 p.m., Monday through Friday**. The Contractor may work beyond these hours or on weekends with written approval from the Owner provided that all costs incurred by the Owner for any additional engineering shall be borne by the Contractor. The Owner shall deduct the cost of additional engineering from monies due the Contractor.
- B. If it shall become imperative to perform work outside of the normal working hours the Owner and Engineer shall be informed a reasonable time in advance of the beginning of such work. Temporary lighting and all other necessary facilities for performing and inspecting the work shall be provided and maintained by the Contractor.

## 1.08 SURVEYS AND LAYOUT

- A. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Drawings or as directed by the Engineer. Elevations of existing ground and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the stake out survey shall be referred immediately to the Engineer for interpretation or correction.
- B. All survey work for construction control purposes shall be made by the Contractor at his expense. The Contractor shall provide a Licensed Surveyor as Chief of Party, competently qualified survey party, all necessary instruments, stakes, and other material to perform the work.
- C. Contractor shall establish all baselines for the location of the principal component parts of the work together with a suitable number of bench marks adjacent to the work. Based upon the information provided by the Contract Drawings, the Contractor shall develop and make all detail surveys necessary for construction, including stakes for all working points, lines and elevations.
- D. Contractor shall have the responsibility to carefully preserve the bench marks, reference points and stakes, and in the case of destruction thereof by the Contractor or resulting from his negligence, the Contractor shall be charged with the expense and damage resulting therefrom and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such bench marks, reference points and stakes.
- E. Existing or new control points, property markers and monuments that will be or are destroyed during the normal causes of construction shall be reestablished by the Contractor and all reference ties recorded therefore shall be furnished to the Engineer. All computations necessary to establish the exact position of the work shall be made and preserved by the Contractor.
- F. The Engineer may check all or any portion of the work and the Contractor shall afford all necessary assistance to the Engineer in carrying out such checks. Any necessary corrections to the work shall be immediately made by the Contractor. Such checking by the Engineer shall not relieve the Contractor of any responsibilities for the accuracy or completeness of his work.
- G. At completion of the work, the Contractor shall furnish Record Drawings indicating the final layout of all constructed piping and manholes and finished grades constructed or changed as part of this work.

## **1.09 FIRE PROTECTION**

- A. Contractor shall take all necessary precautions to prevent fires at or adjacent to the work and shall provide adequate facilities for extinguishing fires which do occur. Burning shall not be permitted on site.
- B. When fire or explosion hazards are created in the vicinity of the work as a result of the locations of fuel tanks or similar hazardous utilities or devices, the Contractor shall immediately alert the local Fire Marshal, the Engineer, and the Owner of such tank or device. The Contractor shall exercise all safety precautions and shall comply with all instructions issued by the Fire Marshal and shall cooperate with the Owner of the tank or device to prevent the occurrence of fire or explosion.

## **1.10 CHEMICALS**

- A. All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, or reactant of other classification, must show approval of either the EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with all applicable rules and regulations.

## **1.11 FIRST AID FACILITIES AND ACCIDENTS**

### **A. First Aid Facilities**

- 1. The Contractor shall provide at the site such equipment and facilities as are necessary to supply first aid to any of his personnel who may be injured in connection with the work.

### **B. Accidents**

- 1. The Contractor shall promptly report, in writing, to the Engineer and Owner all accidents whatsoever out of, or in connection with, the performance of the work, whether on or adjacent to the site, which cause death, personal injury or property damage, giving full details and statements of witnesses.
- 2. If death, serious injuries, or serious damages are caused, the accident shall be reported immediately by telephone or messenger to both the Owner and the Engineer.
- 3. If any claim is made by anyone against the Contractor or a Subcontractor on account of any accidents, the Contractor shall promptly report the facts, in writing, to the Engineer and Owner, giving full details of the claim.

## **1.12 ULTIMATE DISPOSITION OF CLAIMS BY ONE CONTRACTOR ARISING FROM ALLEGED DAMAGE BY ANOTHER CONTRACTOR**

- A. During the progress of the Work, other Contractors may be engaged in performing other work or may be awarded other Contracts for additional work on this project. In that event, the Contractor shall coordinate the work to be done hereunder with the work of such other Contractors and the Contractor shall fully cooperate with such other Contractors and carefully fit its own work to that provided under other Contracts as may be directed by the Engineer. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other Contractor.
- B. If the Engineer shall determine that the Contractor is failing to coordinate his work with the work of the other Contractors as the Engineer directed, then the Owner shall have the right to withhold any payments otherwise due hereunder until the Contractor completely complies with the Engineer's directions.

- C. If the Contractor notifies the Engineer in writing that another Contractor is failing to coordinate his work with the work of this Contract as directed, the Engineer will promptly investigate the charge. If the Engineer finds it to be true, he will promptly issue such directions to the other Contractor with respect thereto as the situation may require. The Owner, the Engineer, nor any of their agents shall not, however, be liable for any damages suffered by the Contractor by reason of the other Contractor's failure to promptly comply with the directions so issued by the Engineer, or by reason of another Contractor's default in performance, it being understood that the Owner does not guarantee the responsibility or continued efficiency of any Contractor.
- D. The Contractor shall indemnify and hold the Owner and the Engineer harmless from any and all claims of judgments for damages and from costs and expenses to which the Owner may be subjected or which it may suffer or incur by reason of the Contractor's failure to promptly comply with the Engineer's directions.
- E. Should the Contractor sustain any damage through any act or omission of any other Contractor having a Contract with the Owner for the performance of work upon the site or of work which may be necessary to be performed for the proper execution of the work to be performed hereunder, or through any act or omission of a Subcontractor of such Contract, the Contractor shall have no claim against the Owner or the Engineer for such damage, but shall have a right to recover such damage from the other Contractor under the provision similar to the following provisions which have been or will be inserted in the Contracts with such other Contractors.
- F. Should any other Contractor having or who shall hereafter have a Contract with the Owner for the performance of work upon the site sustain any damage through any act or omission of the Contractor hereunder or through any act or omission of any Subcontractor of the Contractor, the Contractor agrees to reimburse such other Contractor for all such damages and to defend at his own expense any suit based upon such claim and if any judgment or claims against the Owner shall be allowed, the Contractor shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and shall indemnify and hold the Owner harmless from all such claims.
- G. The Owner's right to indemnification hereunder shall in no way be diminished, waived or discharged, by its recourse to assessment of liquidated damages as provided in the Contract, or by the exercise of any other remedy provided for by Contract Documents or by law.

### **1.13 BLASTING AND EXPLOSIVES**

- A. No blasting is allowed.

### **1.14 LIMITS OF WORK AREA**

- A. The Contractor shall confine his construction operations within the Contract limits shown on the Drawings and/or property lines and/or fence lines. Storage of equipment and materials, or erection and use of sheds outside of the Contract limits, if such areas are the property of the Owner, shall be used only with the Owner's approval. Such storage or temporary structures, even within the Contract's limits, shall not be placed on properties designated as easements or rights-of-way unless specifically permitted elsewhere in the Contract Documents.
- B. The Contractor shall secure, insure, maintain, rent/lease, and restore staging area.
- C. The Contractor shall provide Engineer and Owner copy of agreement with landowner of staging areas.

## **1.15 WEATHER CONDITIONS**

- A. The Contractor shall take necessary precautions (in the event of impending storms) to protect all work, materials, or equipment from damage or deterioration due to floods, driving rain, or wind, and snow storms. The Owner reserves the right, through the opinion of the Engineer, to order that additional protection measures over and beyond those proposed by the Contractor, be taken to safeguard all components of the Project. The Contractor shall not claim any compensation for such precautionary measures so ordered, nor claim any compensation from the Owner for damage to the work from weather elements.

## **1.16 PERIODIC CLEANUP: BASIC SITE RESTORATION**

- A. During construction, the Contractor shall regularly remove from the site of the work all accumulated debris and surplus materials of any kind which result from his operations. Unused equipment and tools shall be stored at the Contractor's staging area for the Project.
- B. As the work involves installation of sewers, drains, manholes, underground structures, or other disturbance of existing features in or across streets, rights-of-way, easements, or private property, the Contractor shall (as the work progresses) promptly backfill, compact, grade, and otherwise restore the disturbed area to the basic condition which will permit resumption of pedestrian or vehicular traffic and any other critical activity or functions consistent with the original use of the land. The requirements for temporary paving of streets, walks, and driveways are specified elsewhere. Unsightly mounds of earth, large stones, boulders, and debris shall be removed so that the site presents a neat appearance.
- C. The Contractor shall perform the cleanup work on a regular basis and as frequently as ordered by the Engineer. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the Engineer, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.
- D. Upon failure of the Contractor to perform periodic cleanup and basic restoration of the site to the Engineer's satisfaction, the Owner may, upon five (5) days prior written notice to the Contractor, without prejudice to any other rights or remedies of the Owner, cause such work for which the Contractor is responsible to be accomplished to the extent deemed necessary by the Engineer, and all costs resulting therefrom shall be charged to the Contractor and deducted from the amounts of money that may be due him.

## **1.17 USE OF FACILITIES BEFORE COMPLETION**

- A. The Owner reserves the right to enter the site and use any portion of the constructed facilities before final completion of the whole work to be done under this Contract. However, only those portions of the facilities which have been completed to the Engineer's satisfaction, as evidenced by his issuing a Certificate of Substantial Completion covering that part of the work, shall be placed in service.
- B. It shall be the Owner's responsibility to prevent premature connections to or use of any portion of the installed facilities by private or public parties, persons or groups of persons, before the Engineer issues his Certificate of Substantial Completion covering that portion of the work to be placed in service.
- C. Consistent with the approved progress schedule, the Contractor shall cooperate with the Owner, his agents, and the Engineer to accelerate completion of those facilities, or portions thereof, which have been designated for early use by the Owner.

**1.18 CONSTRUCTION VIDEO**

- A. The Contractor shall video the entire project site including all concrete and asphalt pavements, curb and gutter, fencing to remain, structures to be demolished, and existing structures that are to remain or be modified. The original video image shall be turned over to the Engineer prior to beginning construction activities. The video shall be provided as an Audio Video Interleave File (.avi) and shall be provided on a jump/flash drive compatible media only. The video shall clearly identify existing site and structural conditions prior to construction. Drone footage will not be considered for the preconstruction video.

**PART 2 – PRODUCT (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01025 - MEASUREMENT AND PAYMENT**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, equipment, service, other necessary supplies and perform all work including all excavation and backfilling (without additional compensation, except where specifically set out in these specifications) at the contract unit prices bid for the work described in Part 2 of this Section.

#### **1.02 PROGRESS AND PAYMENTS SCHEDULES**

- A. Within fifteen (15) days after the date of formal execution of the Agreement (Contract), the Contractor shall prepare and submit to the Engineer, for approval, a construction schedule of the Critical Path Method (CPM) type which depicts the Contractor's plan for completing the contract requirements and show work placement in dollars versus contract time. The Contractor's construction schedule must be approved by the Engineer before any payments shall be made on this contract.
- B. Within fifteen (15) days after the date of formal execution of the Agreement (Contract), the Contractor shall prepare and submit to the Engineer, for approval, a periodic estimate which depicts the Contractor's cost for completing the contract requirements and show by major unit of the project work, the Contractor's dollar value for the material and the labor (two separate amounts) to be used as a basis for the periodic payments. The Contractor's periodic estimate must be approved by the Engineer before any payments shall be made on this contract.
- C. The Engineer's decision as to sufficiency and completeness of the Contractor's construction schedule and periodic estimate shall be final.
- D. The Contractor must make current, to the satisfaction of the Engineer, the construction schedule and periodic estimate each time the Contractor requests a payment on this contract.
- E. The Contractor's construction schedule and periodic estimate must be maintained at the construction site available for inspection and shall be revised to incorporate approved change orders as they occur.
- F. When the Contractor requests a payment on this contract, it must be on the approved periodic estimate and be current. Further, the current periodic estimate and construction schedule (both updated and revised) shall be submitted for review and approval by the Engineer before monthly payments shall be made by the Owner. The Contractor shall submit as stored materials for pay purposes provided proper documentation is provided.
  - a. Documentation for stored materials includes at a minimum, an approved Shop Drawing, materials to be on site, etc. See Specification Section 00800-14.02.A.5 for additional information.
- G. Refer to Section 00800, Articles 14.02.A.6-8 for retainage requirements.

#### **1.04 CLAIMS FOR EXTRA WORK**

- A. If the Contractor claims that any instructions by Drawings or otherwise involve extra cost, the Contractor shall give the Engineer written notice of said claim within seven (7) days after the receipt of such instructions, and in any event before proceeding to execute the work, stating clearly and in detail the basis of its claim or claims. No such claim shall be valid unless so made.

- B. Claims for additional compensation for extra work, due to alleged errors in spot elevations, contour lines, or bench marks, shall not be recognized unless accompanied by certified survey data, made prior to the time the original ground was disturbed, clearly showing that errors exist which resulted, or would result, in handling more material, or performing more work than would reasonably be estimated from the Drawings and topographical maps issued.
- C. Any discrepancies which may be discovered between actual conditions and those represented by the topographical maps and Drawings shall at once be reported to the Engineer, and work shall not proceed, except at the Contractor's risk, until written instructions have been received by the Contractor from the Engineer.
- D. If, on the basis of the available evidence, the Engineer determines that an adjustment of the Contract Price or time is justifiable, the procedure shall then be as provided herein for "Changes in the Work".
- E. By execution of this Contract, the Contractor warrants that it has visited the site of the proposed work and fully acquainted himself with the conditions there existing relating to construction and labor, and that it fully understands the facilities, difficulties, and restrictions attending the execution of the work under this Contract. The Contractor further warrants that it has thoroughly examined and is familiar with the Drawings, Specifications and all other documents comprising the Contract. The Contractor further warrants that by execution of this Contract its failure when it was bidding on this Contract to receive or examine any form, instrument or document, or to visit the site and acquaint himself with conditions there existing, in no way relieves the Contractor from any obligation under the Contract, and the Contractor agrees that the Owner shall be justified in rejecting any claim based on facts regarding which it should have been on notice as a result thereof.

**1.05 DETERMINATION OF THE VALUE OF EXTRA (ADDITIONAL) OR OMITTED WORK**

- A. The value of extra (additional) or omitted work shall be determined in one or more of the following ways:
  - 1. On the basis of the actual cost of all the items of labor (including on-the-job supervision), materials, and use of equipment, plus a maximum 15 percent for added work or a minimum 15 percent for deleted work which shall cover the Contractor's general supervision, overhead and profit.
    - a. Labor may include on-site supervision, on-site project management, in addition to field personal associated with the work.
    - b. In case of subcontracts, the 15 percent (maximum for added work and minimum for deleted work) is interpreted to mean the subcontractor's supervision, overhead and profit, and an additional 5 percent (maximum for added work and minimum for deleted work) may then be added to such costs to cover the General Contractor's supervision, overhead and profit.
    - c. The cost of labor shall include required insurance, taxes and fringe benefits.
    - d. Equipment costs shall be based on current rental rates in Lexington, Kentucky.
  - 2. By estimate and acceptance in a lump sum.
  - 3. By unit prices named in the Contract or subsequently agreed upon.
- B. Provided, however, that the cost or estimated cost of all extra (additional) work shall be determined in advance of authorization by the Engineer and approved by the Owner.

- C. All extra (additional) work shall be executed under the conditions of the original Contract. Any claim for extension of time shall be adjusted according to the proportionate increase or decrease in the final total cost of the work unless negotiated on another basis.
- D. Except for over-runs in contract unit price items, no extra (additional) work shall be done except upon a written Change Order from the Engineer, and no claim on the part of the Contractor for pay for extra (additional) work shall be recognized unless so ordered in writing by the Engineer.

## **PART 2 - PRODUCTS**

### **2.1 MOBILIZATION**

Payment for the Contractor's mobilization shall be made at the Contract lump sum price and shall include all costs incurred for moving equipment onto the project area, staging, security fencing, and any pertinent costs related thereto, for the duration of the contract term. Mobilization unit price shall not exceed two percent (2%) of the total Bid Amount.

### **2.2 BONDS AND INSURANCE**

Payment for bonds and insurance shall be made at the Contract lump sum price, and shall include the costs of all bonds provided under the Contract, and the premiums for insurance required under the Contract, for the duration of the contract term. Unit price shall be based on actual invoices and payment shall be made upon receipt of invoices attached to a monthly progress payment request.

### **2.3 DEMOBILIZATION**

Payment for the Contractor's demobilization upon completion of the project shall be made at the Contract lump sum price and shall include all costs incurred for removing equipment and materials from the project area and any pertinent costs related thereto, for the duration of the Contract term. Demobilization unit price shall not exceed one percent (1%) of the total Bid Amount.

### **2.4 EROSION AND SEDIMENT CONTROL AND CONFORMANCE WITH SWPPP**

Payment is for furnishing, installing, maintaining and removing erosion and sediment control devices. This is to be paid at the contract lump sum price, complete in place, which shall include compensation for materials, placing, cleaning, and maintaining the sediment and erosion control devices throughout the construction period and removal of the of the sediment and erosion control devices once vegetation is established. Payment shall be distributed as follows: 25% when all ESC measures are in place and operating correctly; 50% equally distributed across the Contract term; and 25% for the removal of the ESC measures and final stabilization/restoration.

### **2.5 PUMP STATION UPGRADES**

Payment for the pump station upgrades shall be made as a lump sum, including all internal structure piping and valves (wetwell and valve vault); electrical components for pump station; new service feed, pumps, pump controls, guiderails; startup and testing; and all other items shown on the Contract Drawings and necessary for a complete, functioning pump station.

### **2.6 DENSE GRADED AGGREGATE-DGA, EXTRA AS DIRECTED BY ENGINEER**

Payment for dense graded aggregate shall be paid for at the Contract unit price per ton, which shall include placement of aggregate, compaction and all appurtenances necessary for a complete installation.

**2.7 NO. 9 CRUSHED STONE, EXTRA AS DIRECTED BY ENGINEER**

Payment for No. 9 crushed stone shall be paid for at the Contract unit price per ton, which shall include placement of aggregate, compaction and all appurtenances necessary for a complete installation.

**2.8 NO. 57 CRUSHED STONE, EXTRA AS DIRECTED BY ENGINEER**

Payment for No. 57 crushed stone shall be paid for at the Contract unit price per ton, which shall include placement of aggregate, compaction and all appurtenances necessary for a complete installation.

**2.9 NO. 2 CRUSHED STONE, EXTRA AS DIRECTED BY ENGINEER**

Payment for No. 2 crushed stone shall be paid for at the Contract unit price per ton, which shall include placement of aggregate, compaction and all appurtenances necessary for a complete installation.

**2.10 GENERAL SITE IMPROVEMENT**

Payment for general site improvement shall be paid for at a lump sum, including miscellaneous demolition items as shown on the plan sheet, and all appurtenances related to the site improvements.

**2.11 BYPASS PUMPING AND SETUP**

Payment is for operation and setup of bypass pumping required for installation of all items shown in Contract Documents. This is to be paid for at the Contract lump sum as indicated on the Bid Schedule. Work shall be complete in place, which shall include compensation for all mobilizations, set ups, testings (per section 01520), takedowns, relocations, and demobilization for the pumps, hoses, line plugs, generator, rental fees, fuel, monitoring, piping, duty and backup pumps, check valve, adapters, hose, labor, maintenance, and all appurtenances necessary for the continued setup and operation of the bypass pumping system throughout the project. Provision of redundant pumping capability per Section 01520 is incidental to the cost of bypass pumping and shall be included in this pay item.

**2.12 ALLOWANCE: MISCELLANEOUS SITE IMPROVEMENTS**

An allocation has been established for miscellaneous site improvements or other Work not included in the Contract Documents but deemed necessary for the Project during construction. Miscellaneous site improvements will be as directed by the Engineer in a field order which will document costs associated with the directed miscellaneous site improvements. Cost shall include all labor, equipment, materials, and other incidental costs required to perform the directed miscellaneous site improvements.

**PART 3 - EXECUTION**

**3.01 PAY ITEMS**

- A. The pay items listed hereinbefore refer to the items listed in the Bid Schedule and are the only pay items for this contract.
- B. Any and all other items of work listed in the specifications or shown on the Contract Drawings for this contract shall be considered incidental to and included in the associated pay items.

**3.01 PAY ITEMS**

- 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 Drawings and/or described in the Specifications and Contract Documents at the lump sum price as indicated by the Bidder in the Bid.

END OF SECTION

## **SECTION 01040 - COORDINATION**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. The Contractor shall allow the Owner or his agents, and other project Contractors or their agents, to enter upon the work for the purpose of constructing, operating, maintaining, removing, repairing, altering, or replacing such pipes, sewers, conduits, manholes, wires, poles, or other structures and appliances which may be required to be installed at or in the work. The Contractor shall cooperate with all aforesaid parties and shall allow reasonable provisions for the prosecution of any other work by the Owner, or others, to be done in connection with his work, or in connection with normal use of the facilities.
- B. Each Contractor shall cooperate fully with the Owner, the Engineer, and all other Contractors employed on the Work, to effect proper coordination and progress to complete the project on schedule and in proper sequence. Insofar as possible, decisions of all kinds required from the Engineer shall be anticipated by the Contractor to provide ample time for inspection, or the preparation of instructions.
- C. Each Contractor shall assume full responsibility for the correlation of all parts of his work with that of other Contractors. Each Contractor's superintendent shall correlate all work with other Contractors in the laying out of work. Each Contractor shall lay out his own work in accordance with the Drawings, Specifications, and instructions of latest issue and with due regard to the work of other Contractors.
- D. Monthly general progress coordination meetings will be held at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as special pre-installation meetings. Representation at each meeting by every part currently involved in coordination or planning for the work of the entire project is requested. Meetings shall be conducted in a manner that will resolve coordination problems. Results of the meetings shall be recorded and copies distributed to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

#### **1.02 COORDINATION OF CRAFTS, TRADES, AND SUBCONTRACTORS**

- A. The Contractor shall coordinate the work of all 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.
- B. 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 effected. Consult the Engineer if conflicts exist on the Drawings.
- C. Contractor's Superintendent, or his designee who is employed by Contractor, must be on site at all times when work is being performed, except for periods which will not exceed 1 hour.

### **PART 2 – PRODUCTS (NOT USED)**

### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01200 - PROJECT MEETINGS**

### **PART 1 - GENERAL**

#### **1.01 PRECONSTRUCTION MEETING**

- A. A preconstruction meeting will be held after Award of Contract, but prior to starting work at the site. Contractor's Project Manager and Site Superintendent are required to attend, as are representatives of all major subcontractors. Progress schedule update shall be submitted in advance of each meeting.

#### **1.02 PROGRESS MEETINGS**

- A. Progress meetings will be held monthly at the Division of Water Quality offices during the performance of the Work. Additional progress meetings may be called as progress of work dictates. Prior to each progress meeting, Contractor shall submit a progress report summarizing the work completed over the past month and providing a look ahead at the work to be done over the next month.
- B. Minimum Agenda for meeting shall include:
1. Review and approve minutes of previous meetings.
  2. Review progress of Work since last meeting.
  3. Review proposed 30-day construction schedule.
  4. Note and identify problems which impede planned progress.
  5. Develop corrective measures and procedures to regain planned schedule.
  6. Revise construction schedule as indicated and plan progress during next work period.
  7. Maintaining of quality and work standards.
  8. Complete other current business.
  9. Schedule next progress meeting.

#### **1.03 SPECIAL MEETINGS**

- A. Owner or Engineer may schedule special meetings at the site or at Division of Water Quality offices to resolve construction issues. Contractor and when appropriate, subcontractors, shall attend upon request. No additional compensation shall be paid for meeting attendance.

### **PART 2 – PRODUCTS**

**(NOT USED)**

### **PART 3 – EXECUTION**

**(NOT USED)**

END OF SECTION

## **SECTION 01210 - ALLOWANCES**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. This Section includes administrative and procedural requirements governing allowances. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Defined, allowances. Defined allowances include equipment, systems, or services that have been selected by the Owner from a designated supplier. These will be handled in accordance with paragraph 1.06 of this specification.
  - 2. Undefined allowances. Undefined allowances are intended for work which has an unknown scope at the time of bidding. These will be handled in accordance with paragraph 1.07 of this specification.
- C. The following allowances shall be included in the Contractor's bid:
  - 1. Miscellaneous Site Improvements: \$30,000.00

#### **1.02 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

#### **1.03 SELECTION AND PURCHASE**

- A. At the earliest practical date after award of the Contract, Contractor shall advise Engineer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Engineer's request, obtain proposals for each allowance for use in making final selections and include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by the Engineer from the designated supplier.

#### **1.04 SUBMITTALS**

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

## **1.05 COORDINATION**

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

## **1.06 DEFINED ALLOWANCES**

- A. Contractor's costs at the Project site for labor, installation, overhead and profit, and similar costs related to the equipment ordered under allowance shall be included as part of the Contract Sum and not part of the allowance.
- B. Contractor shall not be allowed any markup of subcontractors work or materials under the allowances. Markup shall be included as part of the Contract sum and not part of the allowance.

## **1.07 UNDEFINED ALLOWANCES**

- A. Undefined allowances shall include work for which the scope is not yet determined. The allowance amount is not guaranteed and is solely for the purpose of determining an initial Contract Price. Undefined allowances are the same as Contingency Allowances as defined in Article 11.02 of the General Conditions.
- B. Once the scope of work is defined, the Contractor shall present cost and schedule as listed in 1.04.A above.

## **1.08 UNUSED MATERIALS**

- A. Contractor shall be responsible for returning unused materials purchased under an allowance to the manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
- B. When it is not economically practical to return material for credit, Contractor shall be responsible for preparing and delivering unused material to Owner's designated storage location. Otherwise, disposal of unused material shall be Contractor's responsibility.

## **PART 2 - PRODUCTS**

**(NOT USED)**

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

### **3.02 PREPARATION**

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

**END OF SECTION**

## SECTION 01300 - SUBMITTALS

### PART 1 - GENERAL

#### 1.01 THE REQUIREMENT

##### A. Progress Schedule

1. Within thirty (30) days after execution of the Agreement, but at least 20 days prior to submitting the first application for a progress payment, the Contractor shall prepare and submit three (3) copies of his proposed progress schedule to the Engineer for review and approval.
2. If so required, the schedule shall be revised until it is approved by the Engineer.
3. The schedule shall be updated monthly, depicting progress to the last day of the month and three (3) copies submitted to the Engineer not later than the fifth day of the month with the application for progress payment.
4. The schedule shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the work and identifying construction activities for each structure and for each portion of work.
5. The schedule shall be time scaled, identifying the first day of each week. The Schedule shall be provided with estimated dates for Early Start, Early Finish, Late Start and Late Finish as applicable. The work shall be scheduled to complete the Project within the Contract time. The Late Finish date shall equal the Contract Completion Date.
6. The schedule shall show duration (number of days) and float for each activity. Float shall be defined as the measure of leeway in starting or completing a scheduled activity without adversely affecting the project completion date established by the Contract Documents.
7. The updated schedule shall show all changes since the previous submittal.
8. All revisions to the schedule must have the prior approval of the Engineer.

##### B. Equipment and Material Orders Schedule

1. Contractor shall prepare and submit three (3) copies of his schedule of principal items of equipment and materials to be purchased to the Engineer for review and approval.
2. If so required, the schedule shall be revised until it is approved by the Engineer.
3. The schedule shall be updated monthly and three (3) copies submitted to the Engineer not later than the fifth day of every month with the application for progress payment.
4. The updated schedule shall be based on the Progress Schedule developed under the requirements of Paragraph 1.01(A) of this Section.
5. The schedule shall be in tabular form with appropriate spaces to insert the following information for principal items of equipment and materials:
  - a. Dates on which Shop Drawings are requested and received from the manufacturer.
  - b. Dates on which certification is received from the manufacturer and transmitted to the Engineer.

- c. Dates on which Shop Drawings are submitted to the Engineer and returned by the Engineer for revision.
- d. Dates on which Shop Drawings are revised by manufacturer and resubmitted to the Engineer.
- e. Date on which Shop Drawings are returned by Engineer annotated either "Furnish as Submitted" or "Furnish as Corrected".
- f. Date on which accepted Shop Drawings are transmitted to manufacturer.
- g. Date of manufacturer's scheduled delivery.
- h. Date on which delivery is actually made.

#### C. Working Drawings

1. Within thirty (30) days after the Notice to Proceed, each prime Contractor shall prepare and submit three (3) copies of his preliminary schedule of Working Drawing submittals to the Engineer for review and approval. If so required, the schedule shall be revised until it is approved by the Engineer.
2. Working Drawings include, but are not limited to, Shop Drawings, layout drawings in plan and elevation, installation drawings, etc. Contractor shall be responsible for securing all of the information, details, dimensions, Drawings, etc., necessary to prepare the Working Drawings required and necessary under this Contract and to fulfill all other requirements of his Contract. Contractor shall secure such information, details, Drawings, etc., from all possible sources including the Drawings, Working Drawings prepared by subcontractors, Engineers, suppliers, etc.
3. In the event that the Engineer is required to provide additional engineering services as a result of a substitution of materials or equipment by the Contractor, the additional services will be provided in accordance with Section 01010 - Summary of Work, and will be covered in supplementary or revised Drawings which will be issued to the Contractor. All changes indicated that are necessary to accommodate the equipment and appurtenances shall be incorporated into the Working Drawings submitted to the Engineer.
4. Shop Drawings
  - a. Contractor shall submit for review by the Engineer Shop Drawings for all fabricated work and for all manufactured items required to be furnished by the Contract Documents.
  - b. Structural and all other layout Drawings prepared specifically for the Project shall have a plan scale of not less than 1/4-inch = 1 foot.
  - c. The submitted documents shall provide information indicating that the materials are in conformance with the Technical Specifications and Contract Documents.
  - d. Where manufacturer's publications in the form of catalogs, brochures, illustrations or other data sheets are submitted in lieu of prepared Shop Drawings, such submittals shall specifically indicate the item for which approval is requested. Identification of items shall be made in ink, and submittals showing only general information are not acceptable.

## 5. Contractor Responsibilities

- a. All submittals from subcontractors, manufacturers or suppliers shall be sent directly to the Contractor for checking. Contractor shall thoroughly check all Drawings for accuracy and conformance to the intent of the Contract Documents. Drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors, manufacturers, or suppliers by the Contractor for correction before submitting them to the Engineer.
- b. All submittals shall be bound, dated, properly labeled and consecutively numbered. Information on the label shall indicate Specification Section, Drawing number, subcontractors', manufacturer's or supplier's name and the name or type of item the submittal covers. Each part of a submittal shall be marked and tabulated.
- c. Working Drawings shall be submitted as a single complete package including all associated drawings relating to a complete assembly of the various parts necessary for a complete unit or system.
- d. Shop Drawings shall be submitted as a single complete package for any operating system and shall include all items of equipment and any mechanical units involved or necessary for the functioning of such system.
- e. ALL SUBMITTALS SHALL BE THOROUGHLY CHECKED BY THE CONTRACTOR FOR ACCURACY AND CONFORMANCE TO THE INTENT OF THE CONTRACT DOCUMENTS BEFORE BEING SUBMITTED TO THE ENGINEER AND SHALL BEAR THE CONTRACTOR'S STAMP OF APPROVAL CERTIFYING THAT THEY HAVE BEEN SO CHECKED. SUBMITTALS WITHOUT THE CONTRACTOR'S STAMP OF APPROVAL WILL NOT BE REVIEWED BY THE ENGINEER AND WILL BE RETURNED TO THE CONTRACTOR. Any comments added to the drawings by the Contractor shall be done in green ink so as to denote any Contractor notes.
- f. If the submittals contain any departures from the Contract Documents, specific mention thereof shall be made in the Contractor's letter of transmittal. Otherwise, the review of such submittals shall not constitute approval of the departure.
- g. No materials shall be ordered, fabricated or shipped or any work performed until the Engineer returns to the Contractor the submittals, herein required, annotated either "Furnish as Submitted" or "Furnish as Corrected".
- h. Where errors, deviations, and/or omissions are discovered at a later date in any of the submittals, the Engineer's prior review of the submittals does not relieve the Contractor of the responsibility for correcting all errors, deviations, and/or omissions.

## 6. Procedure for Review

- a. Submittals shall be transmitted in sufficient time to allow the Engineer at least thirty (30) working days for review and processing.
- b. Contractor shall transmit two (2) prints of each submittal to the Engineer for review for all Drawings greater than 11-inches by 17-inches in size, as well as six (6) copies of all other material. If electronic submittals are used, the Contractor shall transmit two (2) hardcopies of each submittal to the Engineer once the submittal has been reviewed.
  - i. If electronic method of submittals is agreed to by Contractor, Engineer, and Owner, the format and procedure will be determined and implemented prior to any submittals. Submittals will be processed through "Newforma" software. 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.

- c. Submittal shall be accompanied by a letter of transmittal, in duplicate, containing date, project title, Contractor's name, number and titles of submittals, notification of departures and any other pertinent data to facilitate review.
  - d. Submittals will be annotated by the Engineer in one of the following ways:
    - "Furnish as Submitted" - no exceptions are taken.
    - "Furnish as Corrected" - minor corrections are noted and shall be made.
    - "Revise and Resubmit" - major corrections are noted and a resubmittal is required.
    - "Rejected" - Based on the information submitted, the submission is not in conformance with the Contract Documents. The deviations from the Contract Documents are too numerous to list and a completely revised submission of the proposed equipment or a submission of other equipment is required.
  - e. If a submittal is satisfactory to the Engineer, the Engineer will annotate the submittal "Furnish as Submitted" or "Furnish as Corrected", retain four (4) copies and return remaining copies to the Contractor.
  - f. If a resubmittal is required, the Engineer will annotate the submittal "Revise and Resubmit" and transmit five (5) copies to the Contractor for appropriate action.
  - g. Contractor shall revise and resubmit submittals as required by the Engineer until submittals are acceptable to the Engineer. It is understood by the Contractor that Owner may charge the Contractor the Engineer's charges for review in the event a submittal is not approved (either "Furnish as Submitted" or "Furnish as Corrected") by the third submittal for a system or piece of equipment. These charges shall be for all costs associated with engineering review, meetings with the Contractor or manufacturer, etc., commencing with the fourth submittal of a system or type of equipment submitted for a particular Specification Section.
  - h. Acceptance of a Working Drawing by the Engineer will constitute acceptance of the subject matter for which the Drawing was submitted and not for any other structure, material, equipment or appurtenances indicated or shown.
7. Engineer's Review
- a. Engineer's review of the Contractor's submittals shall in no way relieve the Contractor of any of his responsibilities under the Contract. An acceptance of a submittal shall be interpreted to mean that the Engineer has no specific objections to the submitted material, subject to conformance with the Contract Drawings and Specifications. The Engineer will denote any notes in red ink so as to record his comments.
  - b. Engineer's review will be confined to general arrangement and compliance with the Contract Drawings and Specifications only, and will not be for the purpose of checking dimensions, weights, clearances, fittings, tolerances, interferences, coordination of trades, etc.

8. Record Working Drawings

- a. Prior to final payment, the Contractor shall furnish the Engineer one complete set of all accepted Working Drawings, including Shop Drawings, for equipment, piping, electrical work, heating system, ventilating system, air conditioning system, instrumentation system, plumbing system, structural, interconnection wiring diagrams, etc.
- b. Manufacturer's publications, submitted in lieu of prepared Shop Drawings, will not be required in reproducible form. However, three (3) sets of such material shall be furnished by the Contractor to the Engineer.
- c. Working Drawings furnished shall be corrected to include any departures from previously accepted Drawings.

D. Construction Photographs

1. The General Contractor shall take photographs at the locations and at such stages of the construction as directed by the Engineer. Digital format shall be used. Provide all pictures for a given period on a CD or DVD.
2. Provide the equivalent of 36 different exposures per month for the duration of the Contract time. When directed by the Engineer, frequency of photographs may be increased to weekly sessions provided that the equivalent number of exposures is not exceeded. Engineer may waive requirements for photographs during inactive construction periods in favor of increased photographs during active construction sequences.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01320 - PROGRESS SCHEDULES**

### **PART 1 - GENERAL**

#### **1.01 DESCRIPTION OF REQUIREMENTS**

**A. Scheduling Responsibilities:**

1. In order to provide a definitive basis for determining job progress, a construction schedule of a type approved by the Owner will be used to monitor the project.
2. Each week the Contractor shall be responsible for preparing the schedule and updating it based on a tentative two-week basis. It shall at all times remain the Contractor's responsibility to schedule and direct his forces in a manner that will allow for the completion of the work within the contractual period.

**B. Construction Hours:** see Section 01010 – Summary of Work – for construction working hours requirements.

**C. Progress of the Work:**

1. The work shall be started within ten (10) days following the Notice to Proceed and shall be executed with such progress as may be required to prevent delay to other Contractors or to the general completion of the project. The work shall be executed at such times and in or on such parts of the project, and with such forces, material and equipment, to assure completion of the work in the time established by the Contract.
2. The Contractor agrees that whenever it becomes apparent from the current monthly schedule update that delays have resulted and, hence, that the Contract completion date will not be met or when so directed by the Owner, he will take some or all of the following actions at no additional cost to the Owner:
  - a. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.
  - b. Increase the number of working hours per shift, shifts per working day or days per week, the amount of construction equipment, or any combination of the foregoing to substantially eliminate the backlog of work.
  - c. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities, and comply with the revised schedule.
  - d. The Contractor shall submit to the Owner or the Owner's representative for review a written statement of the steps he intends to take to remove or arrest the delay to the critical path in the accepted schedule.

#### **1.02 CONSTRUCTION SCHEDULE**

- A.** Within ten (10) calendar days of the Notice to Proceed, the Contractor shall submit to the Engineer five (5) copies of his proposed schedule. The schedule will be the subject of a schedule review meeting with the Contractor, the Engineer and the Owner or the Owner's representative within one (1) week of its submission. The Contractor will revise and resubmit the schedule until it is acceptable and accepted by the Owner or the Owner's representative.

### **1.03 CONTRACT COMPLETION TIME**

#### **A. Causes for Extensions:**

The Contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any Contract completion date, he shall furnish such justification and supporting evidence as the Owner or the Owner's representative may deem necessary for a determination as to whether the Contractor is entitled to an extension of time under the provisions of this Contract. The Owner, with the assistance of the Engineer, will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor in writing thereof.

#### **B. Requests for Time Extension:**

Each request for change in any Contract completion date shall be initially submitted to the Owner within the time frame stated in the General Conditions. All information known to the Contractor at that time concerning the nature and extent of the delay shall be transmitted to the Owner at that time. Within the time frame stated in the General Conditions but before the date of final payment under this Contract, all information as required above concerning the delay must be submitted to the Owner. No time extension will be granted for requests which are not submitted within the foregoing time limits.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01400 - QUALITY CONTROL

### PART 1 - GENERAL

#### 1.01 THE REQUIREMENT

##### A. Testing Laboratory Services

1. Laboratory testing and checking required by the Specifications, including the cost of transporting all samples and test specimens, shall be provided and paid for by the Owner unless otherwise indicated in the Specifications.
2. Materials to be tested include, but are not necessarily limited to the following: cement, concrete aggregate, concrete, and reinforcing steel.
3. Tests required by the Owner shall not relieve the Contractor from the responsibility of supplying test results and certificates from manufacturers or suppliers to demonstrate conformance with the Specifications.
4. In place testing of compacted materials will be conducted as specified or recommended by Engineer.
5. Procedure
  - a. The Contractor shall plan and conduct his operations to permit taking of field samples and test specimens, as required, and to allow adequate time for laboratory tests.
  - b. The collection, field preparation and storage of field samples and test specimens shall be as directed by the Engineer with the cooperation of the Contractor.
6. Significance of Tests
  - a. Test results shall be binding on both the Contractor and the Owner, and shall be considered irrefutable evidence of compliance or noncompliance with the Specification requirements, unless supplementary testing shall prove, to the satisfaction of the Owner, that the initial samples were not representative of actual conditions.
7. Supplementary and Other Testing
  - a. Nothing shall restrict the Contractor from conducting tests he may require. Should the Contractor at any time request the Owner to consider such test results, the test reports shall be certified by an independent testing laboratory acceptable to the Owner. Testing of this nature shall be conducted at the Contractor's expense.

#### 1.02 IMPERFECT WORK OR MATERIALS

- A. Any defective or imperfect work or materials furnished by the Contractor which is discovered before the final acceptance of the work, as established by the Certificate of Substantial Completion, or during the subsequent guarantee period, shall be removed immediately even though it may have been overlooked by the Engineer and estimated for payment. Any materials condemned or rejected by the Engineer shall be tagged as such and shall be immediately removed from the site. Satisfactory work or materials shall be substituted for that rejected.
- B. The Engineer may order tests of imperfect or damaged work or materials to determine the required functional capability for possible acceptance, if there is no other reason for rejection.

The cost of such tests shall be borne by the Contractor; and the nature, tester, extent and supervision of the tests will be as determined by the Engineer. If the results of the tests indicate that the required functional capability of the work or material was not impaired, consistent with the final general appearance of same, the work or materials may be deemed acceptable. If the results of such tests reveal that the required functional capability of the questionable work or materials has been impaired, then such work or materials shall be deemed imperfect and shall be replaced. The Contractor may elect to replace the imperfect work or material in lieu of performing the tests.

### **1.03 INSPECTION AND TESTS**

- A. The Contractor shall allow the Engineer ample time and opportunity for testing materials to be used in the work. He shall advise the Engineer promptly upon placing orders for material so that arrangements may be made, if desired, for inspection before shipment from the place of manufacture. The Contractor shall at all times furnish the Engineer and his representatives, facilities including labor, and allow proper time for inspecting and testing materials and workmanship. The Contractor must anticipate possible delays that may be caused in the execution of his work due to the necessity of materials being inspected and accepted for use. The Contractor shall furnish, at his own expense, all samples of materials required by the Engineer for testing, and shall make his own arrangements for providing water, electric power, or fuel for the various inspections and tests of structures and material.
- B. Where other tests or analyses are specifically required in other Sections of these Specifications, the cost thereof shall be borne by the party (Owner or Contractor) so designated in such Sections. The Owner will bear the cost of all tests, inspections, or investigations undertaken by the order of the Engineer for the purpose of determining conformance with the Contract Documents if such tests, inspection, or investigations are not specifically required by the Contract Documents, and if conformance is ascertained thereby. Whenever nonconformance is determined by the Engineer as a result of such tests, inspections, or investigations, the Contractor shall bear the full cost thereof or shall reimburse the Owner for said cost. In this connection, the cost of any additional tests and investigations, which are ordered by the Engineer to ascertain subsequent conformance with the Contract Documents, shall be borne by the Contractor.

### **PART 2 – PRODUCTS (NOT USED)**

### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01510 - TEMPORARY UTILITIES**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. The General Contractor shall provide temporary sanitary facilities for the construction operations of this Contract. The temporary services shall be provided for use throughout the construction period.
- B. Temporary Sanitary Service

Sanitary conveniences, in sufficient numbers, for the use of all persons employed on the work and properly screened from public observation, shall be provided and maintained at suitable locations by the General Contractor, all as prescribed by State Labor Regulations and local ordinances. The contents of same shall be removed and disposed of in a manner consistent with local and state regulations, as the occasion requires. Sanitary facilities shall be removed from the site when no longer required.

### **PART 2 – PRODUCTS (NOT USED)**

### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01520 - MAINTENANCE OF UTILITY OPERATIONS DURING CONSTRUCTION

### PART 1 - GENERAL

#### 1.01 THE REQUIREMENT

- A. The sanitary sewer system shall be maintained in continuous operation during the entire construction period of all Contracts as hereinafter specified. The intent of this section is to outline the minimum requirements necessary to provide continuous transference of wastewater throughout the construction period.
- B. Work under each Contract shall be scheduled and conducted by each Contractor so as to not reduce the quality of near-by water streams or cause odor or other nuisance except as explicitly permitted hereinafter. In performing the work shown and specified, the Contractor shall plan and schedule his work to meet the plant and collection system operating requirements, and the constraints and construction requirements as outlined in this Section. No discharge of raw or inadequately treated wastewater shall be allowed. The Contractor shall pay all civil penalties, costs, and assessments associated with any discharge of raw or inadequately treated wastewater associated with the Contractor's work.
- C. The General Contractor shall be responsible for coordinating the general construction and for ensuring that permanent or temporary power is available for all existing, proposed, and temporary facilities that are required to be on line at any given time.
- D. The Contractor has the option of providing additional temporary facilities that can eliminate a constraint, provided it is done without cost to the Owner and provided that all requirements of these Specifications are fulfilled and approved by the Engineer.

#### 1.02 TEMPORARY BYPASS PUMPING

- A. Requirements for this section shall apply to all pumping required for Contractor to perform tie-ins, shutdowns, etc. for construction of the work. Temporary bypass pumping shall be performed in accordance with this section unless noted otherwise herein. Temporary pumping system design calculations and equipment information shall be submitted for review by Engineer per Section 01300. Calculations shall be stamped by a professional engineer registered in the Commonwealth of Kentucky.
- B. Contractor shall furnish, install, maintain, and operate temporary bypass pumping facilities as required to complete the Work. Contractor shall be responsible for all construction necessary to accommodate pumps and piping including but not limited to structure modifications, pump base construction, pipe supports, etc.
- C. The Contractor shall perform a test run of the bypass pumping set-up before being allowed to continue with the full scale bypass pumping.
- D. Contractor shall design the temporary bypass pumping facilities to convey flows from the upstream manholes where existing manhole or sewer tie-ins, replacement, or modifications will be conducted in a manner that will prevent backup of the existing system.
- E. All tie-ins, replacement, or modifications shall be performed during low flow conditions.
- F. All tie-ins, replacement, or modifications Work shall be accomplished as quickly as possible. If Work required extends beyond 8-hours or weather causes higher flows in the existing system during the Work, the new Work shall be stopped and the existing system shall be placed back into service. The new Work shall be properly protected from damage. Any damage to the new Work or damage to surrounding areas caused by the new Work shall be

repaired or replaced at the Owner's decision by the Contractor at the Contractor's sole expense.

- G. Contractor shall provide all power, fuel, maintenance materials, parts, and other expendables in order to maintain temporary pumping through the duration of the Work.
- H. Contractor shall provide one standby pump equal in capacity to the largest pump installed. If temporary pumping requires non-identical pumps in series, a standby pump of each type shall be provided. Temporary control system shall start standby pump on high level and dial-out to local contact who will respond and be on-site within an hour to check and address problem. High-high level shall also alarm and dial-out indicating that standby pump is not maintaining level. Temporary pumping system shall be provided by company that has spare pumps ready to be delivered and installed locally if problems occur.
- I. Contractor shall provide standby power or 48-hour on-site fuel storage capacity for diesel engine type pumps to ensure continuous operation at all times.
- J. Contractor shall provide sound attenuation for temporary pumping facilities to limit noise levels to no more than 85 dBA at a distance of 21 feet from the noise source.
- K. Temporary pumping system shall remain fully operational until all modifications are complete and approved by Owner or Engineer.
- L. Following successful completion of the new Work, Contractor shall remove all temporary pumps, piping and appurtenances and restore area and/or structures to original condition prior to start of work.
- M. Contractor shall prepare Temporary Bypass Plan and submit to Owner and Engineer at pre-construction conference for review and approval.
- N. Contractor shall reconnect to existing gravity sewer at the end of each day, weather delay, or completion of Work so that bypass pumping does not occur when not on jobsite. Overnight bypass pumping will only be allowed when directed by Engineer and Owner.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01530 - PROTECTION OF EXISTING FACILITIES**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. Contractor shall be responsible for the preservation and protection of property adjacent to the work site against damage or injury as a result of his operations under this Contract. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.
- B. Contractor shall comply promptly with such safety regulations as may be prescribed by the Owner or the local authorities having jurisdiction and shall, when so directed, properly correct any unsafe conditions created by, or unsafe practices on the part of, his employees. In the event of the Contractor's failure to comply, the Owner may take the necessary measures to correct the conditions or practices complained of, and all costs thereof will be deducted from any monies due the Contractor. Failure of the Engineer to direct the correction of unsafe conditions or practices shall not relieve the Contractor of his responsibility hereunder.
- C. In the event of any claims for damage or alleged damage to property as a result of work under this Contract, the Contractor shall be responsible for all costs in connection with the settlement of or defense against such claims. Prior to commencement of work in the vicinity of property adjacent to the work site, the Contractor, at his own expense, shall take such surveys as may be necessary to establish the existing condition of the property. Before final payment can be made, the Contractor shall furnish satisfactory evidence that all claims for damage have been legally settled or sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.

#### **1.02 PROTECTION OF WORK AND MATERIAL**

- A. During the progress of the work and up to the date of final payment, the Contractor shall be solely responsible for the care and protection of all work and materials covered by the Contract.
- B. All work and materials shall be protected against damage, injury or loss from any cause whatsoever, and the Contractor shall make good any such damage or loss at his own expense. Protection measures shall be subject to the approval of the Engineer.

#### **1.03 EXISTING UTILITIES AND APPURTENANT STRUCTURES**

- A. The term existing utilities shall be deemed to refer to both publicly-owned and privately-owned utilities such as electric power and lighting, telephone, water, gas, storm drains, sanitary sewers and all appurtenant structures.
- B. Where existing utilities and structures are indicated on the Drawings, it shall be understood that all of the existing utilities and structures affecting the work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any work in the vicinity of existing utilities.
- C. Prior to beginning any excavation work, the Contractor shall, through field investigations, determine any conflicts or interferences between existing utilities and new utilities to be constructed under this project. This determination shall be based on the actual locations,

- elevations, slopes, etc., of existing utilities as determined in the field investigations, and locations, elevation, slope, or other information of new utilities as shown on the Drawings. If an interference exists, the Contractor shall bring it to the attention of the Engineer as soon as possible. If the Engineer agrees that an interference exists, he shall develop a plan to address the interference as required, and obtain the Owner's approval. Additional costs to the Contractor for this change shall be processed through a Change Order as detailed elsewhere in these Contract Documents. In the event the Contractor fails to bring a potential conflict or interference to the attention of the Engineer prior to beginning excavation work, any actual conflict or interference which does arise during the Project shall be corrected by the Contractor, as directed by the Engineer, at no additional expense to the Owner.
- D. The work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure uninterrupted of existing services. Any damage resulting from the work of this Contract shall be promptly repaired by the Contractor at his own expense in a manner approved by the Engineer and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that they perform their own repairs or have them done by others, the Contractor shall be responsible for all costs thereof.
  - E. Where excavations by the Contractor require any utility lines or appurtenant structures to be temporarily supported and otherwise protected during the construction work, such support and protection shall be provided by the Contractor. All such work shall be performed in a manner satisfactory to the Engineer and the respective authority having jurisdiction over such work. In the event the Contractor fails to provide proper support or protection to any existing utility, the Engineer may, at his discretion, have the respective authority to provide such support or protection as may be necessary to ensure the safety of such utility, and the costs of such measures shall be paid by the Contractor. This is not a pay item.

#### **1.04 DOCUMENTATION OF EXISTING STRUCTURES**

- A. The term existing structures shall be deemed to refer to both publicly-owned and privately-owned buildings, structures, and other facilities on the ground surface and any foundations or extensions below the ground surface.
- B. Prior to beginning any excavation work in close proximity to existing structures, the Contractor shall complete a Pre-Construction Survey to assess the condition of existing structures surrounding the work site. The survey must be performed a maximum of 7 days prior to excavation and submitted to the Engineer.
- C. Documentation for the Pre-Construction Survey shall be provided as photographs, videos, and report forms to document each structure. Prior to the Pre-Construction Survey, the construction limits must be flagged. Take photographs and video to show existing conditions adjacent to property and to show existing buildings either on or adjoining property to accurately record physical conditions. Include video and photographs of the visible foundation and wall of the buildings, both inside and outside of each structure. Any existing deformities or cracks must be clearly documented in the video and photographs, and shall be documented from different vantage points.
- E. All photographs and videos shall be digital and provided on compact disc (CD) or digital video disc (DVD). Digital photographs and videos shall be time and date stamped. See Section 01010 for additional video requirements.

#### **PART 2 – PRODUCTS (NOT USED)**

#### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01531 – TREE AND PLANT PROTECTION**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. The Contractor shall be responsible for the protection of existing trees, shrubs, and plants on or adjacent to the work site that are shown or designated to remain in place by the Owner against unnecessary cutting, breaking, or skinning of trunk, branches, bark, or roots. Any damaged trees and plants that die or suffer permanent injury on account of any act, omission, or neglect on the part of the Contractor shall be removed when ordered by the Engineer and replaced by a specimen of equal or better quality at the expense of the Contractor.

#### **1.02 PROTECTION OF TREES AND PLANTS**

- A. The term DBH (Diameter at Breast Height) shall be deemed to refer to the total cross-sectional diameter in inches of a tree measured at a height of four and one-half (4 ½) feet.
- B. The term Tree Protection Area (TPA) shall be deemed to refer to the circular area surrounding a tree of which the center is the center of the bole of the tree and the radial measurement is one (1) foot per inch up to twenty-four (24) inches DBH and 1.5 feet per inch DBH or trees over twenty-four (24) inches DBH or a lesser distance provided it will not adversely affect the health of protected tree(s).
- C. All areas designated for existing tree preservation by the Engineer shall be protected during construction activity. The TPA shall be surrounded by orange plastic fencing at least four (4) feet tall and clearly visible, with signage every twenty-five (25) feet clearly identifying the TPA.
- D. No vehicles, construction materials, equipment, fuel, or temporary or permanent earth fill shall be placed within a TPA. There shall not be any movement of any vehicles into nor within a TPA. No nails, rope, cable, signs, or fencing is to be attached to a tree within a TPA.
- E. Fires shall not be permitted under or adjacent to trees and plants.
- F. The Contractor shall contact the Division of Environmental Services 2 weeks prior to needing their root protection services. (See Site Specific Notes) All exposed roots shall be covered with earth as soon as possible. The Contractor shall protect root systems from mechanical damage and damage by erosion, flooding, run-off or noxious materials in solution.
- G. If branches or trunks are damaged, it is the responsibility of the Contractor to prune branches immediately and protect the cut or damaged areas with emulsified asphalt compounded specifically for horticultural use in a manner approved by the Engineer.

#### **PART 2 – PRODUCT (NOT USED)**

#### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01540 - DEMOLITION AND REMOVAL OF EXISTING STRUCTURES AND EQUIPMENT**

### **PART 1 - GENERAL**

#### **1.01 THE REQUIREMENT**

- A. This Section covers the demolition, removal, and disposal of structures, pavement, curbs, sidewalk, and any existing equipment. The Contractor shall furnish all labor, materials and equipment to demolish and remove structures and equipment designated to be removed on Drawings.

#### **1.02 TITLE TO EQUIPMENT AND MATERIALS**

- A. Contractor shall have no right or title to any of the equipment, materials or other items to be removed from the existing structures unless authorized by Owner.

#### **1.03 CONDITION OF STRUCTURES AND EQUIPMENT**

- A. The Owner does not assume responsibility for the actual condition of structures and equipment to be demolished and removed.

### **PART 2 – PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### **3.01 DEMOLITION AND REMOVALS**

- A. The removal of all equipment and piping, and all materials from the demolition of structures shall, when released by the Owner and Engineer, be done by the Contractor and become the Contractor's property, unless otherwise noted, for disposition in any manner not contrary to the Contract requirements and shall be removed from the site to the Contractor's own place of disposal.
- B. Any equipment piping and appurtenances removed without proper authorization, which are necessary for the operation of the existing facilities shall be replaced to the satisfaction of the Engineer at no cost to the Owner.
- C. Excavation caused by demolitions shall be backfilled with fill free from rubbish and debris.
- D. All materials removed by demolition or excavation shall be lawfully and properly handled and disposed according to applicable local, state, and federal laws. Where materials shall be disposed at landfill, manifests and documentation shall be provided to Owner showing / documenting that materials have been properly handled and disposed.
- E. Manhole frames and covers that have been removed shall become the property of the Contractor and shall be disposed on in a legal manner.

END OF SECTION

## SECTION 01550 - SITE ACCESS AND STORAGE

### PART 1 - GENERAL

#### 1.01 THE REQUIREMENT

##### A. Access Roads

1. The General Contractor shall construct and maintain such temporary access roads as required to perform the work of this Contract.
2. Access roads shall be located within the property lines of the Owner unless the Contractor independently secures easements for his use and convenience. Contractor shall submit written documentation to the Engineer for any Contractor secured easements across privately held property. Easement agreement shall specify terms and conditions of use and provisions for site restoration. A written release from the property owner certifying that all terms of the easement agreement have been complied by the Contractor shall be furnished to the Engineer prior to final payment.
3. Existing access roads used by the Contractor shall be suitably maintained by the Contractor at his expense during construction. Contractor shall not be permitted to restrict Owner access to existing facilities. Engineer may direct Contractor to perform maintenance of existing access roads when Engineer determines that such work is required to insure all weather access by the Owner.
4. The Contractor will maintain the primary roads to be free of mud and dirt. All mud and dirt carried from the access roads to the primary roads shall be washed and cleaned.
5. The Contractor shall obtain and pay all cost associated with any bonds required by the Kentucky Department of Transportation for the use of State maintained roads.

##### B. Parking Areas

1. Each Contractor shall construct and maintain suitable parking areas for his construction personnel on the project site where approved by the Engineer and the Owner.

##### C. Restoration

1. At the completion of the Work, the surfaces of land used for access roads and parking areas shall be restored by the Contractor to its original condition and to the satisfaction of the Engineer.

##### D. Traffic Regulations

1. Contractor shall obey all traffic laws and comply with all the requirements, rules and regulations of the Kentucky Transportation Cabinet, LFUCG, and other local authorities having jurisdiction to maintain adequate warning signs, lights, barriers, etc., for the protection of traffic on public roadways.

##### E. Storage of Equipment and Materials

1. Contractor shall store his equipment and materials at the job site in accordance with the requirements of the Contract Documents, and as hereinafter specified. All equipment and materials shall be stored in accordance with manufacturer's recommendations and as directed by the Owner or Engineer, and in conformity to applicable statutes, ordinances, regulations and rulings of the public authority having jurisdiction.

2. Contractor shall secure a site for staging area and material storage, including portable restroom facilities. Contractor shall not store materials or encroach upon private property without the written consent of the owners of such private property. Use of public lands must be with the written approval of the Owner.
3. Contractor shall not store unnecessary materials or equipment on the job site, and shall take care to prevent any structure from being loaded with a weight which will endanger its security or the safety of persons.
4. Materials shall not be placed within ten (10) feet of fire hydrants. Gutters, drainage channels and inlets shall be kept unobstructed at all times.
5. Contractor shall provide adequate temporary storage buildings/facilities, if required, to protect materials or equipment on the job site.
6. Contractor shall provide Engineer with copy of agreement with property owner of staging area. Contractor will be responsible for all restoration. Agreement between Contractor and property owner shall include language holding the Owner harmless from responsibility and liability.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01560 - TEMPORARY ENVIRONMENTAL CONTROLS

### PART 1 - GENERAL

#### 1.01 GENERAL

- A. Provide and maintain equipment and temporary construction, as necessary to provide controls over environmental and safety conditions at the construction site and adjacent areas. Remove physical evidence of temporary facilities at completion of Work.
- B. Prohibited Construction Activities:
1. Dumping or disposing of excess or unsuitable excavated material in wetlands or floodplains, even with the permission of the property owner.
  2. Locating stockpile storage areas in environmentally sensitive areas.
  3. Indiscriminate, arbitrary, or capricious operation of equipment in any stream corridors, any wetlands, any surface waters, or outside the construction limits.
  4. Pumping of sediment-laden water from trenches or other excavations directly into any surface waters, any stream corridors, any wetlands, or storm sewers; all such water will be properly filtered or settled to remove silt prior to release.
  5. Discharging pollutants such as chemicals, fuels, lubricants, bituminous materials, raw sewage and other harmful waste into or alongside of rivers, streams, impoundments, or into natural or manmade channels leading thereto.
  6. Permanent or unspecified alteration of the flow line of any stream.
  7. Damaging vegetation outside of the construction area.
  8. Disposal of trees, brush, and other debris in any stream corridors, any wetlands, any surface waters, or at unspecified locations.
  9. Open burning of project debris without a permit.
  10. Discharging injurious silica dust concentrations into the atmosphere resulting from breaking, cutting, chipping, drilling, buffing, grinding, polishing, shaping or surfacing closer than 200 feet to places of residences or commercial, professional, quasi-public or public places of human occupation.
  11. Storing construction equipment and vehicles and/or stockpiling construction materials on property, public or private, not previously authorized for such purposes as noted in Section 01550.
  12. Running well point or pump discharge lines through private property or public property and rights-of-way without an easement or the written permission of the property owner and the consent of the ENGINEER.
  13. Non-compliance with the Contractor's, OSHA's, or the Owner's safety requirements.
  14. Operations entailing the use of vibratory hammers or compactors outside the hours listed in Section 01010 - Summary of Work, or outside the hours allowed for construction by local ordinances or regulations.

## **1.02 SAFETY ADVISORY**

- A. Scope: Sewer Installation
  - 1. Maintaining jobsite safety
  - 2. Maintaining traffic safety
- B. LFUCG-funded projects have a contractual and legal obligation for performance and breach of contract in regard to the safety of all exposed personnel. Reference the Occupational Safety Health Administration (OSHA) Multi Employer Citation Policy: Multi-employer Worksites, The Creating Employer, The Exposing Employer, The Correcting Employer, The Controlling Employer, Multiple Roles.
- C. The Contractor shall at all times conduct the work safely in order to assure a safe work site. The Contractor shall be responsible for the safety of the Contractor's employees, agents and subcontractors, Owner's personnel and all other personnel or persons at the work site. The Contractor shall be responsible for the adequacy and safety of all construction methods or procedures and the safe prosecution of the work.
- D. The Contractor shall be responsible at all times to conduct the work and keep the work site in compliance with federal, state, and local safety Laws and Regulations, including but not limited to Occupational Safety and Health (OSHA) requirements. This includes shaft drilling operations, concrete moving and placement, confined space entry requirements for trench construction, including use of a trench box or other shoring to support trench walls and proper means of exit from an excavation.
- E. The Contractor shall have an authorized and competent safety representative as defined above on the work site at frequent and regular intervals, or more often, as conditions require. Failure to have such a person at the site as specified herein constitutes an unsafe practice.
- F. The Contractor shall be responsible to suspend Work whenever a Work method or procedure or condition at work site is unsafe.
- G. The Contractor shall submit a written notification to the Owner of any accident or injury. Such notification shall include the Contractor's investigation and what measures are appropriate to avoid such accidents. Payment applications will not be authorized until such notice is provided.
- H. Failure of the Contractor to comply with any provision of this Specification section or the Owner's safety requirements or any federal, state or local safety Laws and Regulations constitute just cause for the Owner to order suspension of Work.
- I. None of the provisions of the section are intended to, nor shall be construed to, create any duty or responsibility on the Owner or Engineer to provide or enforce safety requirements of the Contractor. The duty, responsibility, and liability for safety shall remain with the Contractor.

## **1.03 AIR POLLUTION AND NOISE CONTROL**

- A. Contractor's vehicles and equipment shall be such as to minimize noise to the greatest degree practicable. Noise levels shall conform to the latest OSHA standards and in no case will noise levels be permitted which interfere with the work of the Owner or others.
  - 1. Construction activities will be limited to hours specified in Section 01010 – Summary of Work.
  - 2. Construction equipment will be provided with intake silencers and mufflers, as required by safety standards.

3. All construction vehicles should be equipped with proper emissions control equipment.
4. Periodically check equipment and machinery for proper tuning to minimize exhaust emissions and noise.

#### **1.04 DUST CONTROL**

- A. Contractor shall be responsible for controlling objectionable dust caused by his operation of vehicles and equipment, clearing or for any reason whatever. Contractor shall apply water or use other methods subject to the Engineer's approval which will keep dust in the air to a minimum. Dust control measures shall be implemented multiple times throughout each working day if necessary.

#### **1.05 PEST AND RODENT CONTROL**

- A. Provide rodent and pest control as necessary to prevent infestation of construction or storage area.
  1. Employ methods and use materials which will not adversely affect conditions at the site or on adjoining properties.

#### **1.06 WATER CONTROL**

- A. Contractor shall comply with the Storm Water Pollution Prevention Plan (SWPPP) approved by LFUCG.
- B. Provide methods to control surface water and water from excavations and structures to prevent damage to the Work, the site, or adjoining properties.
- C. Provide, operate and maintain equipment and facilities of adequate size to control surface water.
- D. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas and in conformance with all environmental requirements.

#### **1.07 POLLUTION CONTROL**

- A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
- B. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids.
  1. Excavate and dispose of any contaminated earth offsite, and replace with suitable compacted fill and topsoil.
- C. Take special measures to prevent harmful substances from entering public waters.
  1. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.

- D. Provide systems for control of atmospheric pollutants.
  - 1. Prevent toxic concentrations of chemicals.
  - 2. Prevent harmful dispersal of pollutants into the atmosphere.
- E. All Contractor's equipment used during construction shall conform to all current federal, state and local laws and regulations.

**1.08 EROSION AND SEDIMENT CONTROL**

- A. See Section 02372 for erosion and sediment control requirements.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01580 – PROJECT IDENTIFICATION AND SIGNS**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. The Contractor shall provide signs 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.

### **PART 2 - PRODUCTS**

#### **2.01 IDENTIFICATION SIGN**

- A. Basic design shall be as shown in the sample on page 01580-2 below, and shall include at a minimum the names of the Project, the Owner, the Contractor, and the Engineer. This sign shall be 3' x 6' and provided and installed by the Contractor.
- B. "Working Hard" sign (as shown on page 01580-3) shall be provided by the Owner and mounted and installed by the Contractor. Contractor shall provide posts and backing.
- C. Colors shall be as selected by the Engineer.
- D. Number Required: One.

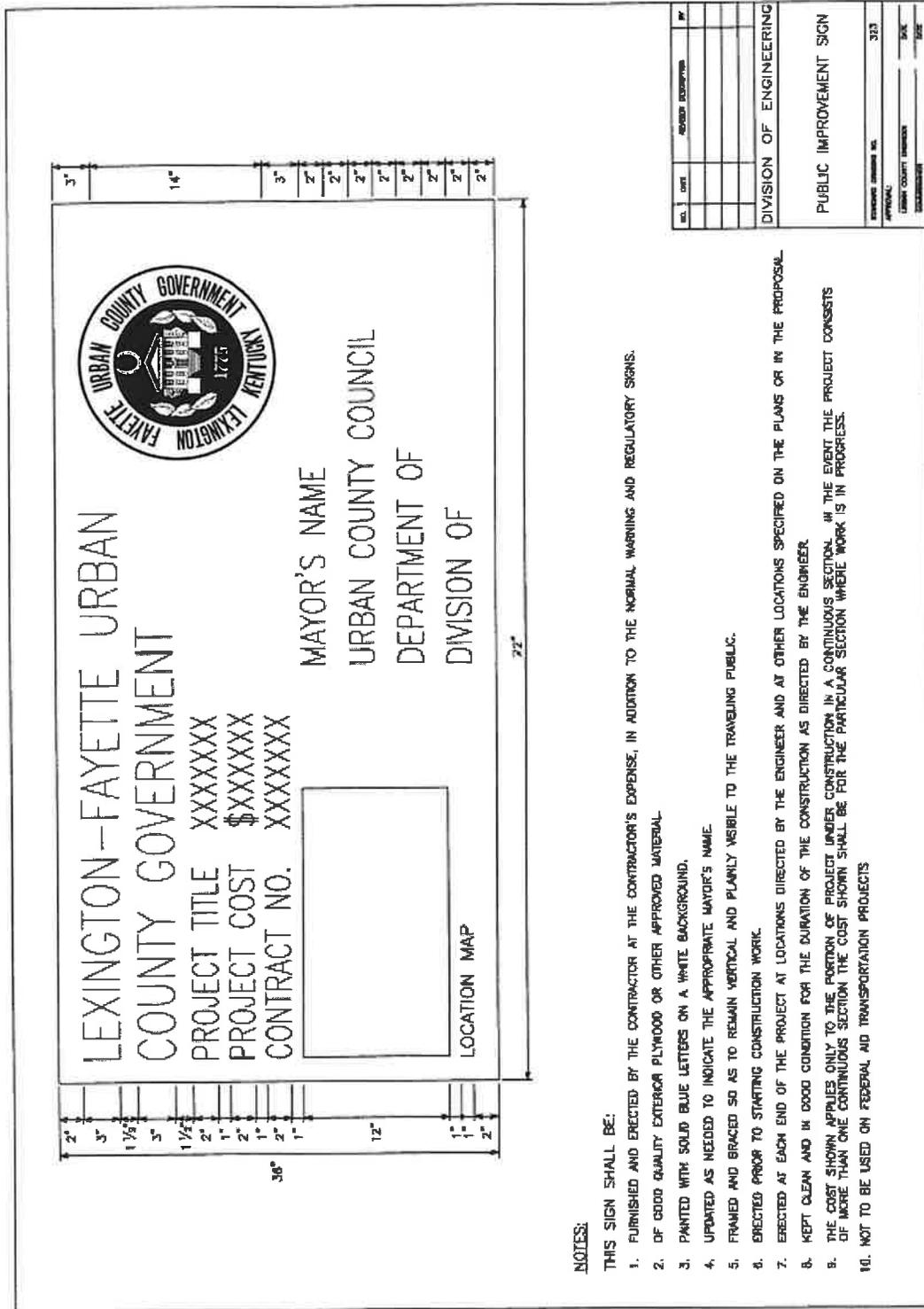
### **PART 3 - EXECUTION**

#### **3.01 INSTALLATIONS**

- A. Signs shall be installed at locations specified by the Engineer and installed in accordance with the detail below.

#### **3.02 MAINTENANCE**

- A. The signs shall be maintained in good condition until the completion of the Project and then removed by the Contractor.



**NOTES:**

THIS SIGN SHALL BE:

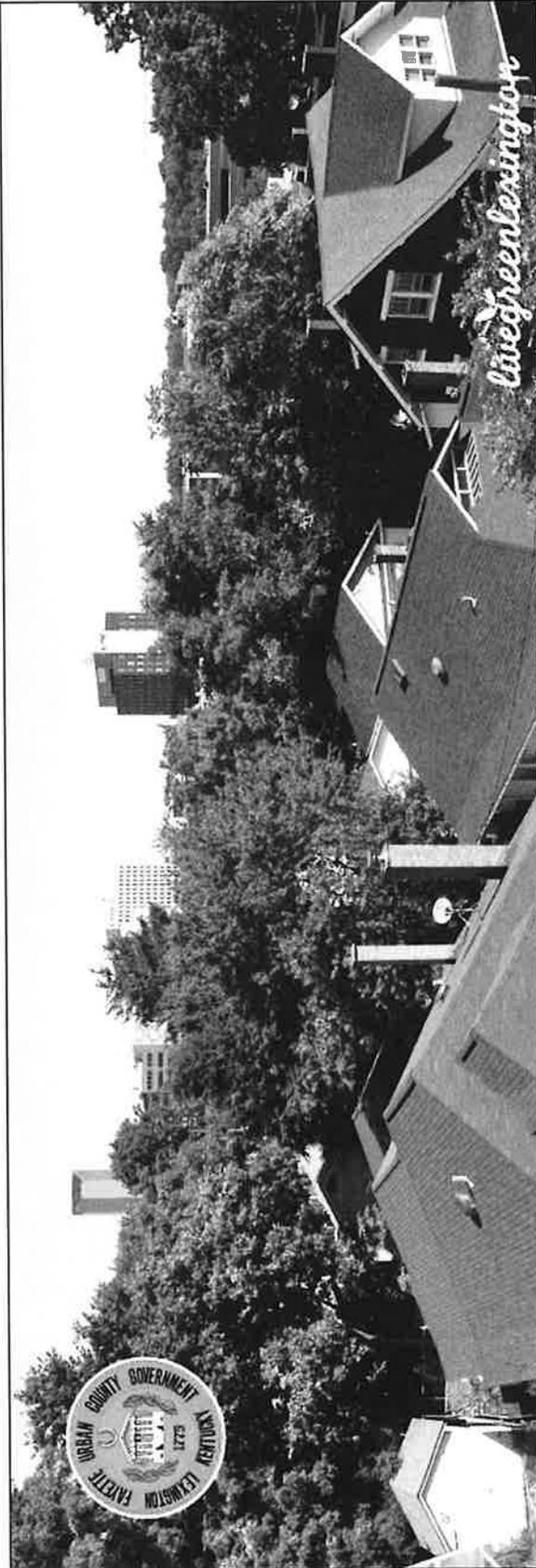
1. FURNISHED AND ERECTED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, IN ADDITION TO THE NORMAL WARNING AND REGULATORY SIGNS.
2. OF GOOD QUALITY EXTERIOR PLYWOOD OR OTHER APPROVED MATERIAL.
3. PAINTED WITH SOLID BLUE LETTERS ON A WHITE BACKGROUND.
4. UPDATED AS NEEDED TO INDICATE THE APPROPRIATE MAYOR'S NAME.
5. FRAMED AND BRACED SO AS TO REMAIN VERTICAL AND PLAINLY VISIBLE TO THE TRAVELING PUBLIC.
6. ERECTED PRIOR TO STARTING CONSTRUCTION WORK.
7. ERECTED AT EACH END OF THE PROJECT AT LOCATIONS DIRECTED BY THE ENGINEER AND AT OTHER LOCATIONS SPECIFIED ON THE PLANS OR IN THE PROPOSAL.
8. KEPT CLEAN AND IN GOOD CONDITION FOR THE DURATION OF THE CONSTRUCTION AS DIRECTED BY THE ENGINEER.
9. THE COST SHOWN APPLIES ONLY TO THE PORTION OF PROJECT UNDER CONSTRUCTION IN A CONTIGUOUS SECTION. IN THE EVENT THE PROJECT CONSISTS OF MORE THAN ONE CONTIGUOUS SECTION THE COST SHOWN SHALL BE FOR THE PARTICULAR SECTION WHERE WORK IS IN PROGRESS.
10. NOT TO BE USED ON FEDERAL AID TRANSPORTATION PROJECTS

NO.	DATE	REVISIONS	BY

DIVISION OF ENGINEERING

PUBLIC IMPROVEMENT SIGN

APPROVAL	DATE	SIGNATURE



[lexingtonky.gov](http://lexingtonky.gov)

**WORKING HARD  
TO IMPROVE YOUR NEIGHBORHOOD**  
Your Sanitary Sewer Fees Are Making Lexington A Better Place To Live

END OF SECTION

## SECTION 01631 - PRODUCTS AND SUBSTITUTIONS

### PART 1 - GENERAL

#### 1.01 DESCRIPTION OF REQUIREMENTS

- A. General: Substitution of materials and/or equipment is defined in the General Conditions and more fully hereinafter.
- B. Substitutions: The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "substitutions", and are subject to the requirements specified herein. The following are not considered as substitutions:
  - 1. Revisions to the Contract Documents, where requested by the Owner and Engineer are considered as "changes" not substitutions.
  - 2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the Contract Documents and are not subject to the requirements for substitutions as herein specified.
  - 3. Specified Contractor options on products and construction methods included in the Contract Documents are choices available to the Contractor and are not subject to the requirements for substitutions as herein specified.
  - 4. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing regulations and orders as issued by governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.

#### 1.02 SUBMITTALS

- A. The information required to be furnished for evaluation of product substitution will be as follows:
  - 1. Performance capabilities, and materials and construction details will be evaluated based upon conformance with the Specifications. Products that do not conform with the Specification shall not be accepted.
  - 2. Manufacturer's production and service capabilities, and evidence of proven reliability will be acceptable if the following is furnished.
    - a. Written evidence that the manufacturer has not less than (3) years' experience in the design and manufacture of the substitute product.
    - b. Written evidence of at least one application, of a type and size similar to the proposed substitute product, in successful operation in a wastewater treatment plant or collection system for a period of at least one year.
    - c. In lieu of furnishing evidence of a manufacturer's Experience and successful operation of an application of the product to be substituted, the Contractor has the option of furnishing a cash deposit or bond which will guarantee replacement if the product the furnished does not satisfy the other requirements specified in this section. The amount of each deposit or bond will be subject to the approval.
  - 3. Specific reference to characteristics either superior or inferior to specified requirements will be evaluated based on their net effect on the project. Products with any

characteristics inferior to those specified will not be acceptable unless offset by characteristics that, in the opinion of the Engineer, will cause the overall effect of the product on the project to be at least equal to that of those specified.

### **1.03 QUALITY ASSURANCE**

- A. Source Limitations: To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.
- B. Compatibility of Options: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents, but must be provided by the Contractor.
- C. The detailed estimate of operating and maintenance costs will be evaluated based on comparison with similar data on the specified products. Proposed substitute products which have an operating and maintenance cost that, in the opinion of the Engineer, exceeds that of the specified products will not be considered equal and will not be acceptable.

### **1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING**

- A. General: Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the site and to prevent overcrowding of construction spaces. In particular coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other sources of loss.
  - 1. Deliver products to the site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
  - 2. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
  - 3. Store heavy materials away from the project construction in a manner that will not endanger the supporting construction.

## **PART 2 - PRODUCTS**

### **2.01 GENERAL PRODUCT COMPLIANCE**

- A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements is in itself a Contract Requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following:
  - 1. Proprietary
  - 2. Descriptive
  - 3. Performance
  - 4. Compliance with Reference Standards

Compliance with codes, compliance with graphic details and similar provisions of the Contract Documents also have a bearing on the review and approval outcome.

- B. Procedures for Selecting Products: Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects.

## 2.02 SUBSTITUTIONS

- A. Conditions: Contractor's request for substitution will be received and considered when extensive revisions to the Contract Documents are not required, when the proposed changes are in keeping with the general intent of the Contract Documents, when the request is timely, fully documented and properly submitted, and when one or more of the following conditions is satisfied, all as judged by the Engineer; otherwise the requests will be returned without action except to record non-compliance with these requirements.
  1. The Engineer will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the Contract Documents.
  2. The Engineer will consider a request for substitution where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.
  3. The Engineer will consider a request for substitution where the specified product or method cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
  4. The Engineer will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
  5. The Engineer will consider a request for substitution when the specified product or method cannot be provided in a manner which is compatible with other materials of the work, and where the Contractor certifies that the substitution will overcome the incompatibility.
  6. The Engineer will consider a request for substitution when the specified product or method cannot be properly coordinated with other materials in the work, and where the Contractor certifies that the proposed substitution can be properly coordinated.
  7. The Engineer will consider a request for substitution when the specified product or method cannot receive a warranty as required by the Contract Documents and where the Contractor certifies that the proposed substitution receive the required warranty.
  8. The Contractor shall reimburse the Owner any costs for review by the Engineer of proposed product substitutions which require major design changes, as determined by the Owner, to related or adjacent work made necessary by the proposed substitutions.
- B. Work-Related Submittals: Contractor's submittal of and the Engineer's acceptance of shop drawings, product data or samples which relate to work not complying with requirements of the Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

## **2.03 GENERAL PRODUCT REQUIREMENTS**

- A. General: Provide products that comply with the requirements of the Contract Documents and that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
1. Standard Products: Where they are available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  2. Continued Availability: Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard, domestically produced products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Owner at a later date.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION OF PRODUCTS**

- A. General: Except as otherwise indicated in individual sections of these Specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at Time of Acceptance.

END OF SECTION

## **SECTION 01731 - CUTTING AND PATCHING**

### **PART 1 - GENERAL**

#### **1.01 SUMMARY**

- A. This Section includes procedural requirements for cutting and patching.
- B. The Contractor shall be responsible for all cutting, fitting or patching that may be required to complete the work or to make its parts fit together properly.
- C. The Contractor shall not damage or endanger any portion of the Work or the Work of the Owner or any separate contractors by cutting, patching or otherwise altering any work, or by excavation.
- D. Any cutting of existing structures or facilities shall be approved in advance by Owner or Engineer. Approval shall not impact Contractor's full liability for any damage caused.

#### **1.02 QUALITY ASSURANCE**

- A. Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.

#### **1.03 WARRANTY**

- A. Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials, to the extent practicable.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the functional performance of existing materials.

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

#### **3.02 PREPARATION**

- A. Temporary Support: Provide temporary support of Work to be cut.

- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

### 3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
  - 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

END OF SECTION

## **SECTION 01740 - CLEANING**

### **PART 1 - GENERAL**

#### **1.01 DESCRIPTION OF REQUIREMENTS**

- A. Maintain premises free from accumulations of waste, debris, and rubbish.
- B. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces. Leave project clean and ready for occupancy.

#### **1.02 RELATED DOCUMENTS**

- A. Cutting and Patching: Section 01731.
- B. Project Closeout: Section 01770.
- C. Cleaning for Specific Products of Work: Specification Section for that work.

#### **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 noxious substances.
- B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
  - 1. Do not burn or bury rubbish and waste materials on project site.
  - 2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in 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 building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.

- B. Wet down dry materials and rubbish to lay dust and prevent 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 Owner's property.
- F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

### **3.02 FINAL CLEANING**

- A. Employ experienced workmen, or professional cleaners, for final cleaning.
- B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior or exterior finished surfaces; polish surfaces so designated to shine finish.
- D. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.
- E. Broom clean paved surfaces; rake clean other surfaces of grounds.
- F. Maintain cleaning until project, or portion thereof, is occupied by Owner.

END OF SECTION

## **SECTION 01770 - PROJECT CLOSEOUT**

### **PART 1 - GENERAL**

#### **1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE**

- A. Liquidated Damages: Supplemental General Conditions
- B. Cleaning: Section 01740.
- C. Project Record Documents: Section 01785.

#### **1.02 SUBSTANTIAL COMPLETION**

- A. In order to initiate project closeout procedures, the Contractor shall submit the following:
  - 1. Written certification to Engineer that project is Substantially Complete.
  - 2. List of major items to be completed or corrected.
- B. Engineer will make an inspection within seven (7) 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 01740.
  - b. Owner will occupy Project, under provisions stated in Certificates of Substantial Completion.
4. Contractor: Complete work listed for completion or correction, within designated time.
- D. Should Engineer consider that work is not Substantially Complete:
  1. Engineer shall immediately notify Contractor, in writing, stating reasons.
  2. Contractor: Complete work, and send second written certification to Engineer, certifying that Project or designated portion of Project is substantially complete.
  3. Engineer will reinspect work.
- E. Should Engineer consider that work is still not finally complete:
  1. Engineer shall notify Contractor, in writing, stating reasons.
  2. Contractor shall take immediate steps to remedy the stated deficiencies, and send third written notice to the Engineer certifying that the work is complete.
  3. Engineer and Owner will reinspect work at Contractor's expense.

### **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. Engineer 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 CLOSEOUT SUBMITTALS**

- A. Project Record Documents: To requirements of Section 01785.
- B. Guarantees, Warranties and Bonds: To requirements of particular technical Specifications and Section 01782.
- C. Project Closeout Checklist: Contractor shall submit all required items to the Engineer and/or Owner with their responsibility identified. See Project Closeout Checklist included in this section.

#### **1.05 INSTRUCTION**

- A. Instruct Owner's personnel in operation of all systems, mechanical, electrical, and other equipment.

#### **1.06 FINAL APPLICATION FOR PAYMENT**

- A. Contractor shall submit final applications in accordance with requirements of General Conditions.

#### **1.07 FINAL CERTIFICATE FOR PAYMENT**

- A. Engineer will issue final certificate in accordance with provisions of general conditions.
- B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Semi-Final Certificate for Payment.

### **PART 2 – PRODUCTS (NOT USED)**

### **PART 3 – EXECUTION**

#### **3.01 PROJECT CLOSEOUT CHECKLIST**

- A. See attached Project Closeout Checklist.



## RMP Project Closeout Checklist

EOR  
 Contractor  
 DWQ PM  
 RMP PM

DWQ Project Manager (DWQ PM): Bob Peterson, PE

RMP Project Manager (RMP PM):

Engineer of Record (EOR):

Contractor:

File Manager: Dawn Williams

Project Name:

Task	From	To	CC	Complete/ Submitted	Approved	Closeout Requirement	Notes
<b>Contract Administration Closeout Checklist</b>							
1	EOR	DWQ PM				Copy of plan to file (plan will include description of facility, how it was design to work, etc) DWQ PM will provide copy to Pump Station Maintenance or Plant Staff	
2	EOR	DWQ PM				Report from EOR/Manufacturer with date of startup	
3	Contractor	LFLUG Staff				Letter or email from EOR with attendees to file	
4	Contractor	EOR / LFLUG Staff				Letter or email from EOR with date of startup and attendees to file	
5	Contractor	EOR/DWQ PM				Hard Copies In File	
6	EOR	DWQ PM	File Manager			Memo from EOR to file	
7	Contractor	EOR	File Manager			Memo from Contractor to file	
8	EOR	DWQ PM	Contractor			EOR Memo to file	
9	EOR	DWQ PM		file		Complete all submittals to file	
10	EOR	Contractor	DWQ PM			Purchase to file	
11	EOR	DWQ PM	File Manager			Memo from EOR to file	
12	DWQ PM	Contractor	EOR			Play logs to file	
13	EOR	DWQ PM	RMP PM			EOR Memo to file	
14	EOR	Contractor, plus EOR				Copy of signed final change order	
15	Contractor	EOR	DWQ PM			Letter to file	
16	Contractor	EOR	DWQ PM			EOR Document to File	
17	Contractor	EOR	DWQ PM			EOR Document to File	
18	Contractor	EOR	DWQ PM			EOR Document to File	
19	Contractor	EOR	DWQ PM			EOR Memo to file	
20	Contractor	EOR	DWQ PM			Final Pay App to file	
21	Contractor	EOR	DWQ PM			EOR Memo to file	
22	Contractor	EOR	RMP PM			Copy to file	
23	DWQ PM	Contractor	EOR			Copy to file	
24	DWQ PM	Contractor	EOR			Copy to file	

END OF SECTION

## SECTION 01780 – OPERATIONS AND MAINTENANCE MANUALS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- 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. 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.
- C. Related requirements specified elsewhere:
  - 1. Submittals: Section 01300.
  - 2. Project Closeout: Section 01770.
  - 3. Project Record Documents: Section 01785.
  - 4. Warranties and Bonds: Section 01782.

#### 1.02 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 in. x 11 in.
  - 2. Paper: 20 pound minimum, white.
  - 3. Text: Manufacturer's printed data.
  - 4. Photo copies must be clear and legible.
  - 5. Drawings:
    - a. Provide reinforced punched binder tab, bind in with text.
    - b. Fold large drawings to the size of the text pages where feasible.
    - c. For flow or piping diagrams that cannot be detailed on the standard size drawings, a larger, appropriate size drawing may be submitted and supplied in a properly marked map packet.
  - 6. 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.

7. 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" D-ring binders, with oil and moisture resistant hard covers.
2. When multiple binders are used, correlate the data into related consistent grouping.
3. Imprinted on the front cover and side of each binder shall be the name of the Plant, the Contract Number and Volume Number.
4. Binders shall be new and not recycled from a prior data manual.

**1.03 SUBMITTAL SCHEDULE**

- A. Submit one (1) copy of preliminary draft of proposed formats and outlines of contents prior to operation of equipment. Engineer will review draft and return with comments.
- B. Submit one (1) copy of completed data for final review prior to the completion of the Contract and before payment in excess of 90% of the total Contract amount is authorized.
- C. Provide two (2) copies plus pdf on CD of approved completed O & M Manual in final form ten (10) days prior to final inspection or acceptance to the Owner. Final version of each manual shall reflect any changes made during testing and start-up of equipment.

**1.04 QUALITY ASSURANCE**

- A. Preparation of data shall be done by personnel:
  1. Trained and experienced in maintenance and operation of the described products.
  2. Completely familiar with requirements of this Section.
  3. Skilled as a technical writer to the extent required to communicate essential data.
  4. Skilled as a draftsman competent to prepare required drawings.

**1.05 CONTENTS OF MANUAL**

- A. Each item of equipment shall be placed in a logical sequential order, as listed or ordered in the Contract Documents.
- B. Content, for each unit of equipment and system, as appropriate:
  1. Detailed description of the process and operation procedures as applicable.
  2. Instructions for all components of the equipment whether manufactured by the supplier or not, including valves, controllers and other miscellaneous components.

3. Description of unit and component parts.
  - a. Function, normal operating characteristics, and limiting conditions.
  - b. Performance curves, engineering data and tests.
  - c. Complete nomenclature and commercial number of all replaceable parts.
  - d. Exploded and/or sectional drawing views.
  - e. Equipment model number.
4. Operating procedures:
  - a. Start-up, break-in, routine and normal operating instructions.
  - b. Regulation, control, stopping, shutdown and emergency instructions.
  - c. Summer and winter operating instructions.
  - d. Special operating instructions.
5. Maintenance Procedures:
  - a. Routine operations.
  - b. Guide to "trouble-shooting".
  - c. Disassembly, repair and reassembly.
  - d. Alignment, adjusting and checking.
  - e. Preventative maintenance schedule.
  - f. Recommended spare parts list and quantities.
  - g. Equipment parts list.
  - h. Local service center.
6. Servicing and Lubrication schedule.
  - a. List of lubricants required.
  - b. Lubrication procedures.
  - c. Lubrication schedule.
7. Internal and external wiring and piping diagrams numbered to correspond to the installation.
8. Description of sequence of operation by control supplier.
9. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
  - a. Predicted life of parts subject to wear.

10. As-installed control diagrams by controls supplier.
  11. Each Contractor's coordination drawings.
    - a. As-installed color coded piping diagrams.
  12. Charts of valve tag numbers, with the location and function of each valve.
  13. Other data as required under pertinent sections of Specifications.
- C. Content, for each electrical system, as appropriate:
1. Description of system and component parts.
    - a. Function, normal operating characteristics, and limiting conditions.
    - b. Performance curves, engineering data and tests.
    - c. Complete nomenclature and commercial number of replacement parts.
  2. Circuit directories of panel boards.
    - a. Electrical service.
    - b. Controls.
    - c. Communications.
  3. As-installed color-coded wiring diagrams.
  4. Operating procedures:
    - a. Routine and normal operating instructions.
    - b. Sequences required.
    - c. Special operating instructions.
  5. Maintenance procedures:
    - a. Routine operations.
    - b. Guide to "trouble-shooting".
    - c. Disassembly, repair and reassembly.
    - d. Adjustment and checking.
  6. Manufacturer's printed operating and maintenance instructions.
  7. List of original manufacturer's recommended spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
  8. Other data as required under pertinent sections of Specifications.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.

E. Additional requirements for operating and maintenance data: The respective section of Specifications.

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01782 - WARRANTIES AND BONDS**

### **PART 1 - GENERAL**

#### **1.01 DESCRIPTION OF REQUIREMENTS**

- 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. Submit to Engineer for review and transmittal to Owner.

#### **1.02 RELATED DOCUMENTS**

- A. Bid Bond: Instructions to Bidders.
- B. Performance and Payment Bonds: General Conditions and Supplemental General Conditions.
- C. Guaranty: General Conditions and Supplemental General Conditions.
- D. General Warranty of Construction: General Conditions.
- E. Project Closeout: Section 01770.
- F. Warranties and Bonds required for specific products: As listed herein.
- G. Provisions of Warranties and Bonds, Duration: Respective specification sections for particular products.

#### **1.03 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.

#### **1.04 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.
    - a. 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.

#### **1.05 TIME OF SUBMITTALS**

- A. For equipment or component parts of equipment put into service during progress of construction:
  1. 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.

#### **1.06 SUBMITTALS REQUIRED**

- A. Submit warranties, bonds (see section 00600), service and maintenance contracts as specified in the respective sections of the Specifications.

#### **PART 2 – PRODUCTS (NOT USED)**

#### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 01785 - PROJECT RECORD DOCUMENTS**

### **PART 1 - GENERAL**

#### **1.01 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.

#### **1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Submittals: Section 01300.

#### **1.03 MARKING DEVICES**

- A. Provide colored pencil or felt-tip marking pen for all marking.

#### **1.04 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.

#### **1.05 SUBMITTALS**

- A. At completion of project, deliver two hard copies and one CD with pdf of all 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.

#### **PART 2 – PRODUCTS (NOT USED)**

#### **PART 3 – EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 02240 - DEWATERING**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. Furnish all labor and equipment required to dewater all excavations.
- B. Dewatering of all excavations shall be the responsibility of the Contractor, and no additional compensation will be allowed for same.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION**

#### **3.01 GENERAL**

- A. Dewatering equipment shall be of adequate size and quantity to assure maintaining proper conditions for installing pipe, concrete, backfill or other material or structure in the excavation.
- B. Dewatering shall include proper removal of any and all liquid, regardless of its source, from the excavation.
- C. The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches, dikes and shall perform all pumping and other work necessary to divert or remove rainfall and all other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent flooding and/or damage to other locations within the construction area where it may be detrimental.
- D. The Contractor shall provide, install and operate sufficient trenches, sumps, pumps, hose piping, well points, deep wells, etc., necessary to depress and maintain the ground water level below the base of the excavation during all stages of construction operations.
- E. No groundwater from the excavated area shall be discharged into the sanitary sewer system.
- F. Dewatering shall be in accordance with all state and local regulations/permits/plans.
- G. Trench shall be dewatered as required and never shall the trench accumulate groundwater to a depth that will cause pipe to float.

END OF SECTION

## SECTION 02370 - EROSION AND SEDIMENT CONTROL

### PART 1 - GENERAL

#### 1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, and equipment required for installing, maintaining, amending, and removing temporary soil erosion, sediment, and pollutant controls as shown in the Erosion and Sediment Control Plan or Stormwater Pollution Prevention Plan (hereinafter referred to generally as the SWPPP) and as specified herein and as required by the LFUCG Land Disturbance Permit, Chapter 16-Article X, Division 5 of the LFUCG Code of Ordinances, and the KPDES General Permit for Stormwater Discharges Associated with Construction Activities (KYR10).
- B. The Contractor shall take all site management measures necessary to minimize erosion and contain sediment, construction materials (including excavation and backfill), and pollutants (such as chemicals, fuels, lubricants, bitumen, raw sewage, and other harmful waste) on the site, and prevent them from being discharged offsite or into or alongside any body of water or into natural or man-made conveyances leading thereto.
- C. The Contractor shall at all times minimize land disturbance and the period of time that the disturbed area is exposed without stabilization practices. In "critical areas" (within 25 feet of a perennial or intermittent stream, wetland, sinkhole, inlet or other waterbody) erosion prevention measures such as working during dry periods, use of sediment controls, and use of erosion control mats/blankets, mulch, or straw blown in and stabilized with tackifiers or by treading, etc. shall be implemented on disturbed areas within 24 hours or "as soon as practical" after completion of disturbance/grading or following cessation of activities.
- D. Temporary erosion controls include, but are not limited to sodding, mulching, seeding, providing erosion control blankets and turf reinforcement mats on all disturbed surfaces including waste area surfaces and stockpile and borrow area surfaces; covering small disturbed areas with tarps or other materials; scheduling work to minimize erosion; and providing diversion or interceptor ditches to minimize the discharge of sediment.
- E. Temporary sedimentation controls include, but are not limited to, silt fences, rock check dams, berms, traps, barriers, fiber logs, storm drain inlet filters, and appurtenances on sloped surfaces to minimize the discharge of sediment.
- F. Contractor is responsible for providing and maintaining effective temporary erosion and sediment control measures prior to and during construction or until final controls become effective and the site is stabilized in accordance with state and local requirements.
- G. Prior to construction, the Contractor shall obtain an LFUCG Land Disturbance Permit and shall obtain coverage under the KPDES General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) (see Article 3.24 in this Section) if required. The Contractor shall be responsible for placement of pollutant, erosion, and sedimentation controls as shown in the Stormwater Pollution Prevention Plan 9(SWPPP) prior to excavation, fill, or grade work. If during the course of construction, the state and/or LFUCG determine additional controls are required, the Contractor shall furnish, install, and maintain additional seeding, mulch, blankets, sediment barriers, diversion or other ditches, and/or other controls as necessary to control pollution, erosion, and sedimentation to the satisfaction of the regulatory agency.
- H. The Contractor shall inspect and repair all erosion and sedimentation controls as follows:
  1. At least once every seven (7) calendar days, and

2. Within 24 hours after any rainfall event of 0.5 inch or greater (or 4 inches of snow or greater).
  - I. Final stabilization practices on those portions of the project where land disturbance activities have permanently ceased shall be initiated within fourteen (14) days of the date of cessation of land disturbance activities. Temporary stabilization for those portions of the project where land disturbance has temporarily ceased (e.g., temporary seeding, mulching, etc.) shall be initiated within fourteen (14) days of the date of cessation of land disturbance activities.
  - J. **Erosion and Sediment Control prevention measures shall be installed prior to removal of vegetation, grading, and/or stripping of topsoil.** The Contractor is responsible for preparing and submitting the Kentucky Division of Water Notice of Intent and attachments and obtaining state permit approval, if applicable, prior to the beginning of any construction activities.

## 1.02 PERMITS AND NOTIFICATION REQUIREMENTS

- A. The Contractor is responsible to submit a Stormwater Pollution Prevention Plan (SWPPP) for inclusion with permit applications. The Contractor may elect one of the following options to meet this requirement:
  1. Utilize the SWPPP (which includes the Erosion and Sediment Control Plan) provided in the Construction Drawings and prepared by the Owner's Engineer as a basis for an updated SWPPP, and take sole responsibility for updating and implementing the SWPPP, or
  2. Provide a SWPPP, including an Erosion and Sediment Control Plan, prepared by a professional engineer licensed in the Commonwealth of Kentucky, meeting all of the requirements of KYR10, Chapter 11 of the LFUCG Stormwater Manual, and Chapter 16-Article X, Division 5 of the LFUCG Code of Ordinances.
- B. If applicable (i.e., for projects with a disturbed area of one acre or more), the Contractor shall submit a KPDES Notice of Intent specifically for Construction Activities (NOI-SWCA) and receive notification of coverage before beginning any site disturbance, and shall implement erosion, sediment, and pollution control measures as may be required by state, local and federal agencies. Contractor shall submit a signed Notice of Intent form and required attachments to the Division of Water at least seven (7) days prior to beginning of construction activity. **See Article 3.24 in this Section for detailed requirements.**
- C. A Land Disturbance Permit shall be obtained from the Lexington-Fayette Urban County Government Division of Engineering. **See Article 3.25 in this Section for detailed requirements.**
- D. The Contractor shall comply with all additional requirements of LFUCG. It is the Contractor's responsibility to provide evidence to the Owner that all permits, including those associated with construction across or along a stream channel, if applicable, have been obtained prior to initiation of construction. Some permits are obtained during the design phase of the project. Typically, they should be included in the contract documents.

## 1.03 RELATED WORK

- A. Section 02371 – Stormwater Pollution Prevention Plan (SWPPP)
- B. Section 02373 – Stream Restoration

## **PART 2 – PRODUCTS**

### **2.01 MULCH**

- A. Mulch or erosion control blankets / turf reinforcement mats (see Section 2.08) shall be used as a soil stabilization measure for any disturbed area inactive (i.e., not undergoing grading or excavation) for 14 days or longer. Areas requiring stabilization during December through February shall receive only mulch held in place with bituminous material. Mulching, blankets, or mats shall be used whenever permanent or temporary seeding is used. The anchoring of mulch, blankets, and mats shall be in accordance with the Construction Drawings except all mulch placed in December through February shall be anchored with bituminous materials regardless of the slope. Permanent mulches or mats shall be used in conjunction with planting trees, shrubs, and other ground covers that do not provide adequate soil stabilization.
- B. Straw shall come from wheat, rye, or barley and may be spread by hand or machine. Straw shall be anchored. Straw shall be applied at two tons per acre or 90 pounds per 1,000 square feet. Straw shall be free from weeds and coarse matter.
- C. Wood chips are appropriate for areas with less than five percent slopes, and do not require tacking. Wood chips shall be applied at 270 cubic yards per acre or 6 cubic yards per 1,000 square feet and approximately 2 inches deep. Wood chips shall be treated with 20 pounds of nitrogen per acre or shall be treated with 12 pounds slow-release nitrogen per ton to prevent nutrient deficiency in plants.
- D. Bark chips or shredded bark are appropriate for areas with less than five percent slopes, and shall be applied at 70 cubic yards per acre or 1.5 to 2 cubic yards per 1,000 square feet and about one-half inch thick. Bark does not require additional nitrogen fertilizer.
- E. Manufacturer's recommendations shall be followed during application of manufactured wood fiber and recycled paper sold as mulch materials applied in a hydroseeder slurry with binders/tackifiers. Recycled paper (newsprint) or wood fiber shall be mixed at 50 pounds per 100 gallons of water and applied according to manufacturer's recommendations and model of hydroseeder in use.
- F. Liquid mulch binders/tackifiers shall be applied according to manufacturer's recommendations. Chemical soil stabilizers or soil binders/tackifiers/emulsions shall not be used alone. Recommended buffer distances between applied products and waterbodies shall be strictly followed.
- G. Gravel or stone aggregate may be used in relatively small areas when incorporated into an overall landscaping plan. Before the gravel or crushed stone is applied, it shall be washed.

### **2.02 TEMPORARY SEED**

- A. Temporary seeding shall be used for soil stabilization when grades are not ready for permanent seeding, except during December through February. The seed shall be applied within 14 days after grading has stopped. Only rye grain or annual rye grass seed shall be used for temporary seeding.

### **2.03 PERMANENT SEED**

- A. Permanent seeding shall be applied within 14 days after final grade has been reached, except during December through February. Permanent seeding shall also be applied on any areas that will not be disturbed again for a year even if final grades have not been reached. The use of mulch and erosion control blanket or turf reinforcement matting with permanent

seeding shall be in accordance with applicable sections of this Specification. "Seed mats" may be used for permanent seeding in accordance with manufacturers' recommendations.

- B. Permanent seeding shall be used on disturbed areas where permanent, long-lived vegetative cover is needed to stabilize the soil and on rough graded areas that will not be brought to final grade for one year or more.
- C. The area to be seeded shall be protected from excess run-on and runoff as necessary with diversions, grassed waterways, terraces, or sediment ponds.
- D. Contractor shall use the following Permanent Seed Mix, with the following exceptions:
  - a. If a property owner landscaping agreement differs from this specification, the property owner landscaping agreement shall be followed on that property, or
  - b. The Construction Drawings identify a different seed mix.

The Permanent Seed Mix shall consist of the following mix spread at a rate of 5 pounds/1,000 square feet:

Common Name	%	lbs per 1,000 sq. ft.
Tall Fescue (turf type)	75	3.75
Annual Rye	15	0.75
Bluegrass	10	0.50
TOTAL	100%	5

- E. Vegetative cover alone shall not be used to provide erosion control cover and prevent soil slippage on a soil that is not stable due to its structure, water movement, or excessive slope.
- F. Permanent seeding may be done at any time except December through February.
- G. Soil material shall be capable of supporting permanent vegetation and have at least 25 percent silt and clay to provide an adequate amount of moisture holding capacity. An excessive amount of sand will not consistently provide sufficient moisture for good growth regardless of other soil factors.
- H. Fertilizer shall be applied at a rate determined by a soil test obtained by the Contractor. Fertilizer shall not be applied within 50 feet of a stream or other waterbody. Lime shall be applied at a rate of 100 pounds per 1,000 square feet or two tons per acre of agricultural ground limestone, unless soil test results indicate differently.

**2.04 SOD**

- A. Sod shall be used for disturbed areas that require immediate vegetative cover, e.g., the area surrounding a drop inlet in a grassed waterway, the design flow perimeter of a grassed waterway that will convey flow before vegetation can be established, and the inlet of a culvert. Sod may be installed throughout the year. "Seed mats" and seed with geotextiles may be used in place of sod when done in accordance with manufacturers' recommendations.
- B. Contractor shall use tall fescue sod, unless another species is specified in the Construction Drawings or unless the property owner landscaping agreement differs from this specification.
- C. Sod shall not be used to provide erosion control and prevent soil slippage on a soil that is not stable due to its structure, water movement, or excessive slope.

- D. Sod shall be installed within 48 hours of digging and removal from the field. Sod should not be used on slopes steeper than 2H:1V. If it is to be mowed, installation should be on slopes no greater than 3H:1V.
- E. Soil material shall be capable of supporting permanent vegetation and shall consist of at least 25 percent silt and clay to provide an adequate amount of moisture holding capacity. An excessive amount of sand will not consistently provide sufficient moisture for the sod regardless of other soil factors.
- F. Fertilizer shall be applied at a rate determined by a soil test obtained by the Contractor. Fertilizer shall not be applied within 50 feet of a stream or other waterbody. Lime shall be applied at a rate of 100 pounds per 1,000 square feet or two tons per acre of agricultural ground limestone, unless soil test results indicate differently.
- G. The sod shall consist of strips of live, vigorously growing grasses. The sod shall be free of noxious and secondary noxious weeds and shall be obtained from good, solid, thick-growing stands. The sod shall be cut and transferred to the job in the largest continuous pieces that will hold together and are practical to handle.
- H. The sod shall be cut with smooth clean edges and square ends to facilitate laying and fitting. The sod shall be cut to a uniform thickness of not less than three-fourth inch measured from the crown of the plants to the bottom of the sod strips for all grasses except bluegrass. Bluegrass sod shall be cut to a uniform thickness of not less than one and one-half inches.
- I. The sod shall be mowed to a height of not less than two inches and no more than four inches prior to cutting.
- J. The sod shall be kept moist and covered during hauling and preparation for placement on the sod bed.
- K. Sod shall be kept watered after installation until the project is considered substantially complete.

## **2.05 ROAD/PARKING STABILIZATION**

- A. Gravel or paved material shall be used to stabilize permanent roads or parking areas or roads or parking areas used repeatedly by construction traffic. Stabilization shall be accomplished within 14 days of grading or initiation of use for construction traffic. Unstabilized roads are not acceptable except in instances where the road will be used less than one month.
- B. Road/parking stabilization shall be used wherever roads or parking areas are constructed, whether permanent or temporary, for use by construction traffic.
- C. Stabilization shall be accomplished with a minimum depth of six inches of crushed stone. Stabilized construction roadbeds shall be at least 14 feet wide for one-way traffic and at least 20 feet wide for two-way traffic.
- D. Temporary roads shall follow the contour of the natural terrain to the extent possible. Slopes shall not exceed 10 percent.
- E. Temporary parking areas shall be located on naturally flat areas to minimize grading. Grades shall be sufficient to provide drainage but shall not exceed 4 percent.
- F. All cuts and fills shall be 2H:1V or flatter.
- G. Drainage ditches shall be provided as needed.

H. Crushed stone shall be KYTC aggregate No. 2 (1.5 to 3 inches in diameter), or equivalent.

## **2.06 CONSTRUCTION ENTRANCE**

- A. A stabilized construction entrance shall be constructed wherever vehicles are leaving a construction site to enter a public road or at any unpaved entrance/exit location where there is a risk of transporting mud or sediment onto paved roads. A construction entrance shall be constructed at the beginning of the project before construction traffic begins to enter and exit the site.
- B. A stabilized construction entrance shall be constructed of crushed stone a minimum of 6 inches thick laid over geotextile (filter fabric).
- C. The width shall be at least 20 feet. At sites where traffic volume is high, the entrance shall be wide enough for two vehicles to pass safely. The length shall be at least 50 feet, and where practical, shall be extended to 100 feet. The entrance shall be flared where it meets the existing road to provide a turning radius.
- D. Stormwater and wash water runoff from a stabilized construction entrance shall drain to a sediment trap or sediment pond. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the gravel, then the tires of the vehicles shall be washed before entering a public road.
- E. Pipe placed under the entrance to handle runoff shall be protected with a mountable berm.
- F. Dust control shall be provided in accordance with the applicable sections of this Specification.
- G. Crushed stone shall be KYTC aggregate No. 2 (1.5 to 3 inches in diameter), or equivalent.
- H. Geotextile filter fabric shall be KYTC Type III.

## **2.07 DUST CONTROL**

- A. Dust control measures shall be implemented on the site.
- B. Construction activities shall be phased to minimize the total area unstabilized at any given time, thereby reducing erosion due to air and water movement.
- C. Construction roads shall be watered as needed to minimize dust.
- D. Existing trees, shrubs, and ground cover shall be retained as long as possible during the construction. Initial land clearing should be conducted only in those areas to be regraded or where construction is to occur. Areas to be cleared only for new vegetation or landscaping shall be stabilized with seed and mulch immediately following clearing.
- E. Vegetative cover is the most effective means of dust and erosion control, when appropriate. See sections on Temporary Seed, Permanent Seed, Mulch, and Sod of this Specification.
- F. When areas have been regraded and brought to final grade, they shall be stabilized using temporary or permanent seed and mulch or other measures.
- G. Mulch with mulch binders may be used as an interim dust control measure in areas where vegetation may not be appropriate.
- H. See sections on Temporary Seed, Permanent Seed, Sod, Mulch, Road/Parking Stabilization, and Construction Entrance of this Specification.

## 2.08 EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS

- A. Mulch netting, erosion control blankets (ECBs), or turf reinforcement matting (TRM) shall be used on sloping areas as indicated in the Construction Drawings. Mats or nets and permanent seeding may be used as an alternate to sod for culvert entrances and grassed waterways when selected and installed in accordance with manufacturer's recommendations. TRMs shall be used at the water line to control toe erosion along stream banks and wave action in wet ponds. Erosion control blankets may be used to stabilize small ditches and swales and on recently planted slopes to protect seedlings until they become established.
- B. Effective ECB and TRM installation shall require firm, continuous contact between the materials and the soil. If there is no contact, the material will not hold the soil and erosion will occur underneath the material.
- C. ECBs or TRMs shall be used in critical areas such as banks along waterways where concentrated flows are expected. Manufacturer's specifications shall be followed.
- D. ECBs, TRMs, and netting shall be suitable for their intended purpose and shall be used as indicated in the Construction Drawings.
- E. The ECB shall have a minimum useful life span of two (2) years. The material shall consist of interlocking, curled wood fibers and be capable of withstanding shear stresses up to 2.25 pounds per square foot and a velocity of nine (9) feet per second. The acceptable ECB shall be Curlex II as manufactured by American Excelsior Company or approved equal.
- F. Product Documentation

The manufacturer shall provide the Engineer or other designated party with the QA/QC certifications for each shipment of ECB/TRM. The certification shall be signed by a responsible party employed by the manufacturer such as the QA/QC Manager, Production Manager, or Technical Services Manager. The QA/QC certifications shall include:

- a. ECB/TRM lot and roll numbers (with corresponding shipping information)
- b. Manufacturer's test data for raw materials used in the production.
- c. Manufacturer's test data for finished production.

### G. Product Labeling

- a. Prior to shipment, the Manufacturer shall affix a label to each roll identifying the following characteristics:
- b. Product identification information (manufacturer name and address, brand name, product code)
- c. Lot number and roll number
- d. Roll length and width
- e. Total roll weight.

### H. Packaging

- 1. The ECB/TRM shall be wound around a cardboard core to facilitate handling. The core is not intended to support the roll for lifting but should be sufficiently strong to prevent collapse during transit.
- 2. All rolls shall be labeled and bagged in packaging that is resistant to photodegradation by ultraviolet light.

- I. The Contractor shall furnish the following to the Engineer:
  1. Manufacturer's quality assurance/quality control certifications for each shipment to verify that the materials supplied for the project are in accordance with the requirements of this specification.
  2. Manufacturer's warranty covering materials and workmanship.

## **2.09 TEMPORARY DIVERSION DITCH**

- A. Temporary diversion ditches shall be used to collect sediment-laden runoff from disturbed areas and direct it to a sediment pond where applicable. Temporary ditches are those expected to be in use for less than one year. Temporary diversion and/or other ditches require stabilization, with seed, blankets, mats, or mulch.
- B. Temporary diversion ditches shall have stable outlets. The combination of conditions of site, slopes, and soils should be so that the ditch can be maintained throughout its planned life.
- C. Temporary diversion ditches shall not be constructed below high sediment-producing areas unless land treatment practices or structural measures, designed to prevent damaging accumulations of sediment in the channels, are installed with or before the diversion.
- D. A typical diversion cross section consists of a channel and a supporting ridge. In the case of an excavated-type diversion, the natural ground serves as the diversion ridge. Diversion cross sections shall be adapted to the equipment that will be used for their construction and maintenance.
- E. The channel may be parabolic or trapezoidal in shape. V-shaped ditches shall not be constructed.
- F. Diversions shall be located so that water will empty onto an established area such as a stable watercourse, waterway, or structure.
- G. Any high sediment-producing area above a diversion shall be controlled by good land use management or by structural measures to prevent excessive sediment accumulation in the diversion channel.
- H. Temporary diversions above steep slopes or across graded rights-of-way shall have a berm with a minimum top width of 2 feet, side slopes of 2:1 or flatter and a minimum height of 18 inches measured from the channel bottom.
- I. Diversions installed to intercept flow on graded rights-of-way shall be spaced 200 to 300 feet apart.
- J. A level lip spreader shall be used at diversion outlets discharging onto areas already stabilized by vegetation.

## **2.10 LEVEL SPREADER**

- A. Level spreaders shall be constructed at the outlets of temporary diversion ditches if they discharge to landscaped areas. Level spreaders shall also be constructed at outlets of permanent constructed waterways where they terminate on undisturbed areas.
- B. The length of the level spreader shall be constructed as shown on the Construction Drawings.

## **2.11 PERMANENT CONSTRUCTED WATERWAY**

- A. Permanent constructed waterways shall be used to divert stormwater runoff from upland undisturbed areas around or away from areas to be disturbed during construction. A waterway expected to be in place for at least one year shall be considered permanent. Permanent waterways shall be lined with sod or permanent seeding and nets, ECBs, or TRMs.

## **2.12 PIPE SLOPE DRAIN**

- A. Pipe slope drains shall be used whenever it is necessary to convey water down a steep slope, which is not stabilized or which is prone to erosion, unless a paved ditch (flume) is installed.
- B. Contractor shall use a 10-inch diameter pipe or larger to convey runoff from areas up to one-third acre; 12-inch or larger pipe for up to half-acre drainage areas; and 18-inch pipe for areas up to one acre, unless otherwise specified in the Construction Drawings. Multiple pipes shall be required for large areas, spaced as shown on the Construction Drawings.
- C. The pipe shall be heavy duty flexible tubing designed for this purpose, e.g., non-perforated, corrugated plastic pipe, or specially designed flexible tubing.
- D. A standard flared end section or a standard T-section fitting secured with a watertight fitting shall be used for the inlet.
- E. Extension collars shall be 12-inch long sections of corrugated pipe. All fittings shall be watertight.

## **2.13 IMPACT STILLING BASIN**

- A. Impact stilling basins or armoring shall be used at the outlet of culverts and storm sewers with calculated exit velocities greater than 15 feet per second when flowing full.

## **2.14 CHECK DAM**

- A. Check dams shall be limited to use in small, open channels that drain 10 acres or less.
- B. Check dams shall not be used in streams.
- C. Check dams can be constructed of stones, coir logs, or wood fiber logs.
- D. If used, check dams shall be constructed prior to the establishment of vegetation.
- E. The maximum height at the center of a check dam shall be three feet above the ground on which the rock is placed.
- F. The center of the portion of the check dam above the flat portion of the channel shall be at least 1 foot lower than the outer edges. The outer edges of the check dam shall extend up the side slopes of the channel to a point 3 feet in elevation above the center portion of the check dam or to the top of the side slopes.
- G. The maximum spacing between rock check dams in a ditch should be such that the toe of the upstream dam is at the same elevation as the top of the next downstream dam.

- H. The spacing of coir and wood fiber check dams is one log every 100 feet for velocities of 5 fps, 50 feet for velocities between 5 and 7.5 fps, and 25 feet for velocities greater than 10 fps, unless otherwise shown in the Construction Documents.
- I. Stone check dams shall be constructed of KYTC Class II channel lining.
- J. Coir log or wood fiber log check dams shall be constructed of a single log with a diameter of at least 20 inches.

## **2.15 SEDIMENT TRAP**

- A. Sediment traps shall be installed below all disturbed areas of less than 5 acres that do not drain to a sediment pond.
- B. Erosion control practices such as seeding, mulching, sodding, diversion dikes, etc., shall be used in conjunction with sediment traps to reduce the amount of sediment flowing into the trap. The amount of sediment entering a trap can be reduced by the use of stabilized diversion dikes and ditches.
- C. The trap shall not be located in a stream. It shall be located to trap sediment-laden runoff before it enters the stream.
- D. Trap depth shall be at least 2 feet at the inlet and 4 feet at the outlet. Effective trap width shall be at least 10 feet and trap length shall be at least 30 feet. Containment berms of earth or rock may be used. High velocity areas (e.g., overflows) shall be armored with rock, TRMs, or other suitable material.
- E. The Construction Drawings shall indicate the final disposition of the sediment trap after the upstream drainage area is stabilized. The Construction Drawings shall indicate methods for the removal of excess water lying over the sediment, stabilization of the pond site, and the disposal of any excess material.

## **2.16 SEDIMENT POND**

- A. A sediment pond shall be installed at the outlet of a disturbed area of 5 acres or more. The maximum drainage area for a single pond is 100 acres.
- B. Design and construction shall comply with all federal, state, and local laws, ordinances, rules, and regulations regarding dams.
- C. Erosion control practices such as seeding, mulching, sodding, diversion dikes, etc., shall be used in conjunction with sediment ponds to reduce the amount of sediment flowing into the pond.
- D. The pond shall not be located in a stream. It shall be located to trap sediment-laden runoff before it enters the stream.
- E. Contractor shall construct the sediment pond as shown on the Construction Drawings.
- F. Permanent ponds designed for stormwater detention or water quality treatment may serve as temporary sediment ponds if site conditions make the use of these structures desirable. At the time of conversion from a sediment pond to a permanent stormwater management pond, excess sediment shall be cleaned from the pond. If the pond is converted to a water quality basin, the sand in the sand filter outlet shall be replaced with clean sand unless it is shown to be clean.

- G. The Construction Drawings shall indicate the final disposition of the sediment pond after the upstream drainage area is stabilized. The Construction Drawings shall indicate methods for the removal of excess water lying over the sediment, stabilization of the pond site, and the disposal of any excess material.
- H. Vegetation shall be established upon completion of construction of the embankment, emergency spillway and other areas disturbed by construction.

**2.17 SILT FENCE**

- A. Silt fence shall be installed down-slope of areas to be disturbed prior to clearing and grading. Silt fence shall be situated such that the total area draining to the fence is not greater than one-fourth acre per 100 feet of fence. Silt fence shall be used for storm drain drop inlet protection and around soil stockpiles.
- B. Under no circumstances shall silt fences be constructed in streams or in swales or ditch lines or any area of concentrated flow.
- C. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, and polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements:

<u>PHYSICAL PROPERTY</u>	<u>REQUIREMENTS</u>
Filtering Efficiency	80% (minimum)
Tensile Strength at 20%	50 pounds/linear inch (minimum)
Flow Rate	0.3 gallons/square foot/minute (minimum)

- D. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life at a temperature range of 0°F to 120°F.
- E. Posts for synthetic fabric silt fences shall be either 2-inch by 2-inch wood or 1.33 pounds per linear foot steel with a minimum length of 5 feet. Steel posts shall have projections for fastening wire to them. Posts shall be no more than 6 feet apart.
- F. Wire fence reinforcement for silt fences shall be a minimum of 36 inches in height, a minimum of 14 gauge and shall have a mesh spacing of no greater than 6 inches.

**2.18 STORM DRAIN INLET PROTECTION**

- A. Storm drain inlet protection shall be utilized on drop inlets and curb inlets that receive sediment-laden runoff from disturbed areas.
- B. Storm drain inlet protection shall only be used around drop inlets when the up-slope area draining to the inlet has no other or inadequate sediment control.
- C. The drainage area shall be no greater than 1 acre.
- D. The inlet protection device shall be constructed in a manner that will facilitate cleanout and disposal of trapped sediment and minimize interference with construction activities.
- E. Inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause flooding or excessive inconvenience or damage to adjacent areas, roadways, properties, or structures.

- F. Inlet protection devices are low flow filter devices, and as such shall be constructed in such a manner as to allow for higher flows to bypass into the storm drain system to prevent flooding of the roadway or downstream properties.

**2.19 FILTER STRIP**

- A. Filter strips shall be used on each side of permanent constructed channels.
- B. Filter strips shall only be used to remove sediment from overland flow. Filter strips are not effective in removing sediment from concentrated flows.
- C. If vegetative filters are proposed as a sediment control device and they do not already exist, they shall be planted and established prior to initiating land disturbing activities.
- D. The minimum filter strip width shall be 50 feet for streams, wetlands, and sinkholes. The minimum filter strip width shall be ten feet for constructed waterways.
- E. Where a post development floodplain or wet weather conveyance is being protected, filter strips shall be provided on each side. When a wetland or sinkhole is being protected, filter strips shall be provided around the perimeter.
- F. Contractor shall construct the filter strips as shown on the Construction Drawings.
- G. Existing grass or grass/legume mixtures used as filter strips shall be dense and well established, with no bare spots. When establishing new seeding, consideration shall be given to wildlife needs and soil conditions on the site. The following chart provides a list of alternative grass and grass/legume mixtures:

**SEEDING MIXTURE AND SITE SUITABILITY CHART**

Seeding Mixture	Rate lbs/acre	Soil Suitability
Alfalfa <i>Or</i> Red Clover <i>Plus</i> Timothy <i>Or</i> Orchardgrass <i>Or</i> Bromegrass	10  10  4  6  6	Well-Drained
Ladino <i>Plus</i> Timothy <i>Or</i> Orchardgrass <i>Or</i> Bromegrass	0.5  4  6  8	Wet or Well-Drained

**Notes:**

1. All seeding shall be in accordance with the seeding sections of this Specification.

2. Well-drained sites include sites that are drained with tile as well as naturally well-drained and droughty sites. Wet sites include sites that are excessively wet only a portion of the growing season.

## **2.20 STREAM CROSSING**

- A. Stream crossings shall be used in cases where construction traffic, permanent traffic, or utilities must cross existing post development floodplains. If the drainage area exceeds 1 square mile and a structure is necessary, the structure shall be designed by a professional engineer licensed in Kentucky, and shall be considered a permanent structure. Stream crossings shall be as close to perpendicular to the stream flow as possible.
- B. Temporary stream crossings are applicable to flowing streams with drainage areas less than one square mile. Temporary stream crossings shall be planned to be in service for the shortest practical period of time and to be removed as soon as their function is completed.
- C. All such structures, whether temporary or permanent, are subject to the rules and regulations of the U.S. Army Corps of Engineers for in-stream modifications (404 Permitting) and the Kentucky Division of Water (401 Certification). No stream crossing shall be installed without first obtaining all applicable local, state, and federal permits.

Where culverts are to be installed, compacted soil or rock shall be used to form the crossing. The depth of soil or rock cover over the culvert shall be equal to one-half the diameter of the culvert or 12 inches, whichever is greater. The sides of the fill shall be protected from erosion using the mulching and seeding erosion control measures specified in this Specification.

- D. All stream crossings shall be constructed in such a manner as to avoid flooding or excessive inconvenience or damage to adjacent areas, roadways, properties, or structures.
- E. When using a culvert crossing, the top of the compacted earth fill shall be covered with at least six inches of KYTC No. 2 stone.
- F. KYTC No. 2 stone shall also be used for the stone pads forming the crossing approaches.

## **2.21 PUMP-AROUND FLOW DIVERSION**

- A. A pump-around flow diversion shall be used to divert flow around construction activities occurring in a stream when those activities are reasonably expected to cause the erosion of sediment or deposition of sediment in the stream.
- B. Check dams to form the diversion shall span the banks of the stream. Maintain 1-foot freeboard (minimum) on the upstream and downstream checks.
- C. Check dams may be constructed of sandbags or may be a water-filled bladder such as an Aqua-Barrier.
- D. The dewatering flow from the work area shall be treated in a sediment-trapping device prior to discharge to the stream.
- E. Sandbags shall be woven polypropylene bags with approximate dimensions of 18-1/2 inches by 28 inches. Contractor shall tie the ends of filled bags closed using either draw strings or wire ties.

## **2.22 CONSTRUCTION DEWATERING**

- A. Sediment-laden water shall be pumped to a dewatering structure before it is discharged.

## **PART 3 – EXECUTION**

### **3.01 GENERAL**

- A. Erosion and sediment control practices shall be consistent with the requirements of Chapter 11 of the LFUCG Stormwater Manual and other state and local regulatory agencies and in any case shall be adequate to minimize erosion of disturbed and/or regraded areas and discharge of sediment from the site.
- B. Contractor is responsible for notifying and obtaining coverage from the Kentucky Division of Water concerning inclusion under the KPDES General Permit for Stormwater Discharges Associated with Construction Activities.
- C. Gravity sewer lines, force mains, and water 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 reentering the stream, or filtered through a sediment removal device. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the line excavation shall not be allowed to enter the flowing portion of the stream. Clean Water Act Section 401 and 402 requirements enforced by the US Army Corps of Engineers and the Kentucky Division of Water and the provisions of this condition shall apply to all types of utility line stream crossings.
- D. 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 shall be employed at all times during the project to prevent degradation of Waters of the Commonwealth. Site regrading and reseeding shall be accomplished with 14 days after disturbance.

### **3.02 MULCH**

- A. Seed shall be applied prior to mulching except where seed is to be applied as part of a hydroseeder slurry containing mulch.
- B. Lime and fertilizer (where needed) shall be incorporated and surface roughening accomplished as needed prior to mulching in accordance with applicable sections of this Specification.
- C. Mulch materials shall be spread uniformly by hand or mechanically so the soil surface is covered. During or immediately following application, the mulch shall be anchored or otherwise secured to the ground according to one of the following methods:
  - 1. Mechanical – Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch material into the soil.
  - 2. Mulch Tackifiers/Nettings/Emulsions – Use according to the manufacturer's recommendations. This is a superior method in areas of water concentration to hold mulch in place.
  - 3. Wood Fiber – Wood fiber hydroseeder slurries may be used to tack straw mulch. This combination treatment is well suited to steep slopes and critical areas, and severe climate conditions.
- D. Mulch shall be anchored using a mulch anchoring tool, a liquid binder/tackifier, or mulch nettings. Nets and mats shall be installed to obtain firm, continuous contact between the material and the soil. Without such contact, the material is useless and erosion occurs.

- E. A mulch anchoring tool is a tractor-drawn implement that is typically used for anchoring straw and is designed to punch mulch approximately two inches into the soil surface. Machinery shall be operated on the contour and shall not be used on slopes steeper than 3H:1V.
- F. When using liquid mulch binders and tackifiers, application shall be heaviest around edges of areas and at crests of ridges and banks to prevent wind blow. Remainder of area shall have binders/tackifiers spread uniformly in accordance with manufacturer's recommendations.
- G. When using a mulch net, it shall be used in conjunction with an organic mulch and shall be installed immediately after the application and spreading of the mulch
- H. Erosion control blankets and turf reinforcement mats are considered protective mulches and may be used alone on erodible soils and during all times of year. Blankets and mats shall be installed in accordance with manufacturer's recommendations.
- I. Mulched areas shall be inspected at least weekly and after each rainfall of one-half inch or more. When mulch material is found to be loosened or removed, the mulch cover shall be replaced within 48 hours.

### **3.03 TEMPORARY SEED**

- A. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and anchoring.
- B. The needed erosion control practices, such as diversions, temporary waterways for diversion outlets, and sediment ponds, shall be installed prior to seeding.
- C. Prior to seeding, lime and fertilizer (if needed) shall be worked into the soil with a disk harrow, springtooth harrow, or similar tools to a depth of two inches. On sloping areas, the final operation shall be on the contour.
- D. The seed shall be applied uniformly with a cyclone seeder, drill, cultipacker, seeder, or hydroseeder (slurry may include seed and fertilizer) preferably on a firm, moist seedbed. Seed shall be sown no deeper than one-fourth inch to one-half inch.
- E. The seedbed shall be firmed following seeding operations with a cultipacker, roller, or light drag.
- F. On sloping land, seeding operations shall be on the contour wherever possible.
- G. Mulch shall be applied, in the amounts described in the mulch section of this Specification, to protect the soil and provide a better environment for plant growth.
- H. New seed shall have adequate water for growth, through either natural means or irrigation, until plants are firmly established.
- I. Seeded areas shall be inspected at least weekly after planting and after each rainfall of one-half inch or more. Areas requiring additional seed and mulch shall be repaired within 48 hours.
- J. If vegetative cover is not established within 21 days, the area shall be reseeded.

### **3.04 PERMANENT SEED**

- A. During site preparation, topsoil shall be stockpiled for use in establishing permanent vegetation.

- B. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and anchoring.
- C. The needed erosion control practices, such as diversions, temporary waterways for diversion outlets, and sediment ponds, shall be installed prior to seeding.
- D. Prior to seeding, lime and fertilizer shall be worked into the soil with a disk harrow, springtooth harrow, or similar tools to a depth of four inches. On sloping areas, the final operation shall be on the contour.
- E. Where compacted soils occur, they shall be broken up sufficiently to create a favorable rooting depth of six to eight inches.
- F. The seed shall be applied uniformly with a cyclone seeder, drill, cultipacker, seeder, or hydroseeder (slurry may include seed and fertilizer) preferably on a firm, moist seedbed. Seed shall be sown no deeper than one-fourth inch to one-half inch.
- G. The seedbed shall be firmed following seeding operations with a cultipacker, roller, or light drag.
- H. On sloping land, seeding operations shall be on the contour wherever possible.
- I. Mulch shall be applied, in the amounts described in the mulch section of this Specification, to protect the soil and provide a better environment for plant growth.
- J. New seed shall have adequate water for growth, through either natural means or irrigation, until plants are firmly established.
- K. Seeded areas shall be inspected at least weekly after planting and after each rainfall of 0.5 inches or more. Areas requiring additional seed and mulch shall be repaired within 48 hours.
- L. If vegetative cover is not established (>70%) within 21 days, the area shall be reseeded. If 40 to 70 percent groundcover is established, overseed and fertilize, using half of rates originally applied, and mulch. If less than 40 percent groundcover is established, follow original seedbed preparation methods, seeding and mulching specifications, and apply lime and fertilizer if needed according to soil tests.

### **3.05 SOD**

- A. The area to be sodded shall be protected from excess runoff, as necessary, with appropriate BMPs.
- B. Prior to sodding, the soil surface shall be cleared of all trash, debris, and stones larger than one inch in diameter, and of all roots, brush, wire, and other objects that would interfere with the placing of the sod.
- C. Compacted soils shall be broken up sufficiently to create a favorable rooting depth of six to eight inches.
- D. Lime and fertilizer (if needed) shall be worked into the soil with a disk harrow, springtooth harrow, or other suitable field equipment to a depth of four inches.
- E. After the lime and fertilizer have been applied and just prior to the laying of the sod, the soil in the area to be sodded shall be loosened to a depth of one inch. The soil shall be thoroughly dampened immediately after the sod is laid if it is not already in a moist condition.

- F. No sod shall be placed when the temperature is below 32°F. No frozen sod shall be placed nor shall any sod be placed on frozen soil.
- G. When sod is placed during the periods of June 15 to September 1 or October 15 to March 1, it shall be covered immediately with a uniform layer of straw mulch approximately one-half inch thick or so the green sod is barely visible through the mulch.
- H. Sod shall be carefully placed and pressed together so it will be continuous without any voids between the pieces. Joints between the ends of strips shall be staggered.
- I. On gutter and channel sodding, the sod should be carefully placed on rows or strips at right angles to the centerline of the channel (*i.e.*, at right angles to the direction of flow). The edge of the sod at the outer edges of all gutters shall be sufficiently deep so that surface water will flow over onto the top of the sod.
- J. On steep graded channels, each strip of sod shall be staked with at least two stakes not more than 18 inches apart.
- K. On slopes 3H:1V or steeper, or where drainage into a sod gutter or channel is one-half acre or larger, the sod shall be rolled or tamped and then chicken wire, jute, or other netting shall be pegged over the sod for protection in the critical areas. The netting and sod shall be staked with at least two stakes not more than 18 inches apart. The netting shall be stapled on the side of each stake within two inches of the top of the stake. The stake should then be driven flush with the top of the sod.
- L. When stakes are required, the stakes shall be wood and shall be approximately ½ inch by ¾ inch by 12 inches. They shall be driven flush with the top of the sod with the flat side against the slope and on an angle toward the slope.
- M. Sod shall be tamped or rolled after placing and then watered. Watering shall consist of a thorough soaking of the sod and of the sod bed to a depth of at least 4 inches. The sod should be maintained in a moist condition by watering for a period of 30 days.
- N. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week to maintain moist soil to a depth of 4 inches. Watering shall be done during the heat of the day to prevent wilting. After the first week, sod shall be watered as necessary to maintain adequate moisture content.
- O. The first mowing of sod shall not be attempted until the sod is firmly rooted. No more than one-third of the grass leaf shall be removed by the initial and subsequent cuttings. Grass height shall be maintained between 2 inches and 3 inches.
- P. Where sod does not establish properly, the sod should be replaced immediately. Areas requiring resodding should be prepared in the same manner as the original installation.

### **3.06 ROAD/PARKING STABILIZATION**

- A. The roadbed or parking surface shall be cleared of all vegetation, roots, and other objectionable material.
- B. All roadside ditches, cuts, fills, and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to the applicable sections of this Specification.
- C. Geotextile filter fabric shall be applied beneath the stone for additional stability in accordance with fabric manufacturer's specifications.

- D. Both temporary and permanent roads and parking areas may require periodic top dressing with new gravel. Seeded areas adjacent to the roads and parking areas shall be checked regularly to ensure that a vigorous stand of vegetation is maintained. Roadside ditches and other drainage structures shall be checked once each week to ensure that they do not have silt or other debris that reduces their effectiveness.

### **3.07 CONSTRUCTION ENTRANCE**

- A. Vegetation, roots, and all other obstructions shall be cleared in preparation for grading. Prior to placing geotextile (filter fabric), the entrance shall be graded and compacted to 80% of standard proctor density.
- B. To reduce maintenance and loss of aggregate, the geotextile shall be placed over the existing ground before placing the stone for the entrance. Stone shall be placed to depth of 6 inches or greater for the entire width and length of the stabilized construction entrance.
- C. If wash racks are used, they shall be installed according to manufacturer's specifications.
- D. The stabilized construction entrance shall be inspected once each week and after there has been a high volume of traffic or a storm event greater than 0.2 inches.
- E. The entrance shall be maintained in a condition that will prevent tracking or flow of sediments onto public rights-of-way. This may require periodic top dressing with additional stone, as conditions demand, and repair and/or cleanout of any structures used to trap sediment.
- F. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains shall be removed immediately.

### **3.08 DUST CONTROL**

- A. See Articles on Temporary Seed, Permanent Seed, Sod, Mulch, Road/Parking Stabilization, and Construction Entrance of this Specification Section.
- B. When construction is active on the site, dust control shall be implemented as needed.
- C. When using tillage as a dust control measure, Contractor shall begin plowing on windward side of area. Chisel-type plows spaced about 12 inches apart, spring-toothed harrow, and similar plows are examples of equipment that may produce the desired effect.
- D. The site shall be observed daily for evidence of windblown dust and reasonable steps shall be taken to reduce dust whenever possible. When construction on a site is inactive for a period, the site shall be inspected at least weekly for evidence of dust emissions or previously windblown sediments. Dust control measures shall be implemented or upgraded if the site inspection shows evidence of wind erosion.

### **3.09 EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS**

- A. Blankets and mats shall be installed according to the manufacturer's recommendations. In the event that the manufacturer's recommendations conflict with any requirement of this Specification, the most conservative requirement, in terms of protection of public health and the environment, shall govern.
- B. Placement
  - 1. The blankets and mats shall be unrolled in the direction of surface water flow.

2. When using two blankets or mats side by side, the seams shall not be placed in the center of a channel but shall be offset by a minimum of one (1) foot.
  3. Blankets and mats shall be stapled in place using U-shaped staples of the size, and at the prescribed intervals and arrangement, specified by the manufacturer.
  4. When blankets or mats are laid side by side, they shall be stapled so as to anchor the edge of each roll.
  5. The overlap of blankets and mats shall be in accordance with the manufacturer's recommendations.
  6. If blanket/mat is unrolled along (parallel) to the contour installation must begin at the lower elevation and progress up slope with the upper blanket overlapping the lower as with roofing shingles.
- C. Damage Repair
1. The patch material used for the repair of a hole or tear shall be the same type of material as the damaged blanket/mat.
  2. The patch shall extend at least 12 inches beyond any portion of the damaged blanket/mat.
  3. The repair patch shall be stapled in place as per manufacturer's recommendations.

### **3.10 TEMPORARY DIVERSION DITCH**

- A. All dead furrows, ditches or other depressions to be crossed shall be filled before construction begins, or as part of construction, and the earth fill used to fill the depressions shall be compacted using the treads of the construction equipment. All old terraces, fencerows, or other obstructions that will interfere with the successful operation of the diversion shall be removed.
- B. The base for the diversion ridge shall be prepared so that a good bond is obtained between the original ground and the fill material. Vegetation shall be removed and the base shall be thoroughly disked prior to placement of fill.
- C. The earth materials used to construct the earth fill portions of the diversions shall be obtained from the diversion channel or other approved source.
- D. The earth fill materials used to construct diversions shall be compacted by running the construction equipment over the fill in such a manner that the entire surface of the fill will be traversed by not less than one tread track of the equipment.
- E. When an excess of earth material results from cutting the channel cross section and grade, it shall be deposited adjacent to the supporting ridge unless otherwise directed.
- F. The completed diversion shall conform to the cross section and grade shown on the Construction Drawings.
- G. Temporary or permanent seeding and mulch (or blanket/mat) shall be applied to the berm or ditch immediately following its construction. Contractor shall triple-seed areas below the flow line, and shall use erosion control blankets or turf reinforcement mats as needed.
- H. Bare and vegetated diversion channels shall be inspected regularly to check for points of scour or bank failure; rubbish or channel obstruction; rodent holes, breaching, or settling of the ridge; and excessive wear from pedestrian or construction traffic.

- I. Damaged channels or ridges shall be repaired at the time damage is detected. Sediment deposits shall be removed from diversion channels and adjoining vegetative filter strips regularly.
- J. Diversions shall be reseeded as needed to establish vegetative cover.

### **3.11 LEVEL SPREADER**

- A. The minimum acceptable width shall be 6 feet. The depth of the level spreader as measured from the lip shall be at least 6 inches and the depth shall be uniform across the entire length of the measure.
- B. The grade of the channel for the last 15 feet entering the level spreader shall be less than or equal to 1%.
- C. The level lip of the spreader shall be constructed on zero percent grade to ensure uniform conversion of channel flow to sheet flow.
- D. Level spreaders shall be constructed on undisturbed soil.
- E. The entrance to the spreader shall be graded in a manner to ensure that runoff enters directly onto the zero percent graded channel.
- F. Storm runoff converted to sheet flow shall discharge onto undisturbed areas stabilized with vegetation.
- G. All disturbed areas shall be stabilized immediately after construction is completed in accordance with the mulching and vegetation requirements of this Specification.
- H. The level spreader shall be inspected after each storm event and at least once each week. Any observed damage shall be repaired immediately.

### **3.12 PERMANENT CONSTRUCTED WATERWAY**

- A. All ditches or other depressions to be crossed shall be filled before construction begins or as part of construction, and the earth fill used to fill the depressions shall be compacted using the treads of the construction equipment. All old terraces, fence rows, or other obstructions that will interfere with the successful operation of the channel shall be removed.
- B. The earth materials used to construct the earth fill portions of the channel shall be obtained from the excavated portion of the channel or other approved source.
- C. The earth fill materials used to construct the channel shall be compacted by running the construction equipment over the fill in such a manner that the entire surface of the fill will be traversed by at least one tread track of the equipment.
- D. The completed channel shall conform to the cross section and grade shown on the Construction Drawings.
- E. Channels shall be inspected regularly to check for points of scour or bank failure; rubbish or channel obstruction; rodent holes; breaching; and excessive wear from pedestrian or construction traffic.
- F. Channels shall be repaired at the time damage is detected. Sediment deposits shall be removed from adjoining vegetative filter strips when they are visible.

- G. Channels shall be seeded and mulched as needed to establish vegetative cover. Blankets or mats may be used instead of mulch, according to manufacturer's specifications.
- H. The subgrade of paved channels shall be constructed to the required elevations. All soft sections and unsuitable material shall be removed and replaced with suitable material. The subgrade shall be thoroughly compacted and shaped to a smooth, uniform surface. The subgrade shall be moist when pouring concrete.
- I. Before permanent stabilization of the slope, the structure shall be inspected after each rainfall. Any damages to the paved channel or slope shall be repaired immediately.

### **3.13 PIPE SLOPE DRAIN**

- A. The pipe slope drain shall be placed on undisturbed or well-compacted soil.
- B. Soil around and under the entrance section shall be hand-tamped in 4-inch to 8-inch lifts to the top of the dike to prevent piping failure around the inlet.
- C. Filter fabric shall be placed under the inlet and extended 5 feet in front of the inlet and be keyed in 6 inches on all sides to prevent erosion.
- D. Backfilling around and under the pipe with stable soil material hand compacted in lifts of 4 inches to 8 inches shall be done to ensure firm contact between the pipe and the soil at all points.
- E. The pipe slope drain shall be secured to the slope using stakes at intervals of 10 feet or less.
- F. All slope drain sections shall be securely fastened together and have watertight fittings.
- G. The pipe shall be extended beyond the toe of the slope and discharged at a non-erosive velocity into a stabilized area or to a sediment trap or pond.
- H. The pipe slope drain shall have a minimum slope of 3 percent or steeper.
- I. The height at the centerline of the earth dike shall range from a minimum of 1.0 foot over the pipe to twice the diameter of the pipe measured from the invert of the pipe. It shall also be at least 6 inches higher than the adjoining ridge on either side. At no point along the dike will the elevation of the top of the dike be less than 6 inches higher than the top of the pipe.
- J. All areas disturbed by installation or removal of the pipe slope drain shall be immediately stabilized.
- K. The pipe slope drain shall be inspected after every rainfall and at least weekly. Any necessary repairs shall be made immediately.
- L. Contractor shall check to see that water is not bypassing the inlet and undercutting the inlet or pipe. If necessary, Contractor shall install headwall or sandbags.
- M. Contractor shall check for erosion at the outlet point and shall check the pipe for breaks or clogs. Contractor shall install additional outlet protection if needed and immediately repair the breaks and clean any clogs.
- N. Contractor shall not allow construction traffic to cross the pipe slope drain and shall not place any material on it.
- O. If a sediment trap has been provided, it shall be cleaned out when the sediment level reaches 1/3 the design volume.

- P. The pipe slope drain shall remain in place until the slope has been completely stabilized or up to 30 days after permanent slope stabilization.

### **3.14 IMPACT STILLING BASIN**

- A. Construction specifications for impact stilling basins are provided in the Construction Drawings.

### **3.15 CHECK DAM**

- A. Stone shall be placed by hand or mechanically as necessary to achieve complete coverage of the ditch and to ensure that the center of the dam is at least 1 foot lower than the outer edges. Stone shall also be placed to extend 3 feet in elevation above the center portion of the check dam or to the top of the channel side slopes.
- B. Coir and wood fiber logs shall be laid on the channel bottom.
- C. Check dams shall be removed when their useful life has been completed. In temporary ditches and swales, check dams shall be removed and the ditch filled in when it is no longer needed. In permanent channels, check dams shall be removed when a permanent lining can be installed. In the case of grass-lined ditches, check dams shall be removed when the grass has matured sufficiently to protect the ditch or swale. The area beneath the check dams shall be seeded and mulched or sodded (depending upon velocity) immediately after check dams are removed.
- D. If stone check dams are used in grass-lined channels that will be mowed, care shall be taken to remove all stone from the channel when the dam is removed. This shall include any stone that has washed downstream.
- E. Regular inspections shall be made to ensure that the check dam is in good working order and the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam shall be corrected immediately, and the dam shall be extended beyond the repaired area.
- F. Check dams shall be checked for sediment accumulation after each rainfall. Sediment shall be removed before or when it reaches one-third of the original height.
- G. Check dams shall remain in place and operational until the drainage area and channel are completely stabilized, or up to 30 days after the permanent site stabilization is achieved.

### **3.16 SEDIMENT TRAP**

- A. The area to be excavated shall be cleared of all trees, stumps, roots, brush boulders, sod, and debris. All channel banks and sharp breaks shall be sloped to no steeper than 1:1. All topsoil containing excessive amounts of organic matter shall be removed.
- B. Seeding and mulching of the sediment trap berm and any material taken from the excavation shall comply with the applicable soil stabilization sections of this Specification.
- C. Construction specifications for sediment traps are provided in the Construction Drawings.
- D. Any material excavated from the trap shall be placed in one of the following ways so that it will not be washed back into the trap by rainfall:
  - 1. uniformly spread to a depth not exceeding 3 feet and graded to a continuous slope away from the trap

2. uniformly placed or shaped reasonably well with side slopes assuming the natural angle of repose for the excavated material behind a berm width not less than 12 feet.
- E. Sediment shall be removed from the trap when the capacity is reduced to one third of the design volume. Contractor shall follow the methods for disposing of sediment removed from the trap as shown in the Construction Drawings.

### **3.17 SEDIMENT POND**

- A. The foundation area shall be cleared of all trees, stumps, roots, brush boulders, sod, and debris. All channel banks and sharp breaks shall be sloped to no steeper than 1:1. All topsoil containing excessive amounts of organic matter shall be removed. The surface of the foundation area shall be thoroughly scarified before placement of the embankment material.
- B. A cutoff trench shall be backfilled with suitable material. The trench shall be kept free of standing water during backfill operations.
- C. The pipe conduit barrel shall be placed on a firm foundation. Selected backfill material shall be placed around the conduit in layers, and each layer shall be compacted to at least the same density as the adjacent embankment. All compaction within 2 feet of the pipe spillway shall be accomplished with hand-operated tamping equipment.
- D. All borrow areas outside the pond and in the drainage area shall be graded and left in such a manner that water will not be ponded.
- E. The material placed in the fill shall be free of all sod, roots, frozen soil, stones more than 6 inches in diameter, and other objectionable material. The placing and spreading of the fill material shall occur in approximately 6-inch horizontal layers or of such thickness that the required compaction can be obtained with the equipment used. Each layer shall be compacted in a way that will result in achieving 95 percent of the maximum standard dry density.
- F. The distribution and gradation of materials throughout the fill shall be such that there will be no lenses, pockets, stakes, or layers of material differing substantially in texture or gradation from the surrounding material. Where it is necessary to use materials of varying texture and gradation, the more impervious material shall be placed in the upstream and center portions of the fill.
- G. The moisture content of fill material shall be such that the required degree of compaction can be obtained with the equipment used.
- H. Fill shall not be placed on frozen, slick, or saturated soil.
- I. The topsoil material saved in the site preparation shall be placed as a top dressing on the surface of the emergency spillways, embankments, and borrow areas. It shall be evenly spread.
- J. A protective cover of herbaceous vegetation shall be established on all exposed surfaces of the embankment, spillway, and borrow areas to the extent practical under prevailing soil and climatic conditions.
- K. Seedbed preparation, seeding, fertilizing, and mulching shall comply with the applicable sections of this Specification.
- L. Any material excavated from the pond shall be placed in one of the following ways so that its weight will not endanger the stability of the side slopes and where it will not be washed back into the pond by rainfall:

1. uniformly spread to a depth not exceeding 3 feet and graded to a continuous slope away from the pond.
  2. uniformly placed or shaped reasonably well with side slopes assuming the natural angle of repose for the excavated material behind a berm width not less than 12 feet.
- M. Sediment shall be removed from the pond when the capacity is reduced to one third of the design volume. Contractor shall follow the methods for disposing of sediment removed from the pond as shown in the Construction Drawings.

### **3.18 SILT FENCE**

- A. This Article provides construction specifications for silt fences using synthetic fabric. See the Construction Drawings for additional detail.
- B. Posts shall be spaced a maximum of 6 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When necessary because of rapid runoff, post spacing shall not exceed 6 feet.
- C. A trench shall be excavated at least 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
- D. Where used, the wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy-duty wire staples at least 1 inch long, tie wires or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
- E. The filter fabric shall be stapled or wired to the fence, and 12 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- F. At joints, filter fabric shall be lapped with terminating posts with a minimum overlap of 3 feet.
- G. The trench shall be backfilled and soil compacted over the filter fabric.
- H. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
- I. Silt fences and filter barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately. Knocked down fences shall be repaired at the end of each day.
- J. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and if the barrier is still necessary, the fabric shall be replaced promptly.
- K. Sediment deposits shall be removed after each storm event or when deposits reach approximately one-third the height of the barrier.
- L. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform to the existing grade, prepared, and seeded.
- M. Silt fences shall be replaced every 6 months.
- N. Silt fence shall terminate in a "J" hook to prevent bypassing at the end of a row.

### 3.19 STORM DRAIN INLET PROTECTION

- A. All storm drains receiving sediment-laden flows from disturbed areas shall be protected. Approved inlet protection methods include net or sand bags filled 2/3 with rock, geotextile filtration products, and Contractor-fabricated structures.
- B. For a silt fence drop inlet protection structure, the following specifications apply:
  - 1. For stakes, Contractor shall use 2 x 4-inch wood (preferred) or equivalent metal with a minimum length of 3 feet.
  - 2. Stakes shall be evenly spaced around the perimeter of the inlet a maximum of 3 feet apart and securely driven into the ground, approximately 18 inches deep.
  - 3. To provide needed stability to the installation, Contractor shall frame with 2 x 4-inch wood strips around the crest of the overflow area at a maximum of 1.5 feet above the drop inlet crest and shall brace diagonally.
  - 4. Contractor shall place the bottom 12 inches of the fabric in a trench and backfill the trench with at least 4 inches of crushed stone or 12 inches of compacted soil.
  - 5. Contractor shall fasten fabric securely to the stakes and frame. Joints shall be overlapped to the next stake.
- C. For sod drop inlet protection, sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Soil preparation and sod placement shall be in accordance with the section entitled Sod.
- D. For gravel curb inlet protection, the following specifications apply:
  - 1. Wire mesh with ½-inch openings shall be placed over the curb inlet opening so that at least 12 inches of wire extends across the concrete gutter from the inlet opening.
  - 2. KYTC No. 2 Coarse Aggregate shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely.
  - 3. This type of device shall never be used where overflow may endanger an exposed fill slope. Consideration shall also be given to the possible effects of ponding on traffic movement, nearby structures, working areas, and adjacent property.
- E. For block and gravel curb inlet protection, the following specifications apply:
  - 1. Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening to act as spacer blocks.
  - 2. A 2-inch by 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.
  - 3. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks.
  - 4. Wire mesh shall be placed over the outside of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire with ½-inch openings shall be used.
  - 5. KYTC No. 2 Coarse Aggregate shall be piled against the wire to the top of the barrier.

- F. For stone-filled corrugated pipe curb inlet protection, the following specifications apply:
  - 1. Two concrete "L" blocks shall be placed on their sides, with one leg fitting into the mouth of the curb opening.
  - 2. A 6-inch corrugated pipe shall be filled with stone and covered with a filter sock.
  - 3. The stone-filled pipe will be placed in front of the two concrete "L" blocks, and extend a minimum of the width of the curb inlet opening on either side. The total length of the stone filled pipe shall be three times the width of the curb inlet opening.
- G. The inlet protection structure shall be inspected after each rain, and repairs made as needed.
- H. Sediment shall be removed and the device restored to its original dimensions when sediment has accumulated to one-third the design depth of the filter. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- I. If a stone filter becomes clogged with sediment so that it no longer adequately performs its function, the stone shall be pulled away from the blocks, cleaned, and replaced.
- J. Structures shall be removed after the area draining to the inlet protection structure has been properly stabilized.

### **3.20 FILTER STRIP**

- A. When planting filter strips, Contractor shall prepare seedbed, incorporate fertilizer based on a soil test, and apply mulch consistent with the seeding sections of this Specification. Fertilizer shall not be applied within 50 feet of a stream or other waterbody. Filter strips using areas of existing vegetation shall be over seeded, as necessary, with the specified mixtures to obtain an equivalent density of vegetation. The over seeding shall be accomplished prior to any land disturbing activities.
- B. Filter strips shall be inspected regularly to ensure that a healthy vegetative growth is maintained. Any bare spots or spots where sediment deposition could lead to the destruction of vegetation shall be repaired.
- C. Filter strips shall be fertilized once each year in the fall.
- D. Irrigation shall be used as necessary to maintain the growth of the vegetation in the filter strip.
- E. Sediment shall be removed when it becomes visible in the filter.
- F. Construction traffic shall not be driven on or over filter strips.

### **3.21 STREAM CROSSING**

- A. Clearing and excavation of the streambed and banks shall be kept to a minimum.
- B. The structure shall be removed as soon as it is no longer necessary for project construction.
- C. Upon removal of the structure, the stream shall immediately be reshaped to its original cross section and properly stabilized.
- D. The approaches to the structure shall consist of stone pads with a minimum thickness of 6 inches, a minimum width equal to the width of the structure, and a minimum approach length of 25 feet on each side.

- E. The structure shall be inspected after every rainfall and at least once a week and all damages repaired immediately.

### **3.22 PUMP-AROUND FLOW DIVERSION**

- A. Operations shall be scheduled such that diversion installation, in-stream excavation, in-stream construction, stream restoration, and diversion removal are completed during low-flow conditions and as quickly as possible. Contractor shall not construct in a stream when rainfall is expected during the time excavation will be occurring in the stream.
- B. Check dams shall be installed across the stream during low flow conditions.
- C. Stream flow shall be pumped around the check dams. Outlet protection shall be installed as required at the discharge point.
- D. Contractor shall dewater the work area and pump into a sediment trapping device.
- E. Contractor shall complete construction activities across the stream.
- F. Contractor shall restore the streambed and banks.
- G. Contractor shall remove sandbags and shut down pumping operation. (Salvage sandbags for future use if multiple stream crossings are required on the project.) Contractor shall remove all sandbags from the stream, including damaged and empty bags.
- H. Pumps shall be manned around-the-clock when the pump-around diversion is in the stream.
- I. This control provides short-term diversion of stream flow (typically 1 day to 3 days). Additional sandbags or pumps may be required to maintain 1-foot freeboard on the sandbag checks if flow conditions change.
- J. Contractor shall add sandbags as required to seal leaks in check dams.

### **3.23 CONSTRUCTION DEWATERING**

- A. All dewatering discharges shall pass through a sediment removal device. Contractor shall follow the specifications for sediment traps and basins. The manufacturer's recommendations shall be followed for commercial products.
- B. The dewatering structure shall be inspected frequently to ensure it is functioning properly and not overtopping. Accumulated sediment shall be spread out on site and stabilized or disposed of offsite.

### **3.24 KPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES**

- A. The Contractor is responsible for electronically filing the appropriate state Notice of Intent (NOI-SWCA) letter at least seven (7) days prior to start of construction activity. The Notice of Intent (NOI) is a Kentucky Pollution Discharge Elimination System (KPDES) permit application as provided by the Kentucky Revised Statutes, Chapter 224. This application is required to be submitted for construction projects that disturb one or more acres of land.
- B. The NOI requires the inclusion of the descriptions of (but is not limited to) the following items:
  - 1. Names and designated uses of any receiving waters

2. Anticipated number and locations of discharge points
  3. Identification of planned construction in or along a waterbody
- C. A topographic map showing project boundaries, areas to be disturbed, locations of anticipated discharge points and receiving waters is also required to be submitted with the NOI.
- D. If the construction site is near a designated "High Quality/Impaired Waters" or a "Cold Water Aquatic Habitat Waters, Exceptional Waters, Outstanding National/State Resource Waters," additional items and/or individual permits will be required.
- E. The NOI form requires an SIC code. The link to the SIC codes is <http://www.osha.gov/pls/imis/sicsearch.html>. The following are the typical construction SIC codes utilized:
- 1542 – Building Construction, nonresidential, except industrial and warehouses
  - 1623 – Water Main Construction, Sewer Construction
  - 1629 – Water and Wastewater Treatment Plant Construction
  - 1711 – Water Pump Installation
  - 1781 – Drilling Water Wells
- F. The Contractor is responsible for implementing the approved Stormwater Pollution Prevention Plan (SWPPP) prior to commencement of site disturbance. The SWPPP shall include erosion prevention measures and sediment and pollutant control measures which are installed and maintained to minimize discharges of sediments and other pollutants from a 2-year, 24-hour storm event. The SWPPP shall be kept at the site and available for review by LFUCG and state officials.
- G. The Contractor is responsible for the description of procedures to maintain erosion and sediment control measures during the period of construction.
- H. The Contractor is responsible for identifying each Contractor and Subcontractor who will install each SWPPP erosion and sediment control measure.
- I. Each Contractor and Subcontractor shall sign a statement certifying the awareness of the requirements of the SWPPP-related documents. Certification is attached at the end of this section.
- J. The Contractor shall not start land disturbing activities until written permit coverage is obtained from the Kentucky Division of Water.
- K. The inspection by qualified personnel, provided by the Contractor, of the site as follows:
1. at least once every seven (7) calendar days, and
  2. within 24 hours after any storm event of 0.5 inch or greater
- L. The Contractor is responsible for completing and maintaining the required Self-Inspection Forms. A sample is included in this specification Section.
- M. Amendments to the approved SWPPP shall be made and implemented as necessary through the course of the construction project if inspections or investigations by the Contractor's inspector, site staff, or by local, state, or federal officials determine that the existing sediment control measures, erosion control measures, or other site management practices are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site. All plan amendments shall be noted on the copy of the SWPPP maintained at the project site. Plan amendments that involve engineering design shall be prepared by an engineer licensed in Kentucky.

- N. The Contractor shall submit the Notice of Termination (NOT) form to the Kentucky Division of Water, the LFUCG Division of Water Quality, and the LFUCG Division of Engineering when final stabilization has been achieved on all portions of the site and the erosion/sediment controls have been removed.
- O. All subcontractors shall be required to comply with the requirements of the state permit and the Stormwater Pollution Prevention Plan (SWPPP).
- P. Where to submit:
1. Complete KPDES FORM NOI-SW at the following website:  
<https://dep.gateway.ky.gov/eForms/default.aspx?FormID=7>
  2. Do not initiate work until receiving approval from the Kentucky Division of Water.
  3. A complete copy of the NOI submittal shall also be provided to the following for approval/coverage verification:

Division of Water Quality  
125 Lisle Industrial Avenue, Suite 180  
Lexington, KY 40511

Division of Engineering  
Lexington-Fayette Urban County Government  
101 E. Vine St.  
4<sup>th</sup> Floor  
Lexington, KY 40507

### **3.25 LFUCG Land Disturbance Permit**

- A. The Contractor shall obtain a Land Disturbance Permit from the LFUCG Division of Engineering, after the LFUCG Division of Water Quality inspects the installation of the best management practices as required by the Stormwater Pollution Prevention Plan (SWPPP). The site grading plan shall show the original and finish grade contours. The grading plan shall be in conformance with the SWPPP and shall clearly show the initial phase of best management practices to be installed.
- B. The Land Disturbance Permit checklist appears on the following page. It can be obtained from:
- Division of Engineering  
Lexington-Fayette Urban County Government  
101 E. Vine St.  
4<sup>th</sup> Floor  
Lexington, KY 40507  
(859) 258-3410  
Attn: Land Disturbance Permit Section  
<https://www.lexingtonky.gov/new-development>
- C. All excess earthen/rock materials hauled off the site to a location in Fayette County shall be hauled to a site permitted by the Kentucky Division of Water and the LFUCG. The haul site shall be permitted in accordance with these specifications.

**LFUCG Land Disturbance Permit Application & Erosion and Sediment Control Plan Checklist**

v23Feb2018

Permittee (Owner or Contractor):	Date:
Contact Person:	Contact Phone:
Site Address:	Zone:
Contractor Name: <span style="float:right">Reg #:</span>	Contractor Phone:
Mailing Address:	Email:

Permitting Information and ESC Plan Narrative	Yes	No	N/A	Page#	Notes
KY DOW Construction NOI / KYR10 Permit					Required for disturbance ≥ 1 acre
US ACE Section 404 Permit					Required for stream crossings, wetland fills
KY DOW Stream Construction Permit / WQ Certif.					Required for stream crossings / encroachment
FEMA LOMR or CLOMR					If applicable
Project description and purpose					Brief summary
Land cover, soils, percent impervious area					Pre and post construction
Land cover / land use of adjacent property					Can designate on plan sheets
Work schedule with start/end dates					Sequencing, clearing, grading, revegetation
Phasing plan for large projects					25 acre limit on total disturbed area
BMP installation schedule					Can be included on plan sheets (see below)
Inspection and BMP maintenance schedule					Every 7 days, or every 14 days and after ½" rain
Material storage, waste & litter pollution prevention					Covered, away from drainage system, etc.
Fueling / vehicle maintenance pollution prevention					Conducted away from drainage system, etc.
Spill prevention, control, and countermeasures					If reportable quantities present at the site
Dust control plan					Consider if neighbors are present
Stabilized site exit inspection plan					For keeping offsite pavement clear of soil/debris
Stabilization plan and schedule for site areas					Seed/mulch/etc. within 14 days of inactivity
<b>ESC Plan Site Map and Drawing Detail</b> (See LFUCG Stormwater Manual for BMP Design and Installation Information)					
Plans stamped by a licensed professional					Required for engineered plan components
Location of the project; property lines					Include small locational map; street address
Limits of construction, disturbed area location/size					Flag off "no disturbance" areas
Topography and drainage patterns (pre and post)					1" = 50 ft; 2 ft contours
Buildings, utilities, paved areas, ditches, culverts					Show stormwater inlets within 100 ft of site
Retention ponds, detention basins, sediment traps					Stabilize immediately after construction
Access and haul roads					Consider dust control where neighbors present
Stabilized exit (50 ft #2 rock pad, shaker rack, etc.)					Must drain to a sediment control BMP
Silt fence or etc. at downslope perimeters					Super silt fence along critical areas
Diversion ditches/berms above disturbed areas					Stabilize immediately after construction
Protection for post-construction BMPs					Keep sediment out of post-construction BMPs
Slope stabilization (seed with mulch/blanket/mat)					See Figure 11-1 in Stormwater Manual
Inlet protection measures					Specify type(s) and location(s)
Outlet erosion protection measures					Specify type(s) and location(s)
Ditch stabilization (sod, or seed with blanket/mat)					Stabilize immediately after construction
Sediment basins (> 5 ac) and traps (< 5 ac)					Stabilize immediately after construction
Dewatering sites and methods					Must use sediment controls
50 ft natural vegetated buffer for all critical areas					Applies to streams, wetlands, sinkholes
Stream crossings					Crossing type, detail; USACE 404 permit req'd
Stockpile areas, equipment storage/fueling areas					Keep away from drainage system if possible
Waste and concrete wash water storage/disposal					Show initial area; can be moved as needed
<b>LFUCG Use Only: Review Date:</b> _____ <b>Status – In Compliance:</b> Yes No <b>Additional Info Needed:</b> Yes No					
<b>Reviewed By:</b> _____ <b>Department:</b> DOE DWQ DES					
<b>Comments / Missing Items:</b>					

## Kentucky Best Management Practices Plan • Construction Site Inspection Report

<b>Company:</b>	<b>Site:</b>	<b>County:</b>
<b>Site Operator:</b>		<b>Date:</b>
<b>Receiving Water:</b>	<b>Total Site Area (acres):</b>	<b># Disturbed Acres:</b>
<b>Inspector Name:</b>	<b>Inspector Qualifications:</b>	
<b>Inspection Type:</b> Weekly or ½ Inch Rain	<b>Days Since Last Rainfall</b> _____	<b># Inches of Last Rainfall:</b> _____

### Field Inspection Observations

BMP Category	Compliance			Field Indicators for Compliance
	Yes	No	N/A	
Project Operations				Notice of Intent (KPDES permit) and other local/state permits on file BMP Plan on site and available for review Project timing/schedule and activities following BMP Plan Weekly inspection and rain-event reports on BMPs available for review Diversions, silt checks/traps/basins, and silt fences/barriers installed prior to clearing Grading and clearing conducted in phases to minimize exposed soil areas No vegetation removal or operations in stream or sinkhole buffer area (25-50 ft min) Rock pad in place on all construction site exits leading to paved roads No sediment, mud, or rock on paved public roads in project area Dust control if needed when working in residential areas during dry conditions
Drainage Management				Upland runoff diverted around bare soil areas with vegetated/lined ditches/berms Drainage channels exiting the site are lined with grass/blanket/rock and stabilized Discharges from dewatering operations cleaned in silt fence enclosure or other filter No muddy runoff leaving site after rains up to 1½ inches
Erosion Protection				Exposed soil seeded/mulched after 2 weeks if no work is planned for the next 7 days Soils on steep slopes seeded/mulched/blanketed as needed to prevent rutting
Sediment Barriers				Silt fence, rock filter, or other sediment barrier below all bare soil areas on slopes Barrier installed across slope on the contour, trenched in, posts on downhill side Multiple sediment barriers at least 125 ft apart on unseeded slopes steeper than 4:1 J-hook interceptors along silt fence where heavy muddy flows run along fencing No visible undercutting or bypassing or blowout of sediment barrier Accumulated sediment is less than halfway to the top of sediment barrier
Slope Protection				Slopes tracked, disked, or conditioned after final grade is established Slopes seeded, mulched, or blanketed within 21 days, no unmanaged rills or gullying Heavy downslope flows controlled by lined downdrain channels or slope drain pipes No muddy runoff from slopes into streams, rivers, lakes, or wetlands
Inlet Protection				Inlet dam/device or filtration unit placed at all inlets receiving muddy flows No visible undercutting, bypassing, or blowout of inlet protection dam or device Accumulated sediment is less than halfway to the top of the inlet protection dam/device
Outlet Protection				High flow discharges have rock or other flow dissipaters of adequate sizing at outlet Culvert outlets show no visible signs of erosion/scour, bank failure, or collapse
Ditch and Channel Stabilization				No unmanaged channel bank erosion or bottom scouring visible within or below site Ditches with slopes more than 3% have check dams spaced as needed, if not grassed Ditch check dams tied in to banks, with center 4" lower than sides, and no bypassing Ditches with slopes of up to 5% are thickly seeded with grass (minimum requirement) Ditches 5% to 15% are lined with thick grass and erosion control blankets as needed Ditches 15% to 33% are lined with thick grass and matting or other approved product Ditches exceeding 33% are paved or lined with rock or other approved product



**Contractor and Subcontractor Certifications**

***SWPPP Files, Updates, and Amendments***

This SWPPP Plan and related documents (e.g., NOI, inspection reports, US ACE permits, etc.) will be kept on file at the construction site by \_\_\_\_\_ (name and title). The SWPPP will be updated by the Owner and/or Site Manager to reflect any and all significant changes in site conditions, selection of BMPs, the presence of any unlisted potential pollutants on site, or changes in the Site Manager, contractor, subcontractors, or other key information. Updates and amendments will be made in writing within 7 days and will be appended to the original BMP Plan and available for review.

***Stormwater Pollution Prevention Plan 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 gathered and evaluated 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.

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

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

I certify under penalty of law that I understand the terms and conditions of the general KPDES permit that authorizes the storm water discharges associated with the construction site activity identified as part of this certification.

***Subcontractor Certification***

The subcontractors below certify under penalty of law that they understand the terms and conditions of the general KPDES permit that authorizes the storm water discharges associated with the construction site activity identified as part of this certification.

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

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

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

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

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

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

END OF SECTION

**Section 02371  
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)**

**PART 1 - GENERAL**

- A. The Contract Documents include a SWPPP that has been approved by LFUCG Division of Water Quality. This SWPPP shall be used for establishing quantities and a lump sum price for providing the Erosion and Sediment Control Measures.
- B. The Contractor may use this SWPPP to obtain the required permits, i.e., Land Disturbance Permit. If Contractor chooses to use this SWPPP, the Contractor takes sole responsibility for the content of the SWPPP and the implementation of the SWPPP during construction.
- C. Contractor may also choose to prepare its own SWPPP and submit to LFUCG Division of Water Quality for approval. No additional payment will be allowed for the Erosion and Sediment Control and conformance with SWPPP pay item.

**STORMWATER POLLUTION  
PREVENTION PLAN**

**For**

**CONSTRUCTION ACTIVITIES**

**For**

**HARTLAND 2 PUMP STATION UPGRADES**

**Prepared for:**

**LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT  
DIVISION OF WATER QUALITY  
125 LISLE INDUSTRIAL AVENUE  
SUITE 180  
LEXINGTON, KY 405011**

**Prepared by:**

**BELL Engineering  
2480 Fortune Drive  
Suite 350  
Lexington, KY 40509  
Phone: 859-278-5412  
Fax: 859-278-2911**

**April 2021**

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### **D. Signed Commonwealth of Kentucky KPDES Notice of Intent (NOI) and Correspondence with USACE Regarding 404 Permit**

### **E. Confirmation of NOI Delivery**

### **F. Copy of Letter (or other documentation) from the NOI Processing Center Authorizing Permit Coverage**

**PROJECT NAME AND LOCATION**

Hartland 2 Pump Station Upgrades  
2136 Leafland Place  
Lexington, Kentucky 40515

A general location map (i.e., USGS quadrangle map) with enough detail to identify the location of the construction site, direction of storm water flow, the receiving waters of the site, location of off-site material, waste, borrow, and equipment storage areas, surface waters and wetlands, storm water discharge locations and other areas as required by the Commonwealth of Kentucky is included in the Design Drawings.

**OPERATOR'S NAME AND ADDRESS**

Lexington-Fayette Urban County Government  
Division of Water Quality  
125 Lisle Industrial  
Suite 180  
Lexington, Kentucky 40511  
(859) 425-2400

**ENGINEER'S NAME AND ADDRESS**

Bell Engineering  
David S. Schrader, PE  
2480 Fortune Drive, Suite 350  
Lexington, Kentucky 40509  
(859) 278-5412  
[dschrader@hkbell.com](mailto:dschrader@hkbell.com)

**CONTRACTOR'S NAME AND ADDRESS**

Name: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

**PROJECT START AND END DATES**

Start: \_\_\_\_\_  
End: \_\_\_\_\_

**ADDITIONAL INFORMATION**

The Contractor may use this SWPPP to obtain the required permits, i.e. Land Disturbance Permit. If Contractor chooses to use this SWPPP, the Contractor takes sole responsibility for the content of the SWPPP and the implementation of the SWPPP during construction.

Contractor may also choose to prepare its own SWPPP and submit to LFUCG for approval. No additional payment will be allowed for the Erosion and Sediment Control and conformance with SWPPP pay item.

## PROJECT DESCRIPTION

This project will consist of construction activities relating to the upgrade of the existing Hartland 2 pump station. Existing pavement will not be removed and replaced with new pavement.

## SITE AREA AND DISTURBED ACREAGE

The project area consists of approximately 8,200 square feet (0.20 acres).

## SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows (*refer to the Erosion Control Details on the Erosion Prevention and Sediment Control Plan sheet for details*):

### Erosion Control /Construction Phasing

- A. Attend a pre-construction meeting with Owner and Engineer prior to any street disturbance. Contractor shall sign Form A within the SWPPP prior to any street disturbance.
- B. Place stream protection (as needed) and silt fencing at designated areas shown on the Construction Drawings and where deemed necessary by the resident project representative prior to construction commencing.
- C. Remove full depth pavement in designated area. Spoil material to be loaded into trucks and removed from site.
- D. Begin removal of existing structures and pipe. After, begin trench excavation for pipe installation and structure installation. As the trench is excavated, spoil materials to be loaded into trucks and removed from site.
- E. Once pipe and structures are installed, trench shall be backfilled completely with stone and capped per LFUCG Standard Drawings.
- F. File Notice of Termination for KPDES KYR10 with the Kentucky Division of Water once stabilization is complete.

## NAME OF RECEIVING WATERS

The no name tributary to the east of the project dumps into East Hickman Creek. The areas to be disturbed enter the tributary via sheet flow.

## POTENTIAL SOURCES OF POLLUTANTS

Potential sources of pollutants include sediment from structure and pipe installation, oil/fuel/grease from equipment, and trash/debris. This project will include bypass pumping of sanitary sewer, lending to the potential of contamination.

## **EROSION AND SEDIMENT CONTROLS**

**All Erosion and Sediment Control details shall be referenced from Section 02370 – Erosion and Sediment Control of the Technical Specifications and includes the SWPPP technical requirements and specifications.**

### Stabilization Practices (Permanent)

- A. Land clearing activities shall be done only in areas where removal, demolition, replacement, or installation will be performed and shall be staged to occur as the as the project progresses.
- B. Restoration of all areas to the prior conditions.
- C. Permanent seeding and mulching of exposed areas as specified on the Construction Drawings.
- D. Vegetation preservation outside the permanent easement.

### Stabilization Practices (Temporary)

None

### Structural Practices (Permanent)

No permanent structural practices will be installed for this project.

### Structural Practices (Temporary)

Structural practices for this site include:

Silt Fence

## **SITE RUNOFF MANAGEMENT**

Sediment will be prevented from leaving the site to the maximum extent practicable. Storm water will be treated using the above-described best management practices. Inlet protection shall be installed in accordance with the Construction Drawings. No detention shall be provided due to the nature of the construction.

## **OTHER CONTROLS**

### Off-Site Vehicle Tracking

The streets adjacent to the project corridor will be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from trenching and sediment removal activities. Dump trucks hauling material from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

### Excavation Spoil Materials

Excavation spoil materials are generated during the excavation of the trench. Sediment removal material will be relocated to the designated stockpile area to be graded and permanently reseeded. Any material deemed unsuitable shall be loaded into dump trucks and removed from the site. A copy of the receiving site's permit must be included in this SWPPP for spoil materials transported off site.

## **COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS**

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the KPDES Construction General Permit, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance. The selected contractor will be required to submit the Notice of Intent (NOI) to the Kentucky Division of Water (KDOW) prior to construction. The Contractor shall meet all conditions required by the MS4 Operator.

## **INSPECTION AND MAINTENANCE PROCEDURES**

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected at least every seven (7) calendar days and within 24 hours following a rainfall event of 0.5 inches or greater as specified in this document.
2. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.
3. Built up sediment will be removed from the inlet protection when it reaches one-third the height of the protection. Inspections will be made of the inlet protection measures to ensure that they are in good working order.
4. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.
5. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance, and repair activities, and filling out inspection reports.
6. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept onsite with the SWPPP.
7. Disturbed areas will be inspected for evidence of or potential for pollutants entering stormwater systems.
8. Report to Kentucky Department of Environmental Protection within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24-hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the EPA in the permit to be reported within 24 hours. The written submission must contain a description of the noncompliance and its cause; the period of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

9. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117, or 40 CFR 302) must be reported. Form G-1 provides further details on the notification and reporting process.

## **INSPECTION AND MAINTENANCE REPORT FORMS**

Once installation of any required or optional erosion control device or measure has been implemented, at least once every seven (7) calendar days or within 24 hours following a rainfall event of 0.5 inches or greater as specified in KYR10. Inspections for this project shall occur at least once every seven (7) calendar days. If the specified schedule for inspections is changed, a modification report shall be filed. The Modification Reports can be found in this SWPPP. Inspections of each measure shall be performed by a Qualified Inspector. Inspectors shall have training in stormwater construction management such as KEPSC, CEPSC, CPSWQ, TNEPSC, CESSWI, or other similar training. Inspectors to inventory and report the condition of each measure and ensure sediment control measures are in good working order, shall use the forms found in this SWPPP.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the stabilization of the site.

## **CONTROL OF NON-STORM WATER DISCHARGES**

Certain types of discharges are allowable under the Kentucky Department of Environmental Protection General Permit for construction Activity, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The contractor shall ensure that all non-storm water discharge is filtered and/or that sediment and silt from the construction is removed before water enters the receiving water body. The control measures that have been outlined previously in this SWPPP will be strictly enforced to ensure that no contamination of these non-storm water discharges takes place. The following non-storm water discharges are allowed by the Kentucky Department of Environmental Protection and may occur at the job site:

- Waters used for vehicle washing where detergents are not used
- Water used for dust control
- Potable water including uncontaminated waterline flushing
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used
- Landscape irrigation
- Clean, non-turbid water-well discharges of groundwater
- Construction dewatering provided the requirements of the KPDES permit are met

## **MATERIALS MANAGEMENT PLAN**

### **MATERIALS COVERED**

The following materials or substances are expected to be present onsite during construction:

Concrete/Additives/Wastes  
Construction wastes

## Petroleum based products

### MATERIAL MANAGEMENT PRACTICES

The following are in the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

#### A. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

1. An effort will be made to store only enough products required to do the job
2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
3. Products will be kept in their original containers with the original manufacturer's label in legible condition.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

#### B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.
2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.
3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

#### C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. The job site superintendent, who will also be responsible for seeing that these practices are followed, will instruct site personnel in these practices.

#### D. Product Specific Practices

The following product specific practices will be followed on the job site.

## 1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. **Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank.** Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tank(s) and/or equipment storage areas must be identified on the Construction Drawings, Sheets SA-1 through SA-15, by the contractor once the location(s) has been determined.

## 2. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

## E. Sanitary Wastes

All sanitary waste will be collected from the portable units a minimum of three times per week by a licensed portable facility provider in complete compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges.

## F. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) that may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the materials Management Plan and in accordance with applicable state and federal regulations.

## Spill Prevention and Response Procedures

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.

2. The minimum practical quantity of all such materials will be kept on the job site.
  3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.
  4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.
- B. In the event of a spill, the following procedures should be followed:
1. All spills will be cleaned up immediately after discovery.
  2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.
  3. The project manager and the Engineer of Record will be notified immediately.

Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-800-424-8802 and the Kentucky Environmental Response team at 1-800-928-2380.

4. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

SIGNED NOI TO BE PLACED HERE ONCE  
COMPLETED BY THE CONTRACTOR

NOI DELIVERY CONFIRMATION TO BE PLACED HERE  
ONCE COMPLETED BY THE CONTRACTOR

NOI PERMIT COVERAGE AUTHORIZATION  
TO BE PLACED HERE ONCE  
RECEIVED BY THE CONTRACTOR



## Construction Site Inspection Report

<b>Company:</b>	<b>Site:</b>	<b>County:</b>
<b>Site Operator:</b>		<b>Inspection Date:</b>
<b>Receiving Water:</b>	<b>Total Site Area (acres):</b>	<b># Disturbed Acres:</b>
<b>Inspector Name:</b>	<b>Inspector Qualifications:</b>	
<b>Inspection Type:</b> Weekly or ½ Inch Rain	<b>Days Since Last Rainfall</b> ____	<b># Inches of Last Rainfall:</b> ____

### Field Inspection Observations

BMP Category	Compliance			Field Indicators for Compliance
	Poor	Fair	Good	
Project Operations				Notice of Intent (KPDES permit) and other local/state permits on file ESC/SWPPP on site and available for review; project activities compliant with plan Weekly inspection and rain-event reports on BMPs available for review Diversions, silt checks/traps/basins, and silt fences/barriers installed prior to clearing Grading and clearing conducted in phases to minimize exposed soil areas No vegetation removal or operations in stream or sinkhole buffer area (25 ft min) Rock pad with underliner in place on all construction site exits leading to paved roads No sediment, mud, or rock on paved public roads in project area Dust control if needed when working in residential areas during dry conditions
Drainage Management				Upland runoff diverted around bare soil areas with vegetated/lined ditches/berms Drainage channels exiting the site are lined with grass/blanket/rock and stabilized Discharges from dewatering operations cleaned in silt fence enclosure or other filter No muddy runoff leaving site after rains up to 1½ inches
Erosion Protection				Exposed soil seeded/mulched after 2 weeks if no work is planned for the next 7 days Soils on steep slopes seeded/mulched/blanketed as needed to prevent rutting
Sediment Barriers				Silt fence, rock filter, or other sediment barrier below all bare soil areas on slopes Barrier installed across slope on the contour, trenched in, posts on downhill side Multiple sediment barriers at least 125 ft apart on unseeded slopes steeper than 4:1 J-hook interceptors along silt fence where heavy muddy flows run along fencing No visible undercutting or bypassing or blowout of sediment barrier Accumulated sediment is less than halfway to the top of sediment barrier
Slope Protection				Slopes tracked, disked, or conditioned after final grade is established Slopes seeded, mulched, or blanketed within 14 days, no unmanaged rills or gulying Heavy downslope flows controlled by lined downdrain channels or slope drain pipes No muddy runoff from slopes into streams, rivers, lakes, or wetlands
Inlet Protection				Inlet dam/device or filtration unit placed at all inlets receiving muddy flows No visible undercutting, bypassing, or blowout of inlet protection dam or device Accumulated sediment is less than halfway to the top of the inlet protection dam/device
Outlet Protection				High flow discharges have rock or other flow dissipaters of adequate sizing at outlet Culvert outlets show no visible signs of erosion/scour, bank failure, or collapse
Ditch and Channel Stabilization				No unmanaged channel bank erosion or bottom scouring visible within or below site Ditches with slopes more than 3% have check dams spaced as needed, if not grassed Ditch check dams tied in to banks, with center 4" lower than sides, and no bypassing Ditches with slopes of up to 5% are thickly seeded with grass (minimum requirement) Ditches 5% to 15% are lined with thick grass and erosion control blankets as needed Ditches 15% to 33% are lined with thick grass and matting or other approved product Ditches exceeding 33% are paved or lined with rock or other approved product



**SECTION 02374 – ESC PERMITTING, INSPECTION, AND PERMITTING PROCEDURES**

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**Permitting, Inspection, and Enforcement Procedures for  
Erosion and Sediment Control on  
Division of Water Quality Capital Construction Projects**

Lexington-Fayette  
Urban County Government



December 2021

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Permitting, Inspection, and Enforcement Procedures  
for Erosion and Sediment Control on Division of Water Quality  
Capital Construction Projects

**Date of Original Publication:**

October 2013

**Date of Current Publication:**

December 2021



This publication was developed by the Tetra Tech / Third Rock Consultants Stormwater Program Management Team under contract to LFUCG for purposes of implementing the stormwater provisions of its Clean Water Act Consent Decree and/or its Kentucky Division of Water (KDOW) Municipal Separate Storm Sewer System (MS4) Permit.

## **Permitting, Inspection, and Enforcement Procedures for Erosion, Sediment, and Stormwater Control on Division of Water Quality Capital Construction Projects**

### DWQ Remedial Measures Plan Projects

**DWQ RMP Program Manager:** Bob Peterson

**DWQ Program Management Consultant:** Hazen and Sawyer

**Construction Contract Administrators (CA):** DWQ Consultants

**Resident Project Representative (RPR):** DWQ Consultants

**ESC Plan Reviewer:** DWQ Stormwater Section – Amad Al-Humadi

**Land Disturbance Permit (LDP) Issuer:** DOE New Development

**Erosion and Sediment Control Compliance Inspector:** RPR

**Accela Data Entry:** DWQ Compliance & Monitoring (C&M) – Kevin Lyne

**Land Disturbance Permit (LDP) Permittee:** Contractor

### DWQ Wastewater Treatment Plant Capital Projects

**DWQ Plant Engineer:** Tiffany Rank

**DWQ Project Manager:** Varies

**Construction Contract Administrators (CA):** Rick Day, Rick Bowman

**Resident Project Representatives (RPR):** Varies

**ESC Plan Reviewer:** DWQ Stormwater Section – Amad Al-Humadi

**Land Disturbance Permit (LDP) Issuer:** DOE New Development

**Erosion and Sediment Control Compliance Inspector:** RPR

**Accela Data Entry:** DWQ Construction Management – Jody Scrivner

**Land Disturbance Permit (LDP) Permittee:** Contractor

### DWQ Stormwater, Water Quality, and Capacity Assurance Capital Projects:

**DWQ Section Managers:** Mark Sanders, Lindsie Nicholas, or Chris Begley

**DWQ Project Manager:** Varies

**Construction Contract Administrator (CA):** Rick Day

**Resident Project Representatives (RPR):** Rick Day or Bill Warren

**ESC Plan Reviewer:** DWQ Stormwater Section – Rick Day or Amad Al-Humadi

**Land Disturbance Permit (LDP) Issuer:** DOE New Development

**Erosion and Sediment Control Compliance Inspector:** RPR

**Accela Data Entry:** DWQ Construction Management – Jody Scrivner

**Land Disturbance Permit (LDP) Permittee:** Contractor

## Permitting Procedures

1. Contractor shall develop a Stormwater Pollution Prevention Plan / Erosion and Sediment Control Plan (SWPPP/ESC Plan). A SWPPP/ESC Plan template is on the LFUCG website at <https://www.lexingtonky.gov/new-development>. On some projects, the construction contract documents may contain a SWPPP/ESC Plan prepared by LFUCG's consultant for purposes of establishing bid quantities. If the Contractor chooses to use this SWPPP/ESC Plan to obtain the required permits, the Contractor takes sole responsibility for the content of the SWPPP/ESC Plan and the implementation of the plan during construction.
2. Contractor must submit an application for a Land Disturbance Permit to the LFUCG Division of Engineering before beginning project construction. The permit application is available at <https://aca3.accela.com/lexky/>.
3. For projects with a disturbed area of  $\geq 1$  acre, the contractor must submit a Notice of Intent (NOI) to the KY Division of Water (KDOW) and obtain KYR10 Permit coverage before beginning construction of any kind on the site. The NOI can be submitted electronically at <http://dep.ky.gov/formslibrary/Documents/KYR10PermitPage.pdf>.
4. Contractor cannot start project work until they have obtained the LFUCG Land Disturbance Permit and KYR10 Permit coverage (if applicable – see above).
5. Amad Al-Humadi will review the SWPPP/ESC Plan, confirm that the Contractor has obtained KYR10 Permit coverage (if applicable – see above), and authorize the Contractor to install the initial BMPs.
6. Contractor then installs the initial BMPs, prior to project work (general excavation, grading, etc.).
7. Amad Al-Humadi inspects the installation of the initial BMPs and authorizes DOE New Development to issue the Land Disturbance Permit. Contractor then begins the project.

## Contractor Responsibilities

### Contractor shall:

1. Develop a SWPPP/ESC Plan, or review and agree to use the SWPPP/ESC Plan prepared by LFUCG's consultant, or amend it as needed.
2. Attend a pre-construction conference with LFUCG.
3. Post the LFUCG Land Disturbance Permit and KYR10 Permit (if applicable) on the project sign at the site, and keep a copy of the SWPPP/ESC Plan on site and available for review.
4. Follow the SWPPP/ESC Plan; revise and redline it as conditions change on the site.
5. Install and maintain BMPs to prevent sediment from washing into streets, storm sewers, and streams. All runoff from disturbed areas must pass through a BMP before leaving the site.
6. Maintain a 50-foot vegetative buffer strip along perennial and intermittent streams (including impounded streams), wetlands, sinkholes, and inlets.
7. If work must be done within 50 feet of a perennial or intermittent stream, wetland, sinkhole, or inlet, complete work as soon as possible and stabilize the area within 24 hours after completing work.
8. Conduct an ESC inspection at least once every 7 calendar days and within 24 hours after each rainfall of 0.5 inches or greater (or 4 inches of snow or greater).
9. Complete and sign the inspection form after each inspection. Keep the completed inspection forms on site and available for review.
10. Stabilize inactive portions of the site with straw, blanket, seed, or other cover within 14 days of no activity, and provide permanent stabilization within 14 days of reaching final grade.
11. If the project has a KYR10 Permit, file a Notice of Termination with the KY Division of Water and forward to the LFUCG Division of Engineering and LFUCG Division of Water Quality when construction has been completed and the site is stabilized. Final stabilization is defined as follows from KYR10: "All soil disturbing activities at the site have been completed and either of the two following criteria are met – a uniform (e.g., evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed."
12. Respond promptly to Verbal Warnings and Notices of Violation from LFUCG regarding correcting ESC problems.

## Inspection Procedures for the Resident Project Representative

### Weekly Field Inspections

1. Ensure the LFUCG Land Disturbance Permit and KYR10 Permit are posted at the site
2. Ensure SWPPP/ESC Plan is available for review
3. Ensure that the weekly and rain event completed inspection forms are available for review
4. Walk the perimeter of the entire site
5. Note downgradient controls:
  - Inspect ditches and sheet flow areas
  - Silt fences working?
  - Ditches vegetated / stabilized?
  - Significant sediment discharges?
6. Walk around internal disturbed areas
  - Idle for more than 14 days . . . stabilized?
7. Inspect all inlets and ditches
  - Inlets protected, ditches stabilized?
8. Check out material / fuel storage areas
  - Spills? Leaks? Leaching pollutants? Litter / waste managed?
9. Inspect concrete washout(s)
10. Inspect the construction entrance / exit
11. Inspect the 50-foot vegetative buffer strip adjacent to waterways. The buffer strip must be stabilized within 24 hours of any approved construction activity in the buffer strip.
12. Communicate inspection findings to Contractor, note issues that need attention
13. Complete the LFUCG inspection checklist
14. Submit an electronic copy of the completed checklist to the Project Manager and the Accela Data Entry Contact person on page 1.
15. Inspect the site the next working day after a storm event of 0.5 inches or greater. Complete the inspection checklist and submit a copy to the Project Manager

### Important Items for the Permittee / Contractor / RPR to Verify:

- Posted permits, plans, and inspection reports
- Graded / inactive areas stabilized with seed, mulch, blankets, mats, etc.
- Stabilized, non-eroding ditches
- Maintained silt fences and protected curb / drop inlets
- No mud on the street
- Trash and litter managed
- No disturbance in the 50-foot buffer zone adjacent to streams, wetlands, sinkholes, and inlets, unless approved; areas within the 50-foot buffer must be stabilized within 24 hours

## Enforcement Procedures

1. The Contractor will be paid for erosion and sediment control based upon a schedule of values established within the Measurement and Payment section of the specifications (e.g., 25% paid once initial ESCs have been installed and LDP obtained, 50% paid in equal monthly payments for maintenance over the construction period, 25% paid for removal of ESCs and final stabilization). The intent of this provision is to pay the Contractor for ESC maintenance for each month that the BMPs are maintained and functioning properly.
2. The RPR shall follow the attached *Compliance Assistance Guidance for DWQ Capital Project RPRs* and implement the **Escalating Enforcement Process** described below.

**Table 1 – ESC Escalating Enforcement Process**

DWQ Capital Project	Escalating Enforcement Process
Remedial Measures Program	The RPR shall escalate the issue to the RMP Program Manager and RMP Program Management Consultant’s Project Manager
Wastewater Treatment Plants Stormwater Section MS4/Water Quality Section Sanitary Sewers Capacity Assurance Program	The RPR shall escalate the issue to the DWQ Section Manager and the DWQ Construction Contract Administrator

3. DWQ will use all available means in the contract to obtain compliance, including:
  - a. withholding payment
  - b. notifying the Contractor that LFUCG intends to initiate the process for declaring that the Contractor is in default of the contract and specifying a deadline for addressing the ESC deficiencies
  - c. initiating the process for calling the ESC Performance Bond
  - d. issuing Notices of Violation (NOVs)
  - e. stopping work

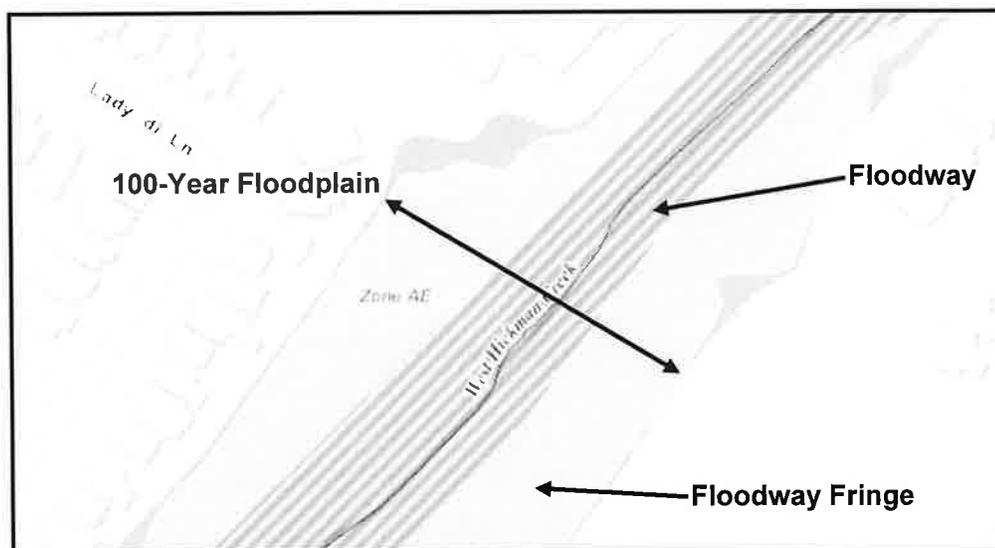
## Compliance Assistance Guidance for DWQ Capital Project RPRs

Observed Condition	Verbal Warning to Correct within 3-5 days (See Note 1)	Verbal Warning to Correct within 24 hours (See Note 1)	Escalate the Issue Immediately in Accordance with Table 1
Construction Entrance to Public Road	Rock pad poorly installed/maintained	Rock pad not installed	
	Small amount of sediment on road	Rock pad completely covered with soil	
Unstabilized Areas	Flat inactive disturbed areas not stabilized in 14 days	Significant amount of sediment on road	
		Ditches not stabilized immediately after construction	Disturbed, inactive slopes above waterways, wetlands, floodplains, critical areas <sup>2</sup> not stabilized within 24 hours
Inlet Protection	Sediment needs to be removed around inlet protection	Disturbed, inactive slopes not stabilized within 14 days	Discharge of concrete wash water, chemicals, other pollutants into inlets, streams, wetlands, etc.
Silt Fencing	Does not match SWPPP/ESC Plan but critical areas <sup>2</sup> and roads are protected	Curb inlet protection not in place or improperly installed	
	Does not comply with Stormwater Manual but is functional	Silt fence not installed per plan and critical areas <sup>2</sup> and roads are not protected	
	Needs maintenance/repair, but is not near an inlet or surface water	Blowouts have occurred with discharge of sediment to critical areas <sup>2</sup>	Large quantities of sediment in critical areas <sup>2</sup>
Soil Stockpiles	No perimeter controls, downstream BMPs in place	Not trenched in, is not functional	
		Silt fence needs repairs in critical areas <sup>2</sup>	
Permit Violations	No perimeter controls, downstream BMPs in place	No perimeter controls, downstream BMPs not in place	
		Permit expired	Site not permitted (No LDP or KDOW NOI)
		Permit not posted or available on site	
		Contact name/phone not posted	
		No self-inspection reports; reports not on site	
	Self-inspection reports not current		
	SWPPP/ESC Plan not on site		
			Unapproved construction activities in 50-foot buffer zone around sinkholes, streams, wetlands, etc.
			Construction has started, BMPs not installed

1. Escalate the issue in accordance with Table 1 after the 2nd Verbal Warning.
2. Critical areas are areas within 25 feet of a stream, wetland, sinkhole, or inlet.

## Policy for Storing Construction Material in the Floodway/Floodplain Division of Water Quality Capital Projects October 1, 2019

1. Excavated residual spoils from excavation may be stored in the floodway or floodway fringe under the following conditions:
  - a. Spoil material may be stored no longer than 30 days in the floodway. Any material in the floodway after 30 days shall be removed.
  - b. Spoil material may be stored in the floodway fringe (the area in the floodplain that is outside of the floodway) no longer than 180 days.
  - c. Spoil material stored in the floodway or floodway fringe shall be enclosed by reinforced silt fence (Coir logs are not acceptable). Diversion berms/ditches shall be constructed upslope of stockpiles to minimize run-on water.
  - d. Any evidence of erosion of the stored material shall be immediately mitigated.
2. Construction materials stored in the floodway shall be anchored to prevent floatation or displacement during a flood event.
3. Fuel tanks, lubricants, fertilizer, and chemical products or other potentially hazardous materials shall not be stored in the floodway or floodway fringe.
4. Prior to beginning construction, the contractor shall submit a Spoils Management Plan to LFUCG for review and acceptance. The plan shall be kept on site at all times.



## SECTION 02700 - ASPHALTIC CONCRETE PAVING

### PART 1 - GENERAL

#### 1.01 SCOPE OF WORK

- A. The asphalt concrete paving replacement work includes the construction of an aggregate base course, asphalt binder and wearing courses to match existing courses and as specified herein. This work is to replace paving disturbed by the construction and any damages to paving by Contractor's operations, as well as new pavement and driveways, within the limits shown on the plans.

#### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. The general provisions of the Contract apply to the Work specified in this Section.
- B. Section 02225 – Excavating, Backfilling and Compacting for Sewers

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. All roads in Fayette County shall be constructed in accordance with the following sections of the Kentucky Transportation Cabinet's (KTC) Standard Specifications for Road and Bridge Construction. Items not covered by the KTC specifications shall require a special design by the Engineer and shall be approved by LFUCG.

1. Embankment	Division 200
2. Excavation	Division 200
3. Subgrade	Division 200
4. Dense Graded Aggregate	Division 300
5. Bituminous Concrete	Division 400
6. Concrete Paving	Division 500
7. Chemical Stabilization	Division 200

#### 2.02 SUBGRADE

- A. The subgrade shall be free from ruts, large stones, and excessive dust. The subgrade shall be subjected to a subgrade proof-roll test so that soft, wet, or pumping areas may be identified. The minimum total weight of the loaded dump truck shall be 37 tons. The truck shall be operated at walking speed over the entire subgrade. Any excessive deflections such as rutting or pumping shall be stabilized as directed by the Engineer.
- B. Typical treatments of soft or wet areas of the pavement subgrade include removal and replacement (undercutting), "working-in" No. 2 stone, or installation of a geogrid/geotextile system and crushed stone. The extent and performance requirements of such improvements shall be set forth in the Contract Documents or as directed by the Engineer. Other means to stabilize the subgrade such as lime stabilization or cement modification as described in KTC Section 304, may be necessary.

- C. The pavement subgrade shall be compacted to a uniform density throughout according to the requirements of the Contract Documents. If the density of the subgrade has been diminished by exposure or weather, after having been previously compacted, it shall be recompact to the required density and moisture content.
- D. Subgrade drainage systems or perforated pipe underdrains shall be installed in accordance with LFUCG Standard Drawings where indicated on the Improvement Plans.

### **2.03 GRANULAR BASE COURSE**

- A. The granular base course shall consist of compacted dense-graded aggregate (DGA) meeting the requirements set forth in Kentucky Transportation Cabinet's (KTC) Standard Specifications for Road and Bridge Construction. The Contractor shall submit to the Engineer the results of physical tests performed on the material to verify that it meets the requirements referenced above.
- B. The DGA shall be applied in thicknesses of no less than 3 inches and no more than 6 inches in thickness. Each lift of DGA shall be compacted to a density no less than 84 percent of the solid volume density based on the oven-dry bulk specific gravity as determined by KM 64-607. A field density test of DGA placement may be required if deemed necessary by Engineer. The tests shall be conducted at a frequency of one test per 2,000 square feet with a minimum of one test per shift during which DGA is placed. The DGA shall be compacted using a vibratory roller or vibratory plate. The DGA shall be placed to achieve a moisture content less than 5%, and shall be stable with no rutting or pumping.
- C. Before arriving at the site, the DGA shall be adequately mixed with water in a pugmill. During transportation and storage on site, the DGA shall be covered to prevent loss of moisture. If drying of the DGA occurs, the Contractor shall add water to the DGA and shall thoroughly mix the material before its placement.

### **2.04 ASPHALT BASE AND SURFACE COURSES**

- A. The materials and methods for construction for the asphalt base course and surface course shall meet the requirement of Kentucky Transportation Cabinet's (KTC) Standard Specifications for Road and Bridge Construction. The Contractor shall submit test results of the aggregate gradation and asphalt content to the Engineer.
- B. The pavement course thicknesses and construction tolerances shall be specified in the Contract Documents. The surface of each course shall be checked with templates, straightedges, and/or stringlines for uniformity. All irregularities exceeding the allowable tolerances must be repaired as required by the Contract Documents or as directed by the Engineer.

### **2.05 TACK COAT**

- A. The tack coat shall be type SS-1h. Before applying the tack coat the area to receive pavement shall be cleaned. The tack coat shall be applied well in advance of the paving operation to allow all water to evaporate before the surface course is placed. Work shall be planned so that no more tack coat than is necessary for the day's operation is placed on the surface.

END OF SECTION

## SECTION 09961 - HIGH PERFORMANCE PAINTS AND COATINGS - WASTEWATER

### 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 or altered by this work. Areas that have been directly altered or damaged by construction shall be repainted to match existing conditions using the appropriate painting system. Repainting shall include the entire length of a system including piping, equipment, and accessories. Walls and structural items altered shall be painted for their entire length and height.

## **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. Provide MSDS sheets for each item submitted.
- 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. Carboline

#### **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 and coating manufacturer.
- B. Starting of painting work will be construed as 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. Concrete surfaces shall be prepared in accordance with SSPC-13 – Concrete Surface Preparation. Prepare concrete to remove contaminants, open bugholes, surface voids, air pockets, and other subsurface irregularities. Do not expose underlying aggregate. Use dry, oil-free air for blasting operations. Surface texture after blasting shall be similar to that of medium grit sandpaper. Remove residual abrasives, dust, and loose particles by vacuuming or blowing with high pressure air.

- 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 cleaners such as Clean 'N' Etch or equivalent.
- 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 (DFT) as indicated or, if not indicated, as recommended by coating manufacturer. Coatings to be in immersion or a severe environment shall be tested for dry film thickness. Testing shall be accomplished by methods recommended by coating manufacturer. Record DFT for each 100 square feet of surface area using the average of three readings within each 100 square feet. Additional coats of paint shall be applied where minimum DFT is not achieved.
- 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.
    - 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 SP 0188-90.
- 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. The Owner's Resident Project Representative shall check paint film thickness with an approved paint mil thickness tester.
  - 2. 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.
  - 3. 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

Product names and numbers are based on Tnemec products.

#### A. Ferrous Metals - Structural, Tanks, Pipes and Equipment

	<u>Dry Mils</u>	
1. Exterior, Non-Immersion		
Sur. Prep.:	SSPC-SP6 Commercial Blast Cleaning	
1st Coat:	1 Series 1 Omnithane	2.5 - 3.5
2nd Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0
3rd Coat:	1074- Endura-Shield	2.0 - 3.0
1st Coat:	Corothane I Galvapak	2.5 - 3.5
2nd Coat:	Macropoxy 646 FC	2.0 - 3.0
3rd Coat:	HS Polyurethane	2.0 - 3.0
2. Interior, Non-Immersion		
Sur. Prep.:	SSPC-SP6 Commercial Blast Cleaning	
1st Coat:	1 Series 1 Omnithane	2.5 - 3.5
2nd Coat:	N 69 High-Build Epoxoline II	4.0 - 6.0
Finish Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0
1st Coat:	Corothane I Galvapak	2.5 - 3.5
2nd Coat:	Macropoxy 646 FC	4.0 - 6.0
3rd Coat:	Macropoxy 646 FC	2.0 - 3.0
3. Immersion, Non-Potable Water		
Sur. Prep.:	SSPC-SP10 Near-White Blast Cleaning	
1st Coat:	1 Series 1 Omnithane	2.5 - 3.5
2nd Coat:	N 69 High-Build Epoxoline II	4.0 - 6.0
3rd Coat:	N 69 High-Build Epoxoline II	4.0 - 6.0
1st Coat:	Corothane I Galvapak	2.5 - 3.5
2nd Coat:	Macropoxy 646 FC / SherGlass FF	4.0 - 6.0
3rd Coat:	Macropoxy 646 FC / SherGlass FF	4.0 - 6.0
4. Factory Primed Interior (Refer to Piping Specifications)		
Sur. Prep.:	Surface shall be clean and dry	
Int. Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0
Finish Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0
2nd Coat:	Macropoxy 646 FC	2.0 - 3.0
3rd Coat:	Macropoxy 646 FC	2.0 - 3.0
5. Factory Primed, Exterior (Refer to Piping Specifications)		
Sur. Prep.:	Surface shall be clean and dry	
1st Coat:	N69 Epoxoline II	4.0 - 6.0
2nd Coat:	1074- Endura-Shield	2.0 - 3.0
1st Coat:	Macropoxy 646 FC	4.0 - 6.0
2nd Coat:	HS Polyurethane	2.0 - 3.0

6. Primed Steel (Doors, Frames, etc.)

Touch up:	1 Series 1 Omnithane	
1st Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0
2nd Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0

Touch up:	Corothane I Galvapac	
1st Coat:	Macropoxy 646 FC	2.0 - 3.0
2nd Coat:	Macropoxy 646 FC	2.0 - 3.0

7. Hydrogen Sulfide Exposed

Sur. Prep:	SSPC-SP5	
1st Coat:	435 Perma-Glaze	15.0 - 20.0
2nd Coat:	435 Perma-Glaze	15.0 - 20.0

1st Coat:	Dura-Plate 5900	15.0 - 20.0
2nd Coat:	Dura-Plate 5900	15.0 - 20.0

B. Galvanized Steel - Pipe and Miscellaneous Fabrications

1. Exterior, Non-Immersion

Sur. Prep.:	SSPC-SP1 Solvent Cleaning and Etch	
1st Coat:	N69 Epoxoline II	2.0 - 3.0
2nd Coat:	1074-Color Endura-Shield	2.0 - 3.0

1st Coat:	Macropoxy 646 FC	2.0 - 3.0
2nd Coat:	HS Polyurethane	2.0 - 3.0

2. Interior, Non-Immersion (Doors, Frames, etc.)

Sur. Prep.:	SSPC-SP1 Solvent Cleaning and Etch	
One Coat:	N69 Epoxoline II	2.0 - 3.0
2nd Coat:	N 69 High-Build Epoxoline II	2.0 - 3.0

1st Coat:	Macropoxy 646 FC	2.0 - 3.0
2nd Coat:	Macropoxy 646 FC	2.0 - 3.0

3. Immersion, Non-Potable Water

Sur. Prep.:	SSPC-SP1 Solvent Cleaning followed by abrasive blast (SSPC-SP 16)	
1st Coat:	N69 Epoxoline II	3.0 - 5.0
2nd Coat:	N69 Epoxoline II	4.0 - 6.0

1st Coat:	Macropoxy 646 FC / SherGlass FF	3.0 - 5.0
2nd Coat:	Macropoxy 646 FC / SherGlass FF	4.0 - 6.0

C. Porous Masonry - Concrete Masonry Units

1. Interior

Sur. Prep.:	Surface shall be clean and dry	
1st Coat:	130 Envirofill (Spray & Back Roll to Fill Porosity)	80 - 100 sf/gal.
2nd Coat:	84 Ceramlon ENV	4.0 - 6.0
3rd Coat:	84 Ceramlon ENV	4.0 - 6.0

1st Coat:	Cement Plex 875 (Spray & Back Roll to Fill Porosity)	80 - 100 sf/gal.
2nd Coat:	ProIndustrial HD Epoxy	4.0 - 6.0
3rd Coat:	ProIndustrial HD Epoxy	4.0 - 6.0

#### D. Cast-In-Place and Precast Concrete

##### 1. Concrete Walls & Precast Concrete Ceilings (Interior)

Sur. Prep.: Abrasive Blast (SSPC-SP13) Fill bugholes and voids with coating manufacturer's epoxy filler.

1st Coat:	N69 Epoxoline II	4.0 - 6.0
2nd Coat:	N69 Epoxoline II	4.0 - 6.0

1st Coat:	Macropoxy 646 FC	4.0 - 6.0
2nd Coat:	Macropoxy 646 FC	4.0 - 6.0

##### 2. Concrete Floors (Interior, Heavy Traffic and Chemical Exposure)

Sur. Prep.: SSPC-SP 13/NACE 6 – Degrease and chemical etch with muriatic acid  
 1st Coat: H&C Colortop Water Based Concrete Stain  
 2nd Coat: H&C Colortop Water Based Concrete Stain

Primer:	SW GP 3561	1/8 inch
1st Coat:	SW GP 3746	6.0 – 8.0
2nd Coat:	SW GP 4638	2.0 – 3.0

##### 3. Chemical Containment Areas

Sur. Prep.: Abrasive Blast (SSPC-SP13, Severe Service) Fill bugholes and voids with recommended coating manufacturer's epoxy filler.

1st Coat:	201 Epoxoprime	6.0 - 8.0
2nd Coat:	275 Stranlock	25.0 – 40.0
Finish Coat:	282 Theme-Glaze	8.0 – 12.0

1st Coat:	Corobond 100 Primer	6.0 - 8.0
2nd Coat:	CorCote HCR FF	15.0 – 20.0
Finish Coat:	CorCote HCR	8.0 – 12.0

#### E. Wood

##### Interior or Exterior

Sur. Prep.:	Surface shall be clean and dry	
1st Coat:	151-1051 Elasto-Grip FC	1.0 - 1.5
2nd Coat:	29 Tufcyl	2.0 - 3.0 - 3.5
3rd Coat:	29 Tufcyl	2.0 - 3.0

1st Coat:	Premium Wall & Wood Primer	1.0 - 1.5
2nd Coat:	ProClassic WB	2.0 - 3.0 - 3.5
3rd Coat:	ProClassic WB	2.0 - 3.0

## F. Insulated Pipe

Sur. Prep.:	Surface shall be clean and dry	
1st Coat:	6-Color Tneme-Cryl	2.0 - 3.0
2nd Coat:	6-Color Tneme-Cryl	2.0 - 3.0
1st Coat:	DTM Primer / Finish	2.0 - 3.0
2nd Coat:	DTM Primer / Finish	2.0 - 3.0

## G. Gypsum Board

### 1. Interior Drywall - Architectural

Sur. Prep.:	Surface shall be clean and dry	
1st Coat:	151-1051 Elasto-Grip FC	1.0 - 1.5
2nd Coat:	6-Color Tneme-Cryl	2.0 - 3.0
1st Coat:	ProMar 200 0 VOC Primer	1.0 - 1.5
2nd Coat:	DTM Primer / Finish	2.0 - 3.0

### 2. Interior Drywall - Severe Exposure

Sur. Prep.:	Surface shall be clean and dry	
Prime Coat:	151-1051 Elasto-Grip FC	1.0 - 1.5
1st Coat:	113 H.B. Tneme-Tufcoat	2.0 - 3.0
2nd Coat:	113 H.B. Tneme-Tufcoat	2.0 - 3.0
Prime Coat:	ProMar 200 0 VOC Primer	1.0 - 1.5
1st Coat:	ProIndustrial WB Epoxy, B73 Series	2.0 - 3.0
2nd Coat:	ProIndustrial WB Epoxy, B73 Series	2.0 - 3.0

## 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:

### WATER LINES

Raw Water	Olive Green
Settled Water	Light Blue
Filtered or Finished Water	Dark Blue

### CHEMICAL LINES

Acid	Red
Ammonia	White
Caustic	Yellow w/ green band
Chlorine	Yellow
Coagulant	Orange
Fluoride	Light Blue w/ red band
Polymer	Orange w/ green band

### WASTE LINES

Overflow (Backwash waste)	Light Brown
Sewer (Sanitary or Other)	Dark Gray

### OTHER

Compressed Air	Dark Green
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. Each branch and riser take-off.
  - 3. Each pipe passage through wall, floor and ceiling construction.
  - 4. Each pipe passage to underground.
  - 5. All horizontal pipe runs-marked every 25 feet.

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.

### PART 2 - PRODUCTS

#### 2.01 DUCTILE IRON PIPE/DUCTILE IRON FITTINGS

- A. Flanged ductile iron pipe shall conform to the latest revisions of ANSI/AWWA C115/A 21.15. Bolt pattern of flange shall be in accordance with ANSI/AWWA C115/A 21.15 (which is equivalent to ASME/ANSI B16.1, Class 125 flange bolt pattern). Pipe shall have pressure class 250 rating. Gaskets shall be synthetic rubber ring gaskets with a thickness of 1/8 inch. Nuts and bolts shall be in accordance with ASME/ANSI B18.2.1, ASME/ANSI B18.2.2, ASME/ANSI B1.1, and ASTM A307  
  
Flanged fittings shall conform to the latest revisions of ANSI/AWWA C110/A 21.10 or ANSI/AWWA C153/A 21.53 (compact fittings). Gaskets shall be in accordance with ANSI/AWWA C111/A 21.11. Fittings shall have pressure class rating of 250 psi. Bolt pattern of flange shall be in accordance with ANSI/AWWA C115/A 21.15 (which is equivalent to ASME/ANSI B16.1, class 125 flange bolt pattern).
- 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 09961. Do not apply asphalt or bituminous coatings on pipe to be painted.
- C. Protecto 401 Ceramic Epoxy Interior Lining
  - 1. Condition of ductile iron prior to surface preparation

All ductile pipe and fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface. Because removal of old linings may not be possible, the intent of this specification is that the entire interior of the ductile iron pipe and fittings shall not have been lined with any substance prior to the application of the specified lining material and no coating shall have been applied to the first six inches of the exterior of the spigot ends.

## 2. Lining Material

The standard of quality is Protecto 401™ Ceramic Epoxy. The material shall be an amine cured novolac epoxy containing at least 20% by volume of ceramic quartz pigment. Any request for substitution must be accompanied by a successful history of lining pipe and fittings for sewer service, a test report verifying the following properties, and a certification of the test results.

- a. A permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A with a test duration of 30 days.
- b. The following test must be run on coupons from factory lined ductile iron pipe:
  - (1) ASTM B-117 Salt Spray (scribed panel) - Results to equal 0.0 undercutting after two years.
  - (2) ASTM G-95 Cathodic Disbondment 1.5 volts @ 77°F. Results to equal no more than 0.5 mm undercutting after 30 days.
  - (3) Immersion testing rated using ASTM D-714-87.
    - i. 20% Sulfuric acid—No effect after two years.
    - ii. 140°F 25% Sodium Hydroxide—No effect after two years.
    - iii. 160°F Distilled Water—No effect after two years.
    - iv. 120°F Tap Water (scribed panel)—0.0 undercutting after two years with no effect.
  - (4) ASTM G-22 90 Standard practice for determining resistance of Synthetic Polymeric materials to bacteria. The test should determine the resistance to growth of Acidithiobacillus Bacteria and should be conducted at 30 degrees centigrade for a period of 7 days on a minimum of 4 panels. The growth must be limited only to trace amounts of bacteria.
- c. An abrasion resistance of no more than 3 mils (.075 mm) loss after one million cycles using European Standard EN 598: 1994 Section 7.8 Abrasion Resistance.

## 3. Application

### a. Applicator

The lining shall be applied by a certified firm with a successful history of applying linings to the interior of ductile iron pipe and fittings.

### b. Surface Preparation

Prior to abrasive blasting, the entire area to receive the protective any substance that can be removed by solvent, shall be solvent cleaned to remove those substances. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be re-blasted.

c. Lining

After surface preparation and within 12 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness. No lining shall take place when the substrate or ambient temperature is below 40°F. The surface also must be dry and dust free. If flange pipe or fittings are included in the project, the lining shall not be used on the face of the flange.

d. Coating of Bell Sockets and Spigot Ends

Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum using Protecto 401™ Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.

e. Number of Coats

The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.

f. Touch-Up and Repair

Protecto 401™ Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.

4. Inspection and Certification

a. Inspection

All ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC PA-2 Film Thickness Rating.

The interior lining of all pipe barrels and fittings shall be tested for pinholes with a non-destructive 2,500 volt test. Any defects found shall be repaired prior to shipment.

Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.

b. Certification

The pipe or fitting manufacturer must supply a certificate attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.

5. Handling

Lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying. The pipe shall not be dropped or unloaded by rolling.

Care should be taken not to let the pipe strike sharp objects while swinging or being off loaded. Ductile iron pipe should never be placed on grade by use of hydraulic pressure from an excavator bucket or by banging with heavy hammers.

- D. Ductile iron fittings shall conform to AWWA C 110 with flanges faced and drilled 125-pound. 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 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 welded 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 AWWA C401 lined. 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 MJ 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.

## **2.04 INTERLOCKING LINK PIPE SEALS**

- A. In all locations indicated on the Drawings, interlocking link pipe seals shall be used. 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.

**2.05 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"-24" D.I. Pipe)
Style 128 steel (2"-96" steel pipe)	

**2.06 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.

### **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 interior space of plain wall sleeves shall be 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 Division 9.

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
- B. Valves furnished with equipment are included with equipment specifications.

#### **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.

### **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 ensure 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 sewage.
- 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.
- 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, or approved equal.

## **2.02 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 Golden-Anderson Industries, Inc. Fig. No. 250-D, 125# or equal.

## **2.03 SEWAGE COMBINATION AIR VALVE**

- A. Sewage Combination Air Valves shall be installed at the high points of the force main and at various locations as shown on the Contract Drawings.

B. Air valves shall be automatic float operated valves designed to exhaust air during the filling of a piping system and close upon liquid entry. The valve shall open during draining or if a negative pressure occurs. The valve shall also release accumulated air from a piping system while the system is in operation and under pressure.

1. The valve seat shall provide complete shut off to the full valve pressure rating.
2. Valves shall incorporate a full port orifice, a seal plug assembly, and an upper and lower float to provide a rolling resilient seal.
3. The seal shall be a one-piece design and include a large orifice and a small orifice and each shall open or close as needed to allow release or intake of air as the demand on the system regulates.
4. Valve shall be designed to intake or discharge a minimum of 100 SCFM of air with a 3.5-psi differential pressure.

C. Materials

1. Valve cover, lower float, stem, washer, spring, nuts and bolts: 316 Stainless Steel.
2. Upper float: Foamed polypropylene.
3. O-rings: Buna-N.
4. Seal plug assembly and base and body: 316 Stainless Steel.

D. All Sewage Combination Air Valves on the force main shall be ARI model no. D-025 as manufactured by A.R.I. Flow Control Accessories, Kfar Charuv, Israel, or equal. Sizes shall be based on the pipeline diameter as noted herein:

Pipe Diameter	<u>3" – 8"</u>	<u>10" – 16"</u>	<u>18" – 20"</u>	<u>24" – 48"</u>
Air Valve Size	2"	3"	4"	6"

**2.04 VALVE OPERATORS**

- A. Valve operators shall be as shown on the plans and specified herein and in Section 2.05.
- B. Valves located six (6) feet or more from floor level shall be furnished with chain wheel operators or chain level operators. Chains shall extend to within four (4) feet off the floor. All NRS floor stands and geared operators shall be indicating type.

**2.05 VALVE ACTUATORS**

- A. The actuator shall consist of an electric motor, worm gear reduction, absolute position encoder, electronic torque sensor, mechanically and electrically interlocked reversing motor contactor, electronic control, protection, and monitoring package, manual override hand wheel, valve interface bushing, 32-character graphical LCD (Liquid Crystal Display), and local control switches all contained in an enclosure that is sealed to NEMA 4, 4X, 6, IP68 to 15M for 96 hours, and (XP as required). Actuator design life shall be at least one million drive sleeve turns.
- B. The power transmission shall be completely bearing-supported, and consist of a hardened alloy steel worm and bronze alloy worm gear; oil-bath lubricated using synthetic oil designed specifically for extreme pressure worm and worm gear transmission service.

- C. The motor shall be three-phase/60-cycle with Class F insulation and a thermistor embedded within the motor windings to prevent damage due to overload. The motor shall be easily removed through the use of a plug-in connector and shaft coupling.
- D. Valve position shall be sensed by an 18-bit, optical, absolute position encoder with redundant position sensing circuits designed for Built-In-Self-Test [BIST]. Each of the position sensing circuits shall be redundant permitting up to 50% fault tolerance before the position is incorrectly reported. The BIST feature shall discern which failures signal a warning only and which require a warning plus safe shutdown of the actuator. Open and closed positions shall be stored in permanent, nonvolatile memory. The encoder shall measure valve position at all times, including both motor and hand wheel operation, with or without power present, and without the use of a battery. The absolute encoder will be capable of resolving  $\pm 7^\circ$  of output shaft position over 10,000 output drive rotations.
- E. An electronic torque sensor shall be included. The torque limit may be adjusted from 40-100% of rating in 1% increments. The motor shall be de-energized if the torque limit is exceeded. A boost function shall be included to prevent torque trip during initial valve unseating and during extreme arctic temperature operation ( $-50^\circ\text{C}$ ), and a "Jammed Valve" protection feature, with automatic retry sequence, shall be incorporated to de-energize the motor if no movement occurs.
- F. The control module shall include power and logic circuit boards, control transformer, and at least two primary power protection fuses, all mounted to a steel plate and attached in the control compartment with captive screws. The use of O rings or other such devices to secure the control boards shall not be permitted. The module shall be easily removed through the use of plug-in connectors. The module shall also include a reversing contactor, local control switches, 32-character graphical LCD, and LED indicators. It shall also be Bluetooth ready. All internal wiring shall be flame-resistant, rated  $105^\circ\text{C}$ , and UL/CSA listed. Voltage shall be selectable via a jumper included on the power board.
- G. The reversing contactor shall be mechanically and electrically interlocked to prevent simultaneous energizing of the open and close coils. The control module shall also include an auto reversal delay to inhibit high current surges caused by rapid motor reversals. The control transformer shall include vacuum-impregnated coils and dual primary fuses.
- H. A Phase Correction circuit shall be included to correct motor rotation faults caused by incorrect site wiring. The phase correction circuit shall also detect the loss of a phase and disable operation to prevent motor damage. The monitor relay shall trip and an error message shall be displayed on the LCD screen when loss of phase occurs and indicate the fault for Remote operation.
- I. Discrete remote control may be configured as 2, 3, or 4 wires for open-stop-close control. Remote control functions may be powered by external 24 VDC, 125 VAC, or the actuator's internal supply 24 VDC supply. The voltage values for signal threshold shall be 19.2V AC/DC and 5.0V AC/DC respectively. The maximum load for 24Vdc is 2mA. The internal supplies shall be protected against over current and short circuits faults and utilize optical isolation to minimize electro-magnetic interference. Discrete control shall have an isolated common.
- J. ESD (Emergency Shut Down) provision shall be included in each actuator. The actuator shall permit up to three inputs for ESD and they shall be configurable. The ESD signal shall override any existing signal (except LOCAL, STOP, and INHIBIT) and send the valve to its configured emergency position. The ESD may also be configured to override LOCAL, STOP, and/or INHIBIT. Provision for an isolated common shall be provided.
- K. Inhibit movement provision shall be included in each actuator. The actuator shall permit up to three inputs for Inhibits and they shall be configurable. Provision for an isolated common shall also be provided.

- L. Terminals shall be included to connect the electronic controls package, including display, to a back-up 24 VDC power source. As a standard alternative the actuator shall have the ability to maintain the status and alarm contacts in order to update status to the control room and also provides status visibility on the LCD screen without main power applied. It should be configurable for at least one hour and, once main power is restored, be available for the next unforeseen power outage. The use of an integral battery is prohibited.
- M. A dedicated circuit to prevent undesired valve operation in the event of an internal circuit fault or erratic command signal shall be included. A single point failure will not result in erratic actuator movement. An open or short-circuit in the internal circuit board logic shall not energize the motor contactor, nor shall a single fused control relay contact fail to deenergize the motor contactor. The command inputs shall be optically coupled and require a pulse width of at least 250 ms to 350 ms to turn on or off. In the event of an internal circuit fault, an alarm shall be signaled by tripping the Monitor Relay and through LCD indication.
- N. Four latched status contacts rated 125VAC, 0.5A and 30VDC, 2 amps shall be provided for remote indication of valve position, configured as 1-N/O and 1-N/C for both the open and closed positions. Two contacts may be configured to represent any other actuator status; mid-travel position, switched to local, overtorque, motor over temperature, manual operation, switched to remote, switched to stop, valve moving, close torque switch, open torque switch, hardware failure, ESD active, inhibits active, valve jammed, analog IP (input) lost, lost phase, and network controlled.
- O. A monitor relay shall be included and shall trip when the actuator is not available for remote operation. Both N/O and N/C contacts shall be included, rated 125VAC, 0.5A and 30VDC, 2 amps. The monitor relay shall be configurable for three additional fault indications; lost phase, valve jammed, and motor overtemp. The yellow LED shall blink when the monitor relay is active.
- P. The ACP (Actuator Control Panel) cover & module shall use solid-state Hall-effect devices for local communication and configuration. The use of reed switches on the module is prohibited. A 32-character, graphical LCD shall be included to display valve position as a percent of open, 0-100%, and current actuator status. "STATUS OK" shall be displayed for an operable actuator. If the actuator is not operable, the appropriate alarm shall be displayed. The alarm shall be continuously displayed until the actuator is operable. Red, green, and yellow LEDs shall be included for open, close, stopped, and moving indication. The Red and Green LEDs shall be reversible. A padlockable LOCAL-STOP-REMOTE switch and an OPEN-CLOSE switch shall be included for local valve actuator control. The control switches shall not penetrate the controls cover and shall be designed to electrically isolate the actuator's internal components from the external environment. The OPEN-CLOSE switch may be configured for maintained or push-to-run (inching) control.
- Q. The device shall be non-intrusive - All calibration shall be possible without removing any covers and without the use of any special tools. All calibration shall be performed in clear text languages, no icons shall be used. The languages shall be English, Spanish, French, German, Portuguese, Italian, Mandarin, Russian, Malay, and Katakana. All calibration shall be performed by answering the "YES" and "NO" questions displayed on the LCD. "YES" is signaled by using the OPEN switch and "NO" by using the CLOSE switch, as indicated adjacent to the switches. A configurable password option shall be available to prevent unauthorized changes.
- R. Double sealed terminal compartment & Terminal block - All customer connections shall be located in a terminal chamber that is separately sealed from all other actuator components. Site wiring shall not expose actuator components to the environment. The internal sealing within the terminal chamber is suitable for NEMA 4, 6, and IP68 to 15M for 96 hours. The chamber shall include screw-type terminals, three for power and 54 for control, for site connections. Three conduit entries, available as: (2) - 1.25" NPT (M32) and (1)-1.5" NPT (M40) shall be located in the terminal chamber.

- S. Coatings - The actuator shall be coated with a polymer powder coat. The coating system shall be suitable for an ASTM B117 salt spray test of 1500 hours. External fasteners shall be stainless steel or high-strength carbon steel that has been chromate-hexavalent coated, and then top coated with a high-strength, high-endurance polymer. The fasteners shall be suitable for an ASTM B117 salt spray test of 500 hours.
- T. A handwheel and declutch lever shall be provided for manual operation. The handwheel shall not rotate during electric operation nor can a seized motor prevent manual operation. Changing from motor to manual operation is accomplished by engaging the declutch lever. Energizing the motor shall return the actuator to motor operation. The lever to enable the declutch shall be padlockable to permit motor operation only.
- U. The actuator shall include a removable torque or thrust bushing to mate with the valve shaft.
- V. Diagnostic facilities shall be included to accumulate and report the performance of the motor, encoder, contactor, cycle time, handwheel operations, actuator ID, firmware revision, and output turns. In addition, a torque profile of the reference baseline valve stroke and the last valve stroke shall be included. A feature for reset shall be provided. All diagnostic information shall be displayed on the LCD. Diagnostics shall also include an FDA (Frequency Domain Analysis) feature. The Frequency Domain Analysis methodology shall capture torque, position or speed values at regular time intervals while the actuator is motoring, and calculate the resulting data set with a Fast Fourier Transform [FFT]. The resulting information shall be used to isolate any components in the mechanical drive train that may exhibit excessive wear or may effect normal actuator operation. FDA and resultant fault indications shall be displayed via the graphical LCD. The actuator shall contain the ability for diagnostics information to be downloaded to a PC or PDA via both IRDA and Bluetooth ports.
- W. Factory testing - Every actuator shall be factory tested to verify: rated output torque, output speed, handwheel operation, local control, control power supply, valve jammed function, all customer inputs and outputs, motor current, motor thermistor, LCD and LED operation, direction of rotation, microprocessor checks, and position-sensor checks. A report confirming successful completion of testing shall be included with the actuator.

## 2.06 ACTUATOR CERTIFICATIONS

- A. Non-hazardous (Weatherproof/Submersion) Certifications
  - 1. IEC 529 protection code IP68; 15 meters for 96 hours continuous
  - 2. USA & CSA; NEMA 3, 4, NEMA 4X, NEMA 6
- B. Standard Hazardous Global certifications:
  - 1. FM – Class I, Groups B, C & D, DIV.1 and Class II, Groups E, F, & G, T4
    - a. T4A temperature classification is acceptable w/ operational times < 15 min.
  - 2. ATEX Eex d IIB T4 ATEX II 2 G, CENELEC Norm EN50014 and EN50018
  - 3. ATEX Eex d IIC T4 ATEX II 2 G, CENELEC Norm EN50014 and EN50018
    - a. T4A temperature classification is acceptable w/ operational times < 15 min.
  - 4. CSA – Class I, Groups B, C & D, DIV.1 and Class II, Groups E, F, & G, T4
  - 5. IEC Eexd IIB T4, IIB T4
  - 6. IEC Eexd IIC T4, IIC T4

## 2.07 ACTUATOR OPTIONS

### A. Lost power buffer

1. After the actuator has been powered by line power for one hour, it shall automatically withstand most power outages while maintaining the correct state of the S status contacts, even if the user repositions the actuator manually with the handwheel. To maximize its self-power time while the line power is lost, the actuator will place itself in its lowest possible power usage mode. The LCD will darken (sleep mode) until it is needed to be viewed. The LCD can be activated by moving the black knob to OPEN (YES) or by moving the actuator with the handwheel. After 10 seconds of inactivity, the LCD will return to sleep mode.
2. The use of batteries to perform this function shall be prohibited.

### B. Analog Position Transmitter (APT)

1. A non-contacting, internally powered, electrically isolated position transmitter shall be included to provide a 4-20 mA signal that is proportional to valve position.

### C. Modutronic Option

1. A controller that alters valve position in proportion to a 4-20 mA analog command signal shall be included. Positioning shall be accomplished by comparing the command signal to an internal position feedback. The internal feedback shall be of the non-contacting type. An automatic pulsing feature to prevent overshoot at the setpoint shall be included. Proportional bands, deadband, signal polarity, motion inhibits time, and fail position shall be adjustable through the LCD. Deadband shall be adjustable to 0.5% full span.

### D. Relays for Status and Alarms

1. Up to eight additional latching output contacts rated 250 VAC/30 VDC, 5 amps and configurable to represent any actuator status in either N/O or N/C state shall be available: mid-travel position, switched to local, overtorque, motor over temperature, manual operation, switched to remote, switched to stop, valve moving, close torque switch, open torque switch, hardware failure, ESD active, inhibits active, valve jammed, analog IP (input) lost, lost phase, and network controlled.

### E. DDC (Distributed Digital Control)

1. A digital communication control system that provides the ability to control and monitor up to 250 actuators over a single twisted-pair cable shall be included. The communication network shall employ Modbus (Bitbus) protocol on an RS-485 network, and shall be redundant such that any single break or short in the communication cable shall not disable any actuators. Each actuator shall include an addressable field unit that communicates over the twisted pair network and executes open, close, stop, ESD, and GO TO position commands. The field unit shall also communicate all actuator status and alarm diagnostic messages over the same communication network.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. All valves shall be installed in accordance with the manufacturer's recommendations.

END OF SECTION

## SECTION 11310 - SOLIDS HANDLING SUBMERSIBLE SEWAGE PUMPS

### PART 1 - GENERAL

#### 1.01 SCOPE OF WORK

- A. Provide all labor, materials, equipment, delivering, installing, testing, and placing into service all pumping equipment and with all appurtenances associated with the Lift Stations complete as shown on the Drawings and more fully described hereinafter. The equipment to be furnished and installed shall be as shown on the Drawings and shall include pumps, motors, guide rails, access hatches, control panels and control systems, and appurtenances, all tested and ready for operation.
- B. Unless otherwise specified the pump manufacturer shall furnish each pumping unit complete with drive motor and all other components and shall be entirely responsible for the compatibility in all respects of all components furnished.
- C. Several pump manufacturers are listed within this specification and for certain pump features there is more than one option that is acceptable. For these items, more than one option is specified in this specification and a pump manufacturer must meet one of the options.

#### 1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Submittals: Section 01300
- B. Operating & Maintenance Manuals: Section 01780

#### 1.03 MANUFACTURER

- A. The pumping units shall be provided by a single manufacturer with a minimum of five (5) years' experience in designing and manufacturing pumping equipment of similar type, size and capacity. The pumps shall be manufactured by the KSB, Pentair-Myers, or approved equal.
- B. Replacement Parts Capability: The manufacturer shall have the ability to promptly furnish any and all interchangeable replacement parts as may be needed at any time within the expected life of the pumps. Upon request, the Contractor shall submit evidence of the proposed manufacturer's ability to promptly fill replacement orders.
- C. 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.
- D. 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.
- E. 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 thereof, 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.

G. Disqualification of Manufacturer:

1. 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.
2. Failure to successfully comply with the provisions of subparagraphs A through H, inclusive, will constitute grounds for disqualification of pump manufacturer.

1.04 SUBMITTALS (SHOP DRAWINGS)

- A. General: The Contractor shall comply with the provisions of the specifications regarding submittals, unless otherwise specified herein.
- B. At the time of submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications.
- C. The Contractor shall provide a notarized certification indicating that all pumping products meet the required Specifications.
- D. 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 and approval before ordering.
- E. 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) Pump Impeller Size
      - 2) GPM
      - 3) TDH
      - 4) BHP
      - 5) RPM
      - 6) Performance curves showing pump operation including shutoff head, operating point, and run-out.
      - 7) Performance curves showing overall pump efficiencies.
      - 8) Weight of pump

9) Horsepower rating of pump motor

2. Installation Information: Submit installation drawings and information for pump connections, connecting piping and valves, electrical connections, and auxiliary equipment.

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.

3. Operation and Maintenance 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.

## 1.05 TESTS

### A. Shop Tests:

1. All pumps shall receive a non-witness certified factory performance test.
2. The Manufacturer shall factory test all pumps prior to shipment in accordance with the Hydraulic Institute standards, latest version. Flow rate, total head and Input KW shall be tested and recorded for at least five points on the pump performance curve. Test shall be performed to demonstrate that the pumps meet ANSI/HI 11.6 acceptance grade 1U for all specified points. The five points shall include the points specified in pump performance table in Paragraph 2.02.
3. The Manufacturer shall perform hydrostatic test on the pressure-containing parts in accordance with ANSI/HI 11.6. Test shall be conducted on each pump prior to shipment.
4. The Manufacturer shall perform the following test on each pump prior to shipment from factory:
  - a. Megger motor and pump for insulation breaks or moisture.
  - b. Prior to submergence, the pump shall be run dry and checked for correct rotation.
  - c. Pump shall be run for a minimum of 30 minutes in a submerged condition.
  - d. The pump shall be removed from test tank, meggered immediately for moisture and upper and lower seal unit shall be checked for water intrusion.
  - e. A written certification test report regarding the above tests shall be submitted for approval prior to shipment.
5. 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.

### B. Field Tests:

1. The pumping units will be accepted upon the basis of the certified copies of the shop test and be subject to a four-hour field test of each unit. This test will be for the purpose of determining if each pumping unit will operate under installed conditions within a reasonable degree of correlation with the shop tests.

2. The Contractor shall give at least two (2) weeks' notice to the Owner when the field tests are to be accomplished so that the Owner may have a representative present at the said tests.
3. The field tests shall be made by the Contractor in the presence of and as directed by the Engineer.
4. Field tests shall be made on each pumping unit. During the test, 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 head shown by the pump gauges; 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.
5. Before any pump is rotated, the Contractor shall make certain that no debris is present in suction well, pumps or pipelines. 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 submerged with liquid.
5. 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 units.
6. Field tests shall also conform to Part 3, Paragraph 3.03 as specified hereinafter.

C. Failure of Tests:

1. 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.
2. 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.

## 1.06 PUMP WARRANTY

- A. The pump manufacturer shall warranty the pumps being supplied to the Owner against defects in workmanship and materials for a period of five (5) years under normal use, operation, and service. In addition, the manufacturer shall replace certain parts which become defective through normal use and wear on a progressive schedule of cost for a period of five (5) years. Parts included are the mechanical seal, impeller, pump housing, wear rings, and ball bearings. The warranty shall be in published form and apply to all similar units. The warranty shall be between the Owner and the manufacturer.

## PART 2 - PRODUCTS

### 2.01 SOLIDS HANDLING SUBMERSIBLE SEWAGE PUMPS

#### A. Pump Design:

The pump(s) shall be automatically and firmly connected to the discharge connection, guided by no less than two parallel guide bars extending from the top of the station to the wet well mounted discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal-to-metal, or a resilient seating system with O-ring or profile gasket connection making watertight contact. The entire weight of the pump/motor unit shall be borne by the pump discharge elbow. No portion of the pump/motor unit shall bear on the sump floor directly or on a sump floor mounted stand.

Power and pilot cable supports shall be provided and consist of a wire braid sleeve with attachment loops or tails to connection to the underside of the access frame.

#### B. Pump Construction:

Major pump components shall be of gray cast iron, ASTM A-48, Class 35B, with smooth surfaces devoid of blow holes or other casting irregularities. All exposed nuts or bolts shall be AISI type 304 stainless steel. All metal surfaces coming into contact with the pumped media, other than stainless steel, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with either a polyester resin or a high solids two-part epoxy paint finish on the exterior of the pump.

Sealing design shall incorporate metal-to-metal contact between machined surfaces or a resilient seating system with O-ring or profile gasket. Pump/Motor unit mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile or Viton rubber O-rings. Joint sealing will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific bolt torque limit. Rectangular cross-sectioned rubber, paper or synthetic gaskets that require specific torque limits to achieve compression shall not be considered as adequate or equal. No secondary sealing compounds, elliptical O-rings, grease or other devices shall be used.

D. Cable Entry Seal:

Power cord and control cord shall be triple sealed. The power and control conductor shall be single strand sealed with epoxy potting compound and then clamped in place with rubber seal bushing to seal outer jacket against leakage and to provide for strain pull. A third sealing area shall be provided by a terminal board to separate the cable entry chamber from the motor chamber. Cords shall withstand a pull strain to meet FM requirements.

Insulation of power and control cords shall be type SOOW or W. Both control and power cords shall have a green carrier ground conductor that attaches to motor frame.

E. Motor:

Motor shall be for 3-phase, 230 volts and shall be NEMA B type. Stator winding shall be of the open type with Class H insulation good for 180 degrees Celsius maximum temperature. Winding housing shall be filled with a clean high dielectric oil that lubricates bearings and seals and transfers heat from winding and rotor to outer shell. Air-filled motors, which do not have the superior heat dissipating capabilities of oil-filled motors, shall not be considered equal.

Motor shall have 2 heavy duty ball bearings to support pump shaft and take radial and thrust loads and a sleeve guide bushing directly above the lower seal to take radial load and act as flame path for seal chamber. Ball bearings shall be designed for 50,000 hours B-10 life. Stator shall be heat shrunk into motor housing. A heat sensor thermostat shall be attached to and embedded in the winding and be connected in series with the motor starter contactor coil to stop motor if temperature of winding is more than 30 degrees Celsius. Thermostat to reset automatically when motor cools to safe operating temperature. The common pump, motor shaft shall be of 416 stainless steel.

F. Pilot Cable:

The pilot cable shall be designed specifically for use with submersible pumps and shall be type SUBCAB (Submersible Cable). The cable shall be shielded, multi-conductor type with a chloroprene outer jacket and the tinned copper conductors insulated with ethylene-propylene rubber. The conductors shall be arranged in twisted pairs. The cable shall be rated for 600 Volts and 90°C (194°F) with a 40°C (104°F) ambient temperature and shall be approved by Factory Mutual (FM). The cable length shall be adequate to reach the junction box without the need for splices.

G. Mechanical Seal:

Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The lower seal shall be independent of the impeller hub. The seals shall operate in a lubricant reservoir that hydrodynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating corrosion resistant tungsten-carbide or silicone-carbide seal ring.

Motor shall be protected by 2 mechanical seals mounted in tandem with a seal chamber between the seals. Seal chamber shall be oil filled to lubricate seal face and to transmit heat from shaft to outer shell. A double electrode shall be mounted in the seal chamber to detect any water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control box. This signal shall not stop motor but shall act as a warning only, indicating service is required.

H. Pump Shaft:

Pump and motor shaft shall be a solid continuous shaft. The pump shaft shall be the extension of the motor shaft. Couplings shall not be acceptable. The shaft shall be of sufficient size to transmit full driver output with a maximum deflection of 0.002 inches measured at the lower mechanical seal. The pump shaft shall be of carbon steel ASTM A 572 Grade 50 or stainless steel, 1.4021 (AISI 420) and shall be completely isolated from the pumped liquid.

I. Impeller:

The impeller shall be ductile iron and of the 2-vane solids handling enclosed type. Vane inlet tips shall be carefully rounded to prevent stringy material from catching in vanes. Pump-out vane shall be used in front and back chamber. Impeller shall be dynamically balanced. Impeller shall be driven by stainless steel shaft key and impeller held in place with lock screw and washer. Impeller and motor shall lift off of case as a unit without disturbing discharge piping. Impeller neck shall run in bronze wear ring that is pressed into volute case.

J. Volute:

The volute case shall be cast iron and have a flanged center line discharge. Discharge flange shall be 4-inch standard with bold holes straddling center line. A bronze wear ring shall be pressed into case for guiding impeller neck and to prevent corrosion freeze-up. Wear ring to be held from rotating by locking with stainless steel set screw in end of ring. Minimum inlet and discharge size shall be as specified. The discharge size shall be the minimum size shown on the pump schedule. Proprietary or nonstandard flange dimensions shall not be considered acceptable.

K. Pump Discharge Flange:

The pump discharge-mating flange shall be as shown on the drawings.

2.02 PUMPING REQUIREMENTS

A. Solids handling pumps shall be manufactured by Myers or equal, and shall comply with the following characteristics:

No. of Pumps	Min Shut-off Head (Ft)	Design Point #1		Design Point #2		Design Point #3		Max. Speed (RPM)	Motor HP/Min Each Pump
		Flow (GPM)	Head (Ft)	Flow (GPM)	Head (Ft)	Flow (GPM)	Head (Ft)		
2	55	150	46	350	32	550	24	1760	7.5

B. Power supply shall be 230 volts, 3-Phase, 60 Hz, 4 wire service.

C. Motors shall be 230-volt, 3 phase, 60 Hz.

D. Minimum pump discharge diameter shall be 4 inches.

E. The pumps shall operate throughout the entire operating range with the maximum vibration velocity in inches per second RMS unfiltered, measured in the field, shall be less than the requirements of ANSI/HI 11.6-latest edition.

## 2.03 PUMP ACCESSORIES AND OTHER

- A. All pumps and controls shall be completely wired at the factory for power and control and shall be color-coded. All wiring outside the control cabinet shall be rigid conduit. All accessory equipment shall be permanently wired with suitable disconnecting means and overload protection.
- B. All pump motors shall be provided with stator temperature sensor switches and stator housing leak detector.
- C. The pump/motor assembly shall be suitable for use in Class I, Division 1, Group D hazardous locations.
- D. Contractor shall be responsible for supply of appropriate lengths of lifting chain, submersible power cable, and MG Hi conductor submersible cable.
- E. Access hatches for wet well and valve pit shall be as specified in Section 08370 of these specifications. Dimensions as noted on the Drawings shall be confirmed by the Pump Manufacturer.

## 2.04 GUIDE RAILS

- A. The pumping station shall be furnished with the necessary, stainless steel upper guide holder and level sensor cable holder.
- B. Lower guide holders shall be integral with the discharge connection. Dual guide rails shall be of Schedule 40, welded two-inch minimum diameter, Type 316 stainless steel pipe of the length required by the Drawings. Single guide rails and guide cables are not acceptable.
- C. Intermediate guide brackets shall be furnished and installed so that the maximum length of unsupported guide rails will be no longer than 20 feet, and shall be fabricated of Type 316 stainless steel.
- D. Stainless steel cable holders including the cable hooks shall be fabricated from Type 316 stainless steel plate. Sharp corners and edges shall be ground smooth to prevent abrasion and cutting of electrical cable insulation. The cable holder shall be of sufficient length and strength to provide support for each separate cable, except that the pump power and lift cables may use the same hook position, provided the cables do not foul one another and the lift cable is easily accessed from the hatch opening.

## 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. The Contractor shall also provide from the submersible pump supplier the service of a qualified start-up engineer (factory representative) who has had prior on-site start-up experience to assist in performing start-up, checkout and initial operation services of the pumping units. The start-up engineer shall also instruct the Owner's personnel on the operation and maintenance procedures for the station. Qualified supervisory services, including manufacturers' engineering representatives, shall be provided for a minimum of 4 man-days to ensure 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 of the pump and the alignment of the connection piping. 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. 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. During the field tests, observations shall be recorded of head, capacity, and motor input. All defects or defective equipment revealed by or noted during the tests shall be corrected or replaced promptly at the expense of the Contractor, and if necessary, the tests shall be repeated until results acceptable to the Engineer are obtained. The Contractor shall furnish all labor, piping, equipment, and materials necessary for conducting the tests. A report of the field tests shall be submitted to the Engineer.
- B. After installation of the pumping equipment, and after inspection, operation, testing and adjustment have been completed by the manufacturer's representative, each pump shall be given a running test in the presence of the Engineer, such tests as necessary to indicate that the pumps, motors, and drives generally conform to the efficiencies and operating conditions specified and its ability to operate without vibration or overheating. The pumps and motors shall operate at the specified capacities in the range of heads specified without undue noise or vibration. Any undue noise or vibration in the pumps or motors, which is deemed objectionable by the Engineer, will be sufficient cause for rejection of the units.
- C. 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.
- D. 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 4 person-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 16050 - BASIC ELECTRICAL MATERIALS AND METHODS**

### **PART 1 - GENERAL**

#### **1.01 REQUIREMENT**

- 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 Basic Electrical Materials and Methods and General Requirements, the above mentioned documents shall overrule this section. The Basic Electrical Materials and Methods are intended as a supplement to the above mentioned documents.
- B. 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.
- C. 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 SCOPE OF WORK**

- A. Work included in this section of the Specifications shall include the furnishing of all labor, material, tools, approvals, utility connection fees, excavation, backfill, and other equipment necessary to install the electrical system as shown on the Contract Drawings and as specified herein.
- B. It also includes installation and connection of all electrical utilization equipment included in this Contract but furnished by other contractors or suppliers.
- C. It is the general intent that all motors shall be furnished with the particular object of equipment it drives.
- D. The Contractor shall furnish and install all conduit, wire, disconnect switches and miscellaneous material to make all electrical connections to all items of utilization equipment or wiring devices except as otherwise specified.
- E. The electrical design depicted in the Contract Drawings, is a concept. As the Contractor and Subcontractors layout the job in the field and submit Shop Drawings, it is likely that minor changes will need to be made to the layout, field control wiring, or branch circuits/feeders, from what is shown on the Contract Drawings. These changes will be indicated by Engineer review comments on Shop Drawings or issuance of field orders. It is the Contractors job to coordinate these changes among Subcontractors and equipment vendors, to assure a complete and fully operational electrical system at completion of construction. The Contractor shall not layout the job from the Contract Drawings, but rather from accepted Shop Drawings. Electrical rough-in shall be done based on templates provided from the electrical switchgear and MCC manufacturers showing allowable conduit entry locations. Do not submit electrical panelboard Shop Drawings, Motor Control Shop Drawings, Switchboard or Switchgear Shop Drawings until all utilization equipment submittals have been made and accepted. Short Circuit, Coordination and Arc Flash studies must be accepted prior to submittal of Shop Drawings for panelboards, MCC's, switchboards or switchgear.
- F. The Contractor shall perform the work of this contract in a "neat and workmanlike manner" as required by NEC Article 110.12, and further delineated in ANSI/NECA 1, latest edition, "Standard for Good Workmanship in Electrical Construction".

- G. Equipment connections shall be made with flexible or rigid conduit as required. Controllers for motors, disconnect switches, and all control, protective and signal devices for motor circuits, except where such apparatus is furnished mounted and connected integrally with the motor driven equipment, shall be installed, connected and left in operating condition. The number and size of conductors between motors and control or protective apparatus shall be as required to obtain the operation described in these Specifications, and/or by the Contract Documents, and/or as shown in manufacturer furnished, Engineer reviewed Shop Drawings.
- H. All devices and items of electrical equipment, including those shown on the Contract Drawings but not specifically mentioned in the Specifications or those mentioned in the Specifications but not shown on the Contract Drawings, are to be furnished under this section of the specifications. Any such device or item of equipment, if not defined in quality, shall be equal to similar Equipment and/or devices specified herein.
- I. All devices and items of equipment mentioned in this section of the Specifications whether electrical or not or whether furnished under this or other Division of the Specifications, shall be installed under this Division of the Specifications, unless specifically indicated otherwise.
- J. Where wiring diagrams are not shown on the Contract Drawings, they are to be provided by the supplier of the equipment served and such diagrams shall be adhered to except as herein modified.
- K. The following is a list of items that may not be defined clearly on the Contract Drawings or in other parts of these Specifications. The list is meant to be an aid to the Contractor and is not necessarily a complete list of all work to be performed under this Contract:
  - 1. Connect all motors and accessories furnished by equipment suppliers.
  - 2. Furnish, install, and connect all motor controls.
  - 3. Furnish, install, and connect all electrical conduit, duct, and cables.
  - 4. Furnish, install, and connect all power distribution equipment.
  - 5. Furnish and install standby power equipment.

**1.03 SHOP DRAWINGS, DESCRIPTIVE LITERATURE, INSTALLATION, OPERATION, AND MAINTENANCE INFORMATION**

- A. Shop Drawings including descriptive literature and/or installation, operation and maintenance instructions shall be submitted per Section 01300.
- B. Shop Drawings shall be submitted on the following materials specified in this Division:
  - 1. Conduit - all types and sizes, including liquid-tight flexible.
  - 2. Boxes - all types and sizes.
  - 3. Coal tar epoxy paint.
  - 4. Wiring devices.
  - 5. Device plates.
  - 6. Metal framing system (Strut type channel).
  - 7. Conduit fittings, expansion joints, support hardware.

- 8. Motor control equipment - including individually mounted items.
  - 9. Power distribution equipment - including individually mounted items.
  - 10. Wire - all types and sizes.
- C. The Engineer reserves the right to make modifications to motor control and power distribution equipment ratings after Shop Drawing review, if the Shop Drawings are submitted prematurely (prematurely meaning submitted before all utilization equipment has been reviewed and accepted). Cost of modifications shall be the Contractor's responsibility.

**1.04 SYMBOLS AND ABBREVIATIONS**

- A. The symbols and abbreviations general follow standard electrical and architectural 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. The Contractor shall verify door swings to see that light switches are located properly.

**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 the current NEC or KBC, 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. National Electrical Safety Code	NESC
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. Insulated Cable Engineers Association, Inc.	ICEA
10. Illuminating Engineering Society of North America	IES
11. Institute of Electrical and Electronic Engineers, Inc.	IEEE
12. International Society of Automation	ISA
13. Certified Ballast Manufacturers Association	CBM

14. American National Standards Institute, Inc.	ANSI
15. Anti-Friction Bearing Manufacturers Association, Inc.	AFBMA
16. Joint Industry Council	JIC
17. American Society of Heating, Refrigerating & Air Conditioning Engineers, Inc.	ASHRAE
18. Federal Communications Commission	FCC
19. American Society for Testing and Materials	ASTM
20. American Wood Preservers Association	AWPA
21. Rural Electrification Association	REA

#### **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. The Contractor shall notify the electrical inspector in writing, immediately upon notice to proceed, and a copy of the notice shall be submitted to the Engineer.
- B. At the time of completion of the project, there shall be furnished to the Owner a certificate of compliance, from the agency having jurisdiction pursuant to all electrical work performed. The Engineer shall also receive a photostatic copy.
- C. All costs incurred by the Contractor to execute the above mentioned requirements shall be paid by the Contractor at no extra cost to the Owner.
- D. All permits necessary for the complete electrical system shall be obtained by the Contractor from the authorities governing such work. For further information, see Division 1.

#### **1.08 STORAGE**

- A. All work, equipment, and materials shall be protected against dirt, water, or other injury during the period of construction.
- B. Sensitive electrical equipment such as light fixtures, motor starters, controls, and panelboards, delivered to the job site, 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. Electrical equipment other than boxes and conduit shall not be installed until the structure is under roof with doors and windows installed.
- C. The Contractor shall not store submersible pump units in the wetwell. If it is absolutely necessary to do so, the open power cable ends are to be suspended above the maximum flood elevation or maximum expected water level. If not stored in this manner, the Contractor may be called upon to replace the pump motors and cables with new units to ensure that water has not penetrated the cable and entered the motor housing.

## **1.09 MATERIALS**

- A. All materials used shall be new and at least meet the minimum standards as established by the NEC and/or National Electrical Manufacturers Association (NEMA). 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 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 Contractor's failure to give such notice, he/she may be required to correct work and/or furnish items omitted without additional cost. Further requirements on this subject may be found in the General Requirements, Division 1.
- 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. Date of acceptance shall be considered to be the date on which all "punch list" items are completed ("punch list" is defined to be the written listing of work that is incomplete or deficient that must be finished or replaced/repared before the Contractor receives final payment).
- 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 and/or equipment manufacturers prior to placing power on the equipment.
- C. Tests may be performed by the Engineer to determine integrity of insulation on wiring circuits selected by the Engineer at random.
- D. Cost of utilities for testing done prior to beneficial occupancy by the Owner shall be borne by the Contractor.

#### **1.13 CLEANUP**

- A. Cleanup shall be completed as soon as possible after the electrical installation is complete. All light fixtures, outlets, switches, starters, motor control centers, disconnect switches and other electrical equipment shall be free of shipping tags, stickers, etc. All painted equipment shall be left free of scratches or other blemishes, such as splattered or blistered paint, etc. All light fixture diffusers shall be clean and the interior of all motor controls, etc., shall be free of dust, dirt, wire strippings, etc. Surplus material, rubbish, and equipment resulting from the work shall be removed from the job site by the Contractor upon completion of the work.
- B. During construction, cover all Owner equipment and furnishings subject to mechanical damage or contamination in any way.

#### **1.14 CUTTING AND PATCHING**

- A. Cutting and patching shall be held to an absolute minimum and such work shall be done only under the direction of the Engineer or Owner. The Contractor shall be responsible for and shall pay for all openings that may be required in the floors or walls, and he shall be responsible for putting said surfaces back in their original condition. Every attempt shall be made to avoid cutting reinforcing steel bars when an opening is required in a reinforced concrete wall or floor slab.

#### **1.15 EXCAVATION AND BACKFILL**

- A. Excavation
  - 1. Excavation for conduits shall be of sufficient width to allow for proper jointing and alignment of the type conduit used. Conduit shall be laid in straight lines between pull boxes and/or structures unless otherwise notes on the Contract Drawings. The cost of solid rock excavation shall be included in the lump sum bid with no extra pay allowed (unclassified).
- B. Encasement/Backfill
  - 1. All buried conduits shall be concrete encased. Backfill over the ductbank may contain rocks but must be mixed with sufficient earth to fill all voids.

#### **1.16 OPENINGS**

- A. It is the Contractor's responsibility to leave openings to allow installation of the complete, operational electrical system. Openings required but not left shall be cut as outlined under cutting and patching. The Contractor shall coordinate all holes and other openings with necessary diameters for proper firestopping.

### **1.17 POWER COMPANY COORDINATION**

- A. The Contractor is responsible for coordinating all activities onsite by the power company.
- B. All power company metering equipment shall be electrically located "upstream" of any manual/automatic transfer equipment on projects requiring onsite emergency power generation equipment.
- C. Any special provisions required by the serving electrical utility shall be as outlined on the Contract Drawings or as advised by the utility at the time of construction, and work required by these special provisions shall be executed with no extra cost to the Owner.

### **1.18 TEMPORARY ELECTRICAL POWER**

- A. The Contractor shall be responsible for providing temporary electrical power as required during the course of construction and shall remove the temporary service equipment when no longer required. Temporary power is also addressed in Division 1.

### **1.19 OVERCURRENT PROTECTION**

- A. Circuit breakers or fused switches shall be the size and type as written herein and shown on the Contract Drawings. Any additional overcurrent protection required to maintain an equipment listing by an authority having jurisdiction shall be installed by the Contractor at no extra cost to the Owner.
- B. The Contractor shall submit to the Engineer actual nameplate data from motors shipped to the site, stating motor identification as well as characteristics. Overload relay thermal unit selection tables shall accompany the motor data. The Engineer will select thermal unit sizes from this data for use by the Contractor in ordering proper thermal units.

### **1.20 MAINTAINING CONTINUOUS ELECTRICAL SYSTEM AND SERVICE**

- A. Existing service(s) continuity shall be maintained at all times. In no way shall the 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
- B. When additions and taps to existing service(s) require electrical 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, cuts shall be performed on premium time. If performed at night, requiring a general outage, the Contractor shall furnish an auxiliary source of light and power as required. Under no circumstances shall an electrical outage of any duration be initiated until the Owner and Engineer have concurred, and as far as possible in advance.

### **1.21 GROUNDING AND BONDING**

- A. All metallic conduit, cabinets, equipment, and service shall be grounded in accordance with the latest issue of the National Electrical Code. All supporting framework and other metal or metal clad equipment or materials which are in contact with electrical conduit, cable and/or enclosures, shall be properly grounded to meet the code requirements.

### **1.22 RELATED SPECIFICATION DIVISIONS**

- A. The following divisions contain Specifications on utilization equipment, equipment accessories, and procedures related to execution of the electrical work, and are included here for the Contractor's information. Bids shall still be based on complete Contract Documents.

Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract

Division 1 - General Requirements  
Division 11 - Equipment  
Division 13 - Special Construction  
Division 17 - Instrumentation

### 1.23 SERVICE ENTRANCE

- A. Conductors and terminations for service entrances shall be furnished and installed by the Contractor. Voltage, phase, and number of wires shall be as shown on the Drawings. Clearances for overhead entrance wires shall be per power company, NEC, and NESC requirements.
- B. Any details not shown on the Drawings or written in the Specifications pertaining to the service entrance shall be per power company requirements. It is the Contractor's responsibility to contact the utility prior to bidding and obtain any special requirements or costs they will be imposing. Those costs shall be included in the bid.

### 1.24 CONTRACTOR LICENSING

- A. The Contractor performing the electrical work on this project shall be locally licensed, if required by local law or ordinance. If the Contractor has passed the State test, it may not be necessary to meet local testing requirements. It shall be the Contractor's responsibility to investigate these requirements and comply with same.

### 1.25 ANCHORING/MOUNTING

- A. Electrical conduits and/or equipment shall be rigidly supported. Anchors used shall be metallic expansion type, or if appropriate to prevent spalling concrete, epoxy set type. Plastic or explosive type anchors are prohibited.
- B. All supports shall be consistent with the latest edition of the KBC and ASCE 7.

### 1.26 ELECTRICAL COMPONENT MOUNTING HEIGHTS

- A. Unless otherwise indicated, mounting height for components shall be as defined herein. In cases of conflicts with architectural or structural aspects, the components may be relocated. If an indicated height conflicts with a code requirement, the code shall govern.
- B. Mounting heights are given from finished floor elevation to the centerline of the component, unless otherwise noted.

	Component	Height	Comments
1.	Push-button or control stations	4'-0"	
2.	Top of panelboards or control panels	6'-6"	Maximum (except for handicapped areas)
3.	Top of local motor controller	6'-0"	Maximum
4.	Top of local disconnect switch	6'-0"	Maximum

In situations where there appears to be a conflict with Americans with Disabilities Act (ADA) legislation, utilize the ADA requirements.

### 1.27 HAZARDOUS AREA CLASSIFICATIONS

- A. The following table identifies the applicable hazardous areas for this project, and the classifications for each. All equipment used in these areas shall be UL listed for the application, and all wiring methods shall be in accordance with Chapter 5 of the National Electrical Code. All conduits to these spaces from non-hazardous areas shall be properly sealed.

Location	Area Classification	Extent of Hazardous Area
Wetwell	Class I, Division 1, Group D	Entire Wetwell
Valve Vault	Class I, Division 2, Group D	Entire Vault

Note: These ratings are based on no continuous ventilation and some may be rerated if continuous ventilation is provided (per NFPA 820).

## 1.28 RECEIPTS

- A. Some sections of the Specifications call for equipment, materials, accessories, etc. to be provided 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 provided.

## 1.29 POWER SYSTEM STUDIES

### A. General

1. The Contractor shall provide Short Circuit Studies, Protective Device Evaluation Studies, Protective Device Coordination Studies, and Arc Flash Studies performed by a professional registered electrical engineer currently registered in the State of Kentucky for the entire electrical system. The studies shall be performed in accordance with 399-1997, IEEE Recommended Practice for Industrial and Commercial System Power Analysis (IEEE Brown Book). The studies shall be submitted to the Engineer prior to receiving final approval of the distribution equipment shop drawings and/or prior to release of equipment for manufacture. If formal completion of the studies may cause delay in equipment manufacture, approval from the Engineer may be obtained for a preliminary submittal of sufficient study data to insure that the selection of device ratings and characteristics will be satisfactory.
2. The studies shall include all portions of the electrical distribution system from the utility company protective devices, the normal and standby power sources down to and including the 480 volt feeder protective devices for each feeder. The study shall include all low and medium voltage switchgear, MCCs, and panelboards. System connections and those which result in maximum fault conditions shall be adequately covered in the study.
3. In the event that the short circuit study requires a higher interrupting and/or withstand rating of equipment than that which is indicated in the Contract Documents, the Contractor shall furnish and install the equipment as required based on the study with no extra cost to the Owner.
4. In the event that the protective device coordination study indicates that different settings or equipment is required than that which is specified, the Contractor shall furnish and install the equipment based on the study with no extra cost to the Owner.

### B. Data Collection for the Studies

1. The Contractor shall provide the required data for preparation of the studies. The preparer of the studies shall furnish the Contractor with a listing of the required data immediately after award of the Contract.
2. The Contractor shall expedite collection of the data to assure completion of the studies as required for final approval of the distribution equipment shop drawings and/or prior to release of the equipment for manufacture.

### C. Short Circuit Study and Protective Device Evaluation Study

1. The short circuit study shall be performed with the aid of a digital computer program and shall be in accordance with the latest editions of IEEE Std. 399 and IEEE Std. 141.
2. The study input data shall include the utility company's short circuit contribution, resistance and reactance components of the branch impedances, the X/R ratios, base quantities selected, and other source impedances.
3. Short circuit close and latch duty values and interrupting duty values shall be calculated on the basis of assumed three-phase bolted short circuits at each bus, switchgear, medium and low-voltage motor control center, distribution panelboard, pertinent branch circuit panel and other significant locations through the system. The short circuit tabulations shall include symmetrical fault currents, and X/R ratios. For each fault location, the total duty on the bus, as well as the individual contribution from each connected branch, shall be listed with its respective X/R ratio.
4. A protective device evaluation study shall be performed to determine the adequacy of circuit breakers, molded case switches, automatic transfer switches, and fuses by tabulating and comparing the short circuit ratings of these devices with the calculated fault currents. Appropriate multiplying factors based on system X/R ratios and protective device rating standards shall be applied. Any problem areas or inadequacies in the equipment due to short circuit currents shall be promptly brought to the attention of the Engineer.
5. All equipment furnished shall meet the requirements of this study, with no extra cost to the Owner.

### D. Protective Device Coordination Study

1. A protective device coordination study shall be performed to provide the necessary calculations and logic decisions required to select or to check the selection of power fuse ratings, protective relay characteristics and settings, ratios and characteristics of associated current transformers, and low voltage circuit breaker trip characteristics and settings.
2. The coordination study shall include all low voltage classes of equipment from the utility company service protective devices down to and including the main circuit breakers of motor control centers. The phase and ground overcurrent protection shall be included as well as settings of all other adjustable protective devices.
3. The time-current characteristics of the specified protective devices shall be drawn on log-log paper. The plots shall include complete titles, representative one-line diagram and legends, significant motor starting characteristics, complete parameters of transformers, complete operating bands of low voltage circuit breaker trip curves and fuses. The coordination plots shall indicate the types of protective devices selected, proposed relay taps, time dial and instantaneous trip settings, transformer magnetizing inrush and ANSI transformer withstand parameters, cable thermal overcurrent withstand limits and significant symmetrical and asymmetrical fault currents. All restrictions of the National Electrical Code shall be adhered to and proper coordination intervals and separation of characteristic curves shall be maintained. The coordination plots for phase and ground protective devices shall be provided on a system basis. A sufficient number of separate curves shall be used to clearly indicate the coordination achieved.
4. The selection and settings of the protective devices shall be provided separately in a tabulated form listing circuit identification, IEEE device number, current transformer ratios and connections, manufacturer and type, range of adjustment and recommended settings. A tabulation of the recommended power fuse selection shall be provided for the medium voltage fuses where applied in the system. Any discrepancies, problem areas, or inadequacies shall be promptly brought to the attention of the Engineer.

#### E. Arc Flash Hazard Analysis

1. An Arc Flash Hazard Analysis shall be performed with the aid of a digital computer program in accordance with IEEE Std. 1584, "IEEE Guide For Performing Arc Flash Hazard Calculations", NFPA 70E, and OSHA 29-CFR, Part 1910 Subpart S.
2. Arc Flash Warning Labels and Bus Detail Sheets shall be produced for each bus. Labels shall be printed in color on adhesive backed labels. Labels shall be attached to the doors of the equipment. Each label and detail sheet shall list the following:
  - a. Bus name
  - b. System operating voltage
  - c. Date of issue
  - d. Flash hazard protection boundary
  - e. Limited approach boundary
  - f. Restricted boundary
  - g. Prohibited boundary
  - h. Incident energy level
  - i. Required personal protective equipment class

In addition, each Bus Detail Sheet shall list the following:

- a. Upstream Protective Devices Names, Type and Settings
3. Arc Flash Evaluation Summary Sheets shall be produced. Summary sheets shall list the following:
    - a. Bus name
    - b. Upstream protective device name, type, and settings
    - c. Bus line-to-line voltage
    - d. Bus bolted fault
    - e. Protective device bolted fault current
    - f. Arcing fault current
    - g. Protective device trip / delay time
    - h. Breaker opening time
    - i. Solidly grounded column
    - j. Equipment type
    - k. Gap
    - l. Arc flash boundary

- m. Working distance
  - n. Incident energy
  - o. Required personal protective equipment class
4. Analyze the short circuit, protective device coordination, and arc flash calculations and highlight any equipment that is determined to be underrated or causes an abnormally high incident energy calculation. Propose approaches to reduce the energy levels. Proposed major corrective modifications will be taken under advisement by the Engineer and the Contractor will be given further instructions.

**F. Study Report**

1. The results of the power system studies shall be summarized in a report. The report shall be submitted to the Engineer. The report shall be submitted for review and acceptance prior to submittals for medium voltage switchgear, medium voltage motor control equipment, low voltage switchgear and switchboards, motor control centers, variable frequency drives, panelboards, and similar electrical equipment.
2. The report shall include the following sections:
  - a. Description, purpose, basis and scope of the study and a detailed single line diagram with "nodes" cross-referenced to the calculated values tabulated in the study report of that portion of the power system which is included within the scope of the study.
  - b. Tabulations of circuit breaker, fuse, and other protective device ratings versus calculated short circuit duties and commentary regarding same.
  - c. Protective device time versus current coordination curves, tabulations of relay and circuit breaker trip settings, fuse selection, and commentary regarding same.
  - d. Fault current calculations including a definition of terms and guide for interpretation of computer printout.
3. Prior to commencing the work, the preparer the studies shall meet with the testing firm that will do the relay field testing and the Owner's representative at the site for a walk through of the facility to insure that existing conditions are taken into account.
4. The study shall include a detailed explanation of all software programs and procedures used to arrive at the calculated values, settings, and drawings (e.g. single line diagrams) showing fault values at all busses.

**PART 2 - PRODUCTS (NOT USED)**

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 16060 - SECONDARY GROUNDING**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. Grounding shall be done in accordance with the NEC, as described in these Specifications, and as shown on the Contract Documents.

### **PART 2 - PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Grounding equipment shall be Cadweld, T&B Blackburn, ITT Weaver, Copperweld Bimetallics Group, or equal.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION/APPLICATION/ERECTION**

- B. The ground system shall be continuous with all structures on a common ground. This can be accomplished by bonding all conduits together and bonding to the ground bus at each motor control center. Bonding jumpers shall be required at all pull boxes, and at all motor casings. A separate grounding conductor shall be pulled in all conduits in addition to wire counts shown on Drawings.

END OF SECTION

## **SECTION 16070 - SUPPORTING DEVICES**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. All electric equipment shall be rigidly mounted, and installed using supporting devices as indicated on the Contract Drawings, as required by the work, and described herein.

### **PART 2 - PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS**

- A. "Kindorf," "Unistrut," or equal.

#### **2.02 MATERIALS**

- A. All mounting brackets and strut shall be aluminum. Fasteners used to mount equipment shall be stainless steel.
- B. Aluminum support members shall not be installed in direct contact with concrete. Stainless steel or non-metallic "spacers" shall be used to prevent contact of aluminum with concrete.

### **PART 3 - EXECUTION**

#### **3.01 ANCHORING CABINETY**

- A. All free standing equipment shall be anchored to its foundation using expansion bolts of the size and number recommended by the equipment manufacturer.

#### **3.02 SEISMIC CONSIDERATIONS**

- A. Where indicated, seismic restraints shall be provided for electrical equipment.

END OF SECTION

## **SECTION 16075 - ELECTRICAL IDENTIFICATION**

### **PART 1 - GENERAL**

#### **1.01 EQUIPMENT LABELING**

- A. All starters, feeder units in panelboards, switchboards, disconnects, instruments, etc. shall be marked to indicate the motor, outlet, circuit they control, or variable monitored. Marking is to be done with engraved laminated nameplates and shall bear the designation shown on the Contract Drawings where this information is given. Nameplates shall be fastened to equipment with stainless steel screws, minimum of one each side. In no way shall the installation of mounting screws void the NEMA enclosure rating of the equipment in which they are installed. If there are more than one identical unit, they shall be given consecutive numbers or other descriptions as designated by the Engineer. Nameplate background color shall be white, with black engraved letters, unless otherwise noted.
- B. Branch circuits in lighting panels shall be typed on a card suitable for the card frame furnished with the panel. The card shall bear the panel designation listed on the Contract Drawings where this information is given, as well as indicate what each circuit controls.
- C. Motor control panels, individual mounted starters, panelboards, and disconnect switch shall be labeled with vinyl self-adhesive signs that warn of "High Voltage" (state the specific voltage). Main service entrance conduits to a building, where exposed, shall be labeled with the voltage of the service they carry. Other major equipment such as transformers, transfer switches, generator sets, pump control panels, etc., shall be labeled as such. The type of labels to be used shall have orange as the basic color to conform with OSHA requirements, letters shall be black. The labels shall be of proper size to fit flatly on the surface of the enclosure to make for a neat appearance and not interfere with the operating function of the device it is attached to. These labels shall be as manufactured by the Brady Identification Systems Division, Safety Sign Company, or equal.

### **PART 2 - PRODUCTS (NOT USED)**

### **PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## **SECTION 16100 - ELECTRICAL DEMOLITION**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. Furnish all labor, equipment, materials, and supplies necessary for and reasonably incidental to demolition of work hereinafter specified, indicated on drawings, required or intended for completion of the work.
- B. Major items included under demolition work include, but are not limited to:
  - 1. Existing pump circuit breakers.
  - 2. Existing pump overload relays.
  - 3. Existing pump station service disconnect.
  - 4. Miscellaneous conduit, wiring, and accessories related to the above items.
- C. Repair those areas damaged under demolition work once new services and systems have been installed.

#### **1.02 SUBMITTALS**

- A. No submittals are anticipated under this Section.

#### **1.03 JOB CONDITIONS**

- A. Provide adequate protection to persons and property. Execute work in such a manner as to avoid interference with required operations and use of or passage to and from adjoining buildings and facilities.
- B. Demolition work of equipment necessary for the operation of the power and communication systems to be coordinated with the installation of new equipment. The demolition and installation work is to be done as quickly as possible to minimize any burdens on the Owner.

#### **1.04 CONDITION OF EXISTING FACILITIES**

- A. Contractor shall verify the areas, conditions and features necessary to tie new work into existing construction. This verification shall be done prior to submittal of shop drawings, fabrication or erection, construction or installation. The Contractor shall be responsible for the accurate tie-in of the new work to existing facilities.

### **PART 2 - PRODUCTS (Not Applicable)**

## **PART 3 - EXECUTION**

### **3.01 SCHEDULES**

- A. Schedule all demolition work as to cause minimal interference with existing facility operations. Refer to Specification Divisions 0 and Division 01 for additional requirements.
- B. Obtain prior approval of the Owner at least seven days in advance before starting demolition of any equipment. Under no circumstances will demolition work be approved until new equipment is ready for installation.

### **3.02 PREPARATION**

- A. Disconnect or arrange for disconnection of utility service connections to equipment and areas to be demolished before starting demolition.
- B. Preserve in operating condition all active utilities transversing the project site. Protect all equipment that remains (electrical and mechanical) during demolition, and repair all damage caused by this work to satisfaction of Engineer.

### **3.03 APPLICATION**

- A. Maintain the continuity of the existing branch circuits serving all existing light fixtures that are to remain, whether indicated or not on the drawings.
- B. All existing walls, ceilings, floor slabs, etc., being cut or damaged under this Contract shall be patched back to match existing by General Contractor.
- C. All existing switchgear, lighting fixtures, receptacles, control equipment and switches being removed shall be disposed of by the Contractor. Refer to 16050 for more details.
- D. Remove exposed ground conductor back to source or point of contact with slab. Cut conductor off below slab and abandon with hole being patched back to match existing surface (floor, wall or ceiling). If reusable, simply disconnect ground conductor.
- E. Conduits, wire and wood products that are not salvageable shall be disposed of legally.
- F. Primary work shall be completed with all facilities kept in service or with short periods of scheduled momentary outages.
- G. Holes in slabs or into classified areas to be patched to provide a gas, vapor and watertight barrier.

### **3.04 STORAGE AND HANDLING**

- A. The Owner reserves the right to save materials that are a part of the demolition work, and the Contractor shall turn over and store any such materials at the Owner's direction. Specifically, the existing SCADA RTU and Yagi antenna shall be salvaged for reuse by the Owner. LFUCG will provide a SCADA unit and antenna from existing inventory to the Contractor for installation at the new replacement pump station.
- B. All materials not turned over to Owner shall become property of Contractor and removed promptly from project site at no additional cost to the Owner. Any permits or fees for disposal shall be the responsibility of the Contractor.

**3.05 CLEANUP**

- A. Burn no materials or debris on premises.
- B. Remove from site rubbish and debris found thereon and, except as otherwise specified, materials and debris resulting from work of demolition. Leave site in safe and clean condition.

**END OF SECTION**

## **SECTION 16120 - CONDUCTORS AND CABLES**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. All wire and cable shall conform to the latest requirements of the NEC and shall meet all ASTM/UL specifications. Wire and cable shall be new; shall have size, grade of insulation, voltage rating and manufacturer's name permanently marked on the outer covering at regular intervals. Complete descriptive literature shall be submitted to the Engineer for review and acceptance prior to installation.
- B. Building wire #12 - #1 shall be applied based on a 60 degree Celsius temperature rise. Building wire larger than #1 may be applied at its 75 degree Celsius temperature rise.

#### **1.02 DELIVERY, STORAGE AND HANDLING**

- A. Wire and cable shall be suitably protected from weather and damage during storage and handling and shall be in first class condition when installed.

### **PART 2 - PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Building Wire (types "THWN" and "THW"-cu.) – "Southwire," "Collyer," "American," "Carol," or equal.
- B. Control Cables (Shielded or unshielded) 600V max. – "Belden," "Eaton-Dekoron," "Okonite," or equal.
- C. Instrumentation Cables (Shielded) 600V mx. – "Eaton-Dekoron," "Manhattan," "American," "Belden," "Okonite," or equal.

#### **2.02 MATERIALS**

##### **A. General**

1. In general, all conductors shall be 98 percent conductive, annealed copper unless otherwise noted on the Contract Drawings.
2. Conductors shall be type THW or THWN insulation. Conductor size shall be AWG (American Wire Gauge) Standard. Minimum conductor size shall be AWG number 12 except branch circuits in excess of 75 feet from panel to first outlet not smaller than no. 10 AWG. Minimum voltage rating shall be 600 volts. Conductors for small power may be solid (i.e. lighting, receptacles), but conductors for control work shall be stranded.
3. Conductors with high temperature rated insulations and special construction shall be used where required in connecting to light fixtures or appliances that have special requirements.

## PART 3 - EXECUTION

### 3.01 INSTALLATION/APPLICATION/ERECTION

#### A. General

1. Conductors shall be continuous from outlet to outlet and no splices shall be made except accessible in junction or outlet boxes. Wire connectors of insulating material or solderless pressure connectors, properly taped, shall be used for all splices in wiring, wherever possible.
2. Conductors shall be color coded in accordance with the following schedule:

	480/277V 3 Phase	208/240V 3 Phase	120/240, Single Phase
Phase A	Brown	Black	Black
Phase B	Orange	Red	Red
Phase C	Yellow	Blue	
Neutral (Grounded)	White or Light Gray	White or Light Gray	White or Light Gray
3-Way Tracers			Blue
Grounding	Green	Green	Green
Remote Energized Conductors (Control)			Yellow
Control	Std. Code	Std. Code	

3. Conductors shall be pulled into raceways in strict accordance with manufacturer's recommendations.
4. Ample slack conductors shall be allowed at each terminal point, and pull or junction box, to permit installation with ease and without crowding.
5. All conductors terminating at terminal blocks shall be identified with numbers and/or letters identical to circuit or control identification.
6. No conductors shall be drawn into conduits until all work which may cause wire or cable damage is completed. Wire pulling shall be accomplished utilizing machinery and accessories intended for the purpose.
7. All connections and splices shall be made in accordance with conductor manufacturer's recommendations, and as written herein.
8. In general, feeder sizes shown are based on no more than three current carrying conductors in a conduit. Multiple small branch circuit feeders may be combined in a common conduit, provided conductors are derated in accordance with NEC article 310-15.
9. Unless otherwise specifically indicated, neutrals may not be shared.

## B. Feeders

1. All feeders are of the secondary type, below 600 volts, unless otherwise noted. Secondary feeder voltage shall be 480 volt, as noted in the Contract Drawings. Three phase, 4 wire for power and 208/120 volt, 3 phase, 4 wire for general lighting, unless otherwise noted. The Contractor shall furnish and install all feeders from the distribution center(s) to each of the other structures/subpanels as shown on the Contract Drawings.
2. Wire shall be factory color coded for each phase and neutral, with green used for the ground conductor. As far as practical, all feeders shall be continuous from origin to panel termination without running splices in intermediate pull boxes.

## C. Submersible Pump Power Cable

1. Power cables for submersible pumps shall be of the extra hard usage type suitable for submerged duty and able to withstand common corrosive agents found in water and wastewater. They shall be provided with high grade non-magnetic stainless steel relief cable grips installed at the pump end and high grade non-magnetic stainless steel support cable grips anchored to the wet well structure where they enter the wet well. The strain relief and support cable grips shall be as manufactured by Kellems, Slater/Flexcor, or equal. Non-metallic corrosion resistant grips may be used in lieu of stainless steel if available for the cable size.

## 3.02 FIELD QUALITY CONTROL

### A. Testing

1. All testing shall be performed in accordance with the requirements of the General Conditions and Division 1. The following tests are required:
  - a. Witness Shop Tests
    - 1) Not required.
  - b. Shop Test
    - 1) Cable and wiring shall be tested in accordance with the applicable ICEA Standards. Wire and cable shall be physically and electrically tested in accordance with the manufacturer's standards.
  - c. Field Tests
    - 1) Field testing shall be done in accordance with the requirements specified in the General Conditions, Division 1, and NETA acceptance testing specifications.
    - 2) After installation, all wires and cables shall be tested for continuity. Testing for continuity shall be "test light" or "buzzer" style.
    - 3) After installation, all wires and cables shall be tested for insulation levels. Insulation resistance between conductors of the same circuit and between conductor and ground shall be tested. Testing for insulation levels shall be as follows:
      - a) For 600V power and control cable, apply 1,000 VDC from a Megohmmeter for one (1) minute for all 600V wires and cables installed in lighting, control, power, indication, alarm and motor feeder circuits. Resistance shall be no less than 100 Megohms.

- b) 600V instrumentation signal cable shall be tested from conductor to conductor, conductor to shield, and conductor to ground using a Simpson No. 260 volt-ohmmeter, or approved equal. The resistance value shall be 200 Megohms or greater.
2. Low voltage wires and cables shall be tested before being connected to motors, devices or terminal blocks.
3. Voltage tests shall be made successively between each conductor of a circuit and all other conductors of the circuit grounded.
4. If tests reveal defects or deficiencies, the Contractor shall make the necessary repairs or shall replace the cable as directed by the Engineer, without additional cost to the Owner.
5. All tests shall be made by and at the expense of the Contractor who shall supply all testing equipment. Test reports shall be submitted to the Engineer.

END OF SECTION

## **SECTION 16130 - RACEWAYS**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. This section of the Technical Specifications includes all raceways for accommodation of electrical conductors, communications conductors, sleeves for underground electrical installations, conduit stubs for future installations, fittings therefore and accessories.
- B. All raceways shall be marked with the manufacturer's name or trademark as well as type of raceway and size. This marking shall appear at least once every 10 feet and shall be of sufficient durability to withstand the environment involved. All raceways shall be furnished and installed as outlined under Part 3 of this Specification.
- C. All raceways and fittings shall be painted to match existing or surrounding surfaces except in mechanical spaces.

### **PART 2 - PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS**

##### **A. Tubular Raceways**

- 1. Steel, Galvanized, Rigid, Heavy-Wall, Threaded – "Wheatland Tube Co.," "Triangle," "Allied Tube & Conduit Corp.," or equal.
- 2. Plastic (PVC); Type A (Thin Wall); Type 40 (or Schedule 40); Type 80 (or Schedule 80) (Heavy -Wall) – "Carlton," "Cantex," or equal.
- 3. Flexible Metal Conduit – "AFC," "Southwire," or equal.
- 4. Liquidtight Flexible Metal Conduit – "Carol Cable Co., Inc.," "Superflex," "OZ Gedney," or equal.
- 5. Liquid-Tight Flexible Non-Metallic Conduit - Type "LNM-P" as manufactured by Electri-Flex, Type "Ultralite" as manufactured by Southwire, Type "CNP" as manufactured by Anaconda, or equal.
- 6. Aluminum Conduit - "Wheatland Tube Co.," "Allied Tube & Conduit Corp.," or equal.
- 7. PVC Coated Metallic Conduit (PCMC) - "Plasti-Bond Red" as manufactured by Robroy Industries, "OCAL-Blue" as manufactured by Ocal, Inc., Perma-Cote Supreme by Perma-Cote Industries, or equal.

##### **B. Raceway Fittings**

- 1. Conduit fittings – "Crouse-Hinds," "Appleton," "OZ Gedney," or equal.
- 2. Non-metallic conduit fittings – "Carlton," "Cantex," or equal.
- 3. Flexible conduit fittings – "Raco," "T & B," "OZ Gedney," or equal.

4. PVC Coated Metallic Conduit fittings - "Plasti-Bond Red" as manufactured by Robroy Industries, "OCAL-Blue" as manufactured by Ocal, Inc., Perma-Cote Supreme by Perma-Cote Industries, or equal.

## 2.02 MATERIALS

### A. Rigid Steel Conduit

1. Rigid steel conduit and fittings shall be of mild steel piping, galvanized inside and out, and shall conform to UL standards. The conduit and fittings shall be listed and labeled by UL as well. The galvanized coating of zinc shall be of uniform thickness applied by the hot-dipped process, and shall be applied also to the threads. It shall be further dipped in a chromic acid bath so as to chemically form a corrosion resistant protective coating of zinc chromate which has a characteristic yellow-green color. Each piece of conduit shall be straight, free from blisters and other defects, cut square, and taper reamed. It shall be delivered with plastic protectors on the threads.

### B. Polyvinylchloride (PVC) Conduit

1. PVC conduit and fittings shall be Schedule 40, 80 heavy wall, or thinwall, as indicated in these Specifications manufactured to conform to UL standards. It shall be listed and labeled by UL. It shall have at least the same temperature rating as the conductor insulation. 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.

### C. Flexible Conduit

1. Flexible metallic conduit shall be constructed from flexibly or spirally wound electro-galvanized steel. Connections shall be by means of galvanized malleable iron squeeze type fittings, or tomic twist-in type in sizes not exceeding 3/4 inch. Liquidtight conduit shall be light gray in color and have sealtight fittings, type UA.
2. In hazardous locations where flexible connections are required, flexible couplings UL listed for the application shall be used. The couplings shall consist of stainless steel tubing and outer braid, with insulating liner. Female end fittings shall also be stainless steel, with removable steel close nipples. Couplings shall be O-Z/Gedney, or equal.

### D. Liquid-Tight Flexible Metal Conduit

1. Liquid-tight flexible conduit (LFMC) shall be galvanized steel, single strip, with a copper strip interwoven and suitable as a grounding means. LFMC shall be UL listed. LFMC shall have an extruded moisture and oil-proof PVC jacket.
2. PVC coated or stainless steel watertight connectors shall be used with liquid-tight flexible metal conduit on both ends.

### E. Liquid-Tight Flexible Non-Metallic Conduit

1. Liquid-tight flexible non-metallic conduit (LFNC) shall be constructed of PVC. LFNC shall be UL listed. LFNC shall have an extruded moisture and oil-proof PVC jacket.
2. Watertight connectors shall be used with liquid-tight flexible non-metallic conduit on both ends. LFNC shall be used to connect all vibrating equipment installed in sodium hypochlorite storage and transfer areas as specified herein, and other applications as directed by the Engineer or as indicated on the drawings.

#### F. Aluminum Conduit

1. 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.
2. Fittings, boxes, and accessories used in conjunction with aluminum conduit shall be die cast, copper free type. They shall be resistant to both chemical and galvanic corrosion. All covers shall have neoprene gaskets.
3. All aluminum conduit used for this project shall be UL listed for the purpose.

#### G. PVC Coated Metallic Conduit

1. PVC coated rigid steel conduit (PCMC) shall be rigid galvanized steel conduit covered with a bonded 40 mil (minimum) thickness PVC jacket and coated inside with urethane. The conduit shall comply with NEMA RN-1.

#### H. Conduit Fittings

##### 1. Rigid Steel Conduit Fittings

- a. Standard threaded couplings, locknuts, bushings, and elbows made only of steel or malleable iron are acceptable. Integral retractable type IMC couplings are acceptable also.
- b. Locknuts: Bonding type with sharp edges for digging into the metal wall of an enclosure.
- c. Bushings: Metallic insulating type, consisting of an insulating insert molded or locked into the metallic body of the fitting. Bushings made entirely of metal or nonmetallic material are not permitted.
- d. Erickson (union-type) and set screw type couplings: Approved for use in concrete are permitted or use to complete a conduit run where conduit is installed in concrete. Use set screws of case hardened steel with hex head and cup point to firmly seat in conduit wall for positive ground. Tightening of set screws with pliers is prohibited.
- e. Sealing fittings: Threaded cast iron type. Use continuous drain type sealing fittings to prevent passage of water vapor. In concealed work, installed fittings in flush steel boxes with blank coverplates having the same finishes as that of other electrical plates in the room.
- f. Fittings for PVC coated rigid conduit shall be manufactured by the maker of the conduit.

##### 2. Rigid Aluminum Conduit Fittings

- a. Standard threaded couplings, locknuts, bushings, and elbows: Malleable iron, steel or aluminum alloy materials. Zinc or cadmium plate iron or steel fittings. Aluminum fittings containing more than 0.4 percent copper are prohibited.
- b. Locknuts and bushings: As specified for rigid steel and IMC conduit.
- c. Set screw fittings: Not permitted for use with aluminum conduit.

##### 3. Expansion and Deflection Couplings

- a. Accommodate 1.9 cm (0.75 inch) deflection, expansion, or contraction in any direction, and allow 30 degree angular deflections.
- b. Include internal flexible metal braid sized to guarantee conduit ground continuity and fault currents in accordance with UL, and the NEC code tables for ground conductors.
- c. Watertight, seismically qualified, corrosion-resistant, threaded for and compatible with rigid or intermediate metal conduit.
- d. Jacket: Flexible, corrosion-resistant, watertight, moisture and heat resistant molded rubber material and stainless steel jacket clamps.

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Exterior underground metallic conduits shall be degreased, pretreated, and coated with 2 coats of Carboline 888 epoxy, or equal. Other finishes may be acceptable upon the Engineer's review.

### **3.02 INSTALLATION**

#### **A. Conduit**

1. All conduit shall be installed in a first class workmanship manner. It shall be installed in horizontal and vertical runs in such a manner as to ensure against trouble from the collection of trapped condensation and shall be arranged so as to be devoid of traps wherever possible. Special care shall be used in assuring that exposed conduit runs are parallel or perpendicular to walls, structural members, or intersections of vertical planes and ceilings. No open wiring is allowed.
2. Fittings or symmetrical bends shall be required wherever right angle turns are made in exposed work. Bends and offsets shall be avoided wherever possible, but where necessary, they shall be made with an approved conduit bending machine. All conduit joints shall be cut square, reamed smooth and drawn up tight, using couplings intended for the purpose.
3. Conduits shall be securely fastened to all sheet metal outlets, junction and pull boxes with double galvanized locknuts and insulating-grounding bushings as required by the NEC. Conduit crossings in insulating roof fill will require both conduits to be secured to the roof deck, and these crossings can only be made where the insulating fill is a minimum of 3 inches deep. Runs of exposed conduit shall be supported in accordance with the NEC using cast aluminum or malleable iron one hole pipe straps with spacers to provide an air space behind the conduit. Stainless steel minerallaac, one piece conduit clamps shall be acceptable where located such that building occupants are not in danger of inadvertent contact, since this type fitting has several sharp edges. In general terms, they may be considered in areas such as on or above ceilings, or high on walls. All conduit in walls and slabs shall be securely braced, capped (wooden plugs are prohibited), and fastened to the forms to prevent dislodgement during vibration and pouring of concrete.
4. During construction, all conduit work shall be protected to prevent lodgement of dirt, plaster or trash in conduits, fittings or boxes. Conduits which have been plugged shall be entirely freed of accumulations or be replaced. All conduits in floors or below grade shall

be swabbed free of debris and moisture before wires are pulled. Crushed or deformed conduit shall not be permitted.

5. Where GRS conduit penetrates a floor slab the conduit shall be painted with 2 coats of Koppers Bitumastic 300-M or equal to a point 6 inches above the penetration.
6. The final section of conduit connecting each motor or piece of utilization equipment subject to vibration shall be of the flexible type. Type "UA" shall be used in all process areas and in outdoor or wet locations. Flexible conduit to space heaters shall be long enough to allow swivel action.
7. In certain situations, conduit expansion joints shall be required to ensure against conduit and/or cable damage due to settling or thermal expansion and contraction. These expansion joints shall be required where required by the manufacturer or the Contract Drawings and shall be installed per manufacturer's instructions.
8. Aluminum conduits shall not be in contact with concrete surfaces. Where aluminum conduits are routed along concrete surfaces, they shall be installed with one hole cast straps with clamp-backs to space the conduit ¼" away from concrete surface. Where aluminum conduit passes through concrete, CMU or brick walls, the penetration shall be made such that the aluminum conduit does not come in contact with concrete, CMU, brick or mortar. All penetrations shall meet or exceed the UL design standards. Aluminum conduit shall transition to PVC coated steel conduit where entering a concrete encasement, floor or ductbank.
9. Unless specifically identified on the Drawings as "Direct Buried," all conduits in the earth, including conduits below slabs-on-grade, shall be concrete encased. Joints in conduit shall be staggered so as not to occur side by side. Rigid non-metallic (PVC) conduit shall be connected to PVC coated rigid steel conduit at the point where it leaves the ground, with the transition to metal conduit occurring inside the concrete encasement. PVC coated rigid steel conduit may transition to non-coated conduit after exiting the encasement. The transition coupling between PVC coated conduit and non-coated conduit shall be PVC coated.
10. All metal raceway systems shall be grounding conductive, solidly bonded throughout and grounded in accordance with NEC requirements and/or as noted on the Contract Drawings. In addition, all raceway systems shall be provided with separate grounding conductors.
11. **Minimum conduit size shall be 3/4 inch.** The following table shows the minimum burial depth required for all exterior conduit or cable:
 

Schedule 40 PVC, Concrete Encased	18"
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12. Wire pulling shall be facilitated by the use of a UL approved pulling compound in pulls over 30 feet in length or where there are 2 or more 90 degree bends. Only polypropylene, nylon, or manila pulling ropes will be permitted. **Standard industry recognized wire pulling equipment shall be used.**
13. Areas of use for each type of conduit:

Location	Schedule 40 PVC	Schedule 80 PVC	Aluminum	PCMC
Wetwell – Exposed Only			X	X
Valve Vault – Exposed Only			X	X
Exterior Exposed			X	X

Location	Schedule 40 PVC	Schedule 80 PVC	Aluminum	PCMC
Exterior Underground, Underslab, or In Slab	X	X		X

14. All conduit shall have an insulated ground wire pulled to all equipment and receptacles.
15. All raceway runs are shown diagrammatically to outline the general routing of the raceway. The installation shall be made to avoid interference with pipes, ducts, structural members or other equipment. Should structural or other interference prevent the installation of the raceways, or setting of boxes, cabinets, or the electrical equipment, as indicated in the Drawings, deviations must be approved by the Owner, and after approval, shall be made without additional charges and shown on the Record Drawings.
16. Assure conduit installation does not encroach into the ceiling height head room, walkways, or doorways.
17. Conduit may be run inside concrete slabs as long as the slab is at least 6-inches thick and conduit will have at least 1-1/2-inches of cover on both sides.
18. Runs of exposed flexible conduit shall be limited to 5 ft. All runs of flexible conduit shall be supported in accordance with NEC requirements.
19. All PVC coated conduit shall be installed in accordance with manufacturer's instructions. The Contractor shall use tools that are specifically suited for coated conduit systems. The use of pipe wrenches and other such tools on PVC coated RGS conduit is prohibited. The Engineer and Owner reserve the right to reject any installation of coated conduit that does not meet the requirements of the Section or the manufacturer's instructions. The Engineer and Owner also reserve the right to reject any installation that exhibits damage due to the improper use of tools. All rejected installations shall be replaced by the Contractor at no additional cost to the Owner. The use of PVC coated conduit repair compounds to repair damages or improper installation is prohibited.
20. All Contractor personnel that install PVC coated RGS conduit shall be trained by the PVC coated RGS conduit manufacturer. Training shall include proper conduit system assembly techniques, use of tools appropriate for coated conduit systems, and field bending/cutting/threading of coated conduit. The Contractor shall furnish evidence of such training as specified herein. Training shall have been completed within the past 24 months prior to the Notice to Proceed on this Contract for all coated conduit installation personnel. Contractor personnel not trained within this timeframe shall not be allowed to install coated conduit, or shall be trained/re-trained as required prior to commencement of conduit installation.
21. Sealing fittings shall be installed where conduits pass from non-hazardous locations to hazardous locations and as required by Chapter 5 of the NEC. See section 16050 for hazardous area classifications.

END OF SECTION

## **SECTION 16131 - BOXES**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. Outlet and junction boxes shall be furnished and installed where indicated on the Contract Drawings, and/or as required by the work in accordance with the NEC.

### **PART 2 - PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS**

- A. Boxes – “Wiegmann,” “Appleton,” “Raco,” “Crouse-Hinds,” “Hoffman,” “Robroy Industries,” “Spring City,” “Carlson,” or equal.

#### **2.02 GENERAL**

- A. Outlet boxes for wet or damp locations shall be cast metal, rust and corrosion resistant (NEMA 4X), with at least 5-1/2 full threads for each (bossed) conduit opening, and shall be suitable for flush or surface mounting as required with drilled external, cast mounting extensions (bossed to provide at least 1/8" between back of box and mounting surface for drainage). Box covers shall be hinged or cap screw retained as required, of the same material as the box and provided with stainless steel (rustproof) hardware.
- B. Junction and/or pull boxes for out-of-doors use or indoor process areas, not mounted in concrete may be sheet metal (NEMA 4X), waterproof, rustproof, rain and sleetproof, with hinged covers and latches and provided means of locking by means of keyed locks, tamper-resistant screws or padlocking as required and with clamping cap-screws top and bottom door edges to provide firm contact with gasketing. All gaskets shall be molded (unbroken) neoprene or butyl rubber.
- C. NEMA 4X junction and/or pull boxes may be stainless steel, if called for on the Contract Drawings; or non-metallic or cast aluminum.
- D. Junction boxes for use in wet-wells and other hazardous areas shall be watertight, rustproof and corrosion resistant, and explosionproof with threaded conduit openings (5-1/2 full threads - minimum) and provided with rustproof hardware.
- E. Explosionproof sealing fittings shall be furnished and installed in accordance with NEC requirements.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION, APPLICATION, AND ERECTION**

##### **A. General**

- 1. Outlets shall be installed in the locations shown on the Contract Drawings. The Contractor shall study the general building plans in relation to the space surrounding each outlet, in order that his work may fit the other work required by these Specifications. When necessary, the Contractor shall relocate outlets so that when fixtures or other

fittings are installed, they will be symmetrically located according to room layout and will not interfere with other work or equipment.

2. All supports for outlet boxes shall be furnished and installed by the electrical trades.

B. Exposed Work

1. Outlet or junction boxes for use with exposed aluminum conduit shall be copper free, cast aluminum type.
2. Outlet or junction boxes for use with exposed PVC conduit shall be PVC.

C. Openings in Electrical Boxes

1. All openings in electrical equipment, enclosures, cabinets, outlet and junction boxes shall be by means of welded bosses, standard knockouts, or shall be sawed, drilled, or punched with tools specially made for the purpose. The use of a cutting torch is prohibited. Unused openings shall be plugged per the NEC.

END OF SECTION

## SECTION 16150 - WIRE CONNECTIONS AND CONNECTING DEVICES

### PART 1 - GENERAL

#### 1.01 SCOPE OF WORK

- A. Wire connection and connecting devices shall be as herein specified.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Connectors, Lugs, etc. – “T & B”, “Anderson”, “Burndy”, or equal.
- B. Termination and splice connectors – “3M Scotchlok”, “Anderson”, “T & B”, “Burndy”, or equal.

#### 2.02 MATERIALS

- A. Wire Splicing and Terminations (600 Volts and Below)
  - 1. Electrical Terminal and Splice Connectors (#22 - #4 AWG)
    - a. Terminals and splice connectors from #22 - #4 AWG shall be compression types 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.
    - b. Connectors shall be manufactured from high conductivity copper and entirely tin plated. Terminal barrels shall be serrated on the inside surface and have a chamfered conductor entry. Terminals shall have funnel entry construction to prevent strand fold-back. All barrels shall be brazed seam or seamless construction.
    - c. Spade type terminals shall be sized for the appropriate stud and shall be locking type that snap firmly onto studs with a close fit for maximum retention. Spade type terminals shall be insulated with an insulation suitable for maintaining a high dielectric strength when crimped and be made from nylon, PVC, or equal.
  - 2. Electrical Lugs and Connectors (#6 AWG - 1000 Kcmil)
    - a. Lugs and splice connectors from #6 AWG - 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 AWG 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.
  - 3. Twist-on Wire Connectors (#22 AWG - #10 AWG)
    - a. All twist-on wire connectors must have a corrosion resistant spring that is free to expand within a steel jacket. The steel jacket must be insulated with a flexible vinyl jacket capable of withstanding 105 degrees Celsius ambient temperatures and of sufficient length to cover wires that are inadvertently overstripped.

- b. Each connector size must be listed by UL for the intended purpose and color coded to assure that the proper size is used on the wire combinations to be spliced. The connectors must be compatible with all common rubber and thermoplastic wire insulations.
4. Solderless/re-usable lugs shall be used only when furnished with equipment such as control panels, furnished by others, where specification of compression type lugs is beyond the Contractor's control. In the event their use is necessary, the Contractor shall be responsible for assuring that they are manufactured to NEMA standards, with proper number and spacing of holes and set screws.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION, APPLICATION, & ERECTION**

#### **A. Insulation of Splices and Connections**

1. Connections/splices with a smooth even contour shall be insulated with a conformable 7 mil thick vinyl plastic insulating tape which can be applied under all weather conditions and is designed to perform in a continuous temperature environment up to 105 degrees Celsius. The tape shall have excellent resistance to abrasion, moisture, alkalies, acids, corrosion, and varying weather conditions (including sunlight). The tape shall be equal to Scotch 33+ and shall be applied in conformance with manufacturer's recommendations. In addition, it shall be applied in successive half-lapped layers with sufficient tension to reduce its width to 5/8 of its original width. The last inch of the wrap shall not be stretched.
2. Connections/splices with irregular shapes or sharp edges protruding shall be first wrapped with 30 mil rubber tape to smooth the contour of the joint before being insulated with 33+ insulating tape specified in the previous paragraph. The rubber tape shall be high voltage (69 KV) corona-resistant based on self-fusing ethylene propylene rubber and be capable of operation at 130 degrees Celsius under emergency conditions. The tape must be capable of being applied in either the stretched or unstretched condition without any loss in either physical or electrical properties. The tape must not split, crack, slip, or flag when exposed to various environments. The tape must be compatible with all synthetic cable insulations. The tape must have a dissipation factor of less than 5 percent at 130 degrees Celsius, be non-vulcanizing, and have a shelf life of a least 5 years. The rubber tape shall be applied in successive, half-lapped wound layers and shall be highly elongated to eliminate voids. Other manufacturer's recommendations on installation shall be adhered to. The rubber tape shall be equal to Scotch 23 or 130C electrical splicing tape.
3. Splices made in wet or damp locations shall be made submersible and watertight with special kits made for the application and compatible with type of cables employed.

#### **B. Connection Make-up**

1. Connections of lugs to bus bars, etc., shall be made up with corrosion resistant steel bolts having non-magnetic properties with matching nuts, and shall utilize a Belleville spring washer (stainless steel) to maintain connection integrity. Connections shall be torqued to the proper limits. Prior to bolting up the connection, electrical joint compound shall be brushed on the contact faces of the electrical joint.
2. All motor lead connections shall be made up to match the type of lead furnished on the motor. If the lead is not lugged, then twist-on wire connectors may be used. To prevent possible vibration problems, twist-on connectors shall be taped after installation.

3. All lugged motor lead connections (excluding motors over 200 horse-power) shall be made up using ring tongue compression lugs with proper size stainless steel nuts and bolts. Belleville type spring shall be used to maintain tension on the connections. The connections shall then be insulated using the procedure described for irregular shapes, utilizing rubber tape in conjunction with vinyl electrical tape.
4. At the time of final inspection, the Engineer may request the Contractor to disassemble 3 randomly selected motor lead connections in the Engineer's presence, to assure conformance with these Specifications.
5. The Contractor shall include all necessary tools, materials, and labor in his bid for disassembly of the connections and for remaking them with new insulating materials after inspection.

END OF SECTION

## **SECTION 16170 – SAFETY SWITCHES**

### **PART 1 - GENERAL**

#### **1.01 SCOPE OF WORK**

- A. Provide horsepower-rated, quick-make, quick-break, safety switches provided with the number of poles and fuses as required.

### **PART 2 - PRODUCTS**

#### **2.01 ACCEPTABLE MANUFACTURERS/EQUIPMENT**

- A. Safety switches shall be as manufactured by General Electric, Square D Company, Eaton, or equal.
- B. Switches shall be NEMA Type HD, single-throw, externally operated, non-fused or fused with Class R fuse clips.
- C. Switches shall have arc shields, shall be of enclosed construction and fusible or non-fusible as indicated. Switches shall be rated for either 250-volt AC or 600-volt AC service as required.
- D. All switches shall be capable of interrupting locked rotor current of motor which it serves.
- E. Enclosures shall be NEMA-4X for exterior and process area use unless noted otherwise.
- F. Provide dual-element Bussman type FRN (250 volt) or type FRS (600 volt) fuses for any fusible safety switch serving a motor circuit.
- G. For non-motor loads, provide dual element Bussman type LPN (250 volt) or type LPS (600 volt).
- H. All switches shall be capable of being padlocked in either the "On" or "Off" position.
- I. Safety switches shall be provided with auxiliary contacts where indicated on Contract Drawings.
- J. Safety switches shall be UL listed and shall conform to NEMA Standards. NEMA 4X enclosed safety switches where called for shall be stainless steel.
- K. NEMA 3R stainless steel, non-fused, double throw switch with camlock connectors to match an existing LFUCG owned portable generator. EATON Quick Connect, 200A, 3 pole, solid neutral, Model DT324NURKLPSS with Posi-Lok receptacles. Verify compatibility with Owner's power cord prior to purchase.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. Provide non-fusible switches at remote motor locations as indicated on drawings.
- B. Provide double throw non-fusible safety switch for switching between utility and portable generator power.

- C. Mount switches to surfaces or to equipment enclosures with a minimum of 4 bolts using toggle anchors for masonry construction, Phillips "Red Head" anchors for poured concrete construction and bolts, jumbo washers, lock washers and nuts for equipment enclosure mounting.
- D. All safety switches to be identified with nameplates per Section 16075.

END OF SECTION

## SECTION 16220 - MOTORS

### PART 1 - GENERAL

#### 1.01 SCOPE OF WORK

- A. Motors are to be furnished with driven equipment except where otherwise noted on the Contract Drawings or elsewhere in this Division of the Specifications. All motors shall conform to the following Specifications and any special requirements of the driven equipment. Special requirements of the driven equipment shall take precedence over these Specifications should a discrepancy occur. Starting torque and slip ratings shall conform to the requirements of the driven equipment.
- B. Polyphase motors shall be of the squirrel cage induction type and single phase of the capacitor start-induction run type except as otherwise noted. Conduit boxes shall be tapped for the size conduit shown on the Contract Drawings.
- C. All motors shall be manufactured and installed in accordance with applicable NEMA standards and NEC provisions, latest revisions.

#### 1.02 DELIVERY, STORAGE, & HANDLING

- A. All electrical motors shall be protected against the accumulation of moisture, dust and debris and physical damage during the course of installation of the job.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Motors – "General Electric", "Westinghouse", "U.S. Motors", "Gould Century", "Lincoln", "Baldor", "Marathon", "Reliance", "Magnatek", "Siemens", or equal.

#### 2.02 EQUIPMENT

- A. Motors 200 Horsepower and Under for Service Under 600 Volts
  - 1. Ratings and Electrical Characteristics
    - a. Time: All motors shall be rated for continuous duty.
    - b. Temperature: Based on NEMA standards for a maximum ambient temperature of 40 degrees Celsius 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 motors 230/460 volts. Submersible polyphase motors to be operated at 460 volts may take exception to the dual voltage requirement. All motors shall be capable of normal operation at balanced voltages in the range of  $\pm 10$  percent from rated winding voltage.
    - d. Frequency: All a-c motors shall be rated for 60 Hz. operation. All motors shall be capable of normal operation at frequencies 5 percent above or below the nominal rating of 60 Hz.

- e. **Horsepower:** Horsepower of the motors shall be as given in the Specification Division on the driven equipment or as shown on the Contract Drawings. Submersible motors shall be allowed to be furnished even though the horsepower rating may not be in accordance with standard NEMA assignments. In many cases, the horsepower specified is a minimum requirement and certain alternate manufacturers may require larger horsepower motors. The larger motor shall be furnished at no extra cost to the Owner.
- f. **Locked Rotor Current:** Locked rotor current shall be in accordance with NEMA standards.
- g. **Efficiency and Power Factor:** Efficiency and power factor shall be given consideration during Shop Drawing review. The ratings at full, 3/4, and 1/2 load shall be compared to similar motors manufactured by acceptable suppliers listed in these Specifications. Excessive variation shall be considered grounds for rejection.
- h. **Speed:** Synchronous speed of motors shall correspond to standard NEMA ratings. Actual speed shall be as given in the Specification Division on the driven equipment. Slip shall not exceed 5 percent at full load.
- i. **Service Factor:** The service factor shall be 1.15 unless requirements of the driven load necessitate a higher service factor. The service factor for inverter duty rated motors shall be 1.0.
- j. **Insulation Class:** Insulation shall be NEMA Class F, except as otherwise noted. Submersible motors shall be Class F, and inverter duty motors to be operated at variable speed shall be Class F. Motors shall operate at a Class B rise at nameplate horsepower loading regardless of Insulation Class.
- k. **Design Level:** Motors shall be NEMA design B, except as otherwise noted.
- l. **Enclosure:** Motors for process equipment 2 HP and smaller shall be totally enclosed. All motors for process equipment larger than 2 HP shall be TEFC (totally enclosed fan cooled), suitable for use indoors or outdoors, except as otherwise noted. Submersible motors shall be air or oil filled and of watertight construction. Motors used in classified atmospheres shall be properly rated for that hazard.
- m. **Frame Size:** Frame designations shall be in accordance with NEMA standards.
- n. **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 deenergization should overheating threaten. All submersible motors shall be equipped with motor winding thermostats.
- o. All submersible pump/motor assemblies shall be equipped to detect presence of moisture and alarm at the controller.
- p. Motors specified for operation with variable frequency drives shall be inverter duty and shall be designed to output 100 percent of nameplate horsepower under continuous duty service without exceeding the temperature rise specified herein when controlled by the actual drives furnished. Inverter duty motors shall be designed to operate down to 10% of full load speed without the need for a line powered cooling fan.

## 2. Mechanical Characteristics

a. Integral Horsepower Motor Construction

- 1) Motor frames for horizontal motors shall be cast iron, heavy fabricated steel, or cast aluminum (alloy 356 or 360). A steel insert ring shall be set into the aluminum alloy endshield when cast to minimize wear of the bearing support. Aluminum alloy motors shall not be used in areas where exposed to chlorine gas.
- 2) Motor frames for vertical motors shall be cast iron, heavy fabricated steel, or extruded aluminum (alloy 6063-T4 or 6063-T6). Endshields for vertical motors must be cast iron.
- 3) If an aluminum frame is used, the endshields and/or all other steel hardware must be plated with zinc or cadmium and coated with grease before assembly to minimize the galvanic action between the steel and aluminum.
- 4) Motor frames and endshields shall be of such design and proportions as to hold all motor components rigidly in proper position and provide adequate protection for the type enclosure employed. Lifting lugs of all motors shall conform to NEMA standards.
- 5) Windings shall be random or form wound, adequately insulated and securely braced to resist failure due to electrical stresses and vibration. If the windings are aluminum, there shall be a cold welded aluminum-copper transition joint at the termination of the windings to permit the use of standard copper to copper connection techniques by the electrician and to prevent galvanic action between the copper power wires and the aluminum windings.
- 6) The motor shaft shall be made of high grade machine steel or steel forging of size and design adequate to withstand the load stresses normally encountered in motors of that particular rating. Bearing journals shall be ground and polished.
- 7) Rotors shall be made from high grade steel laminations adequately fastened together and to the shaft. Rotor cage windings may be cast aluminum of bar type construction with brazed end rings.
- 8) Integral horsepower motors shall be equipped with cone, roller, or ball bearings made to AFBMA standards, Grade 1 and shall be of ample capacity for the motor ratings. The bearing housing shall be large enough to hold sufficient lubricant to minimize the need for frequent relubrication (ten years normal operation without lubrication), but facilities shall be provided for adding new lubricant and draining out old lubricant without motor disassembly. The bearing housing shall have long, tight running fits or rotating seals to protect against the entrance of foreign matter into the bearings or leakage of lubricant out of the bearing cavity.
- 9) See the specification division relating to each piece of motor driven equipment for additional motor requirements to those listed above.

b. Fractional Horsepower Motor Construction

- 1) Motor and shell shall be rigid welded steel designed to maintain accurate alignment of motor components and provide adequate protection. End shields shall be reinforced, lightweight, die cast aluminum. Windings shall be of varnish insulated wire with slot insulation of polyester film and baked on bonding treatment to make the stator winding strongly resistant to heat, aging, moisture, electrical stresses, and other hazards. Motor shafts shall be made from high grade, cold rolled, shaft steel with drive shaft extensions carefully machined to standard NEMA dimensions for shaft coupled drive connection. Bearings shall be carefully selected precision ball bearings with extra quality, long life grease

and large reservoir providing 10 years normal operation without relubrication, AFBMA Grade 1.

- c. Submersible Motor Construction
  - 1) See Equipment Specifications.
- 3. Tests, Nameplates, and Shop Drawings
  - a. Tests
    - 1) 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.
    - 2) Tests will be in accordance with IEEE test procedures.
  - b. Nameplates
    - 1) 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.
  - c. Shop Drawings
    - 1) Shop Drawings shall consist of motor dimensions, nameplate data from each motor and tests as outlined above. Also included shall be efficiency and power factor at 100, 75, and 50 percent load. Operation, maintenance, and lubrication information (including bearing catalog numbers) shall be submitted with Shop Drawings for review.
- 4. 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	84.0	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

Horsepower	Nominal 3600 RPM (Minimum %)	Nominal 1800 RPM (Minimum %)	Nominal 1200 RPM (Minimum %)
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

Open Motors where specified shall also comply with NEMA efficiency minimums.

- b. Motors shall be energy efficient type to comply with requirements of the Energy Policy Act of 1992.

**PART 3 - EXECUTION**

**3.01 INSTALLATION/APPLICATION/ERECTION**

- A. Installation of motors shall comply with motor manufacturer's instructions as well as applicable NEMA recommendations and requirements of the driven equipment OEM (original equipment manufacturer).
- B. Motors shall be aligned to acceptable tolerances and shall not vibrate excessively.
- C. Motors shall not be energized until they have been accepted by the OEM start up personnel.

END OF SECTION

## SECTION 16440 - MOTOR CONTROL

### PART 1 - GENERAL

#### 1.01 SCOPE OF WORK

- A. Contractor shall furnish and install motor control equipment as specified herein and as shown on the Drawings.

#### 1.02 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.

#### 1.03 SERVICE OF MANUFACTURER'S REPRESENTATIVE

- A. The Contractor shall provide the services of a qualified manufacturer's technical representative who shall adequately supervise the installation and testing of all equipment furnished under this Contract and instruct the Contractor's personnel and the Owner's operating personnel in its maintenance and operation as outlined elsewhere in Division 1. The services of the manufacturer's representative shall be provided for a period of not less than as follows:
  - 1. One trip of one (1) working day after acceptance of the equipment.
- B. Any additional time required to achieve successful installation and operation shall be at the expense of the Contractor. The manufacturer's representative shall sign in and out at the office of the Engineer's Field Representative on each day he is at the project.

#### 1.04 TRAINING

- A. The Contractor shall provide training for Owner personnel. Training shall be conducted by the manufacturer's factory trained specialists who shall instruct Owner personnel in operation and maintenance of all equipment provided under this Section.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Control Equipment
  - 1. Schneider", "Allen Bradley", or equal.

## B. Timers

1. "Paragon", "Tork", "Intermatic", or equal.

## 2.02 INDIVIDUALLY MOUNTED MOTOR CONTROL DEVICES (480, 240, OR 120 VOLT)

### A. General

1. All motor control equipment shall be new and the product of 1 manufacturer. All individually mounted disconnects, push-button stations, latchout stations, starters, etc., indoors shall be mounted on a 1 inch galvanized unistrut, 1 inch Kindorf channel, or equal to provide an air space at rear. Outside mounted equipment shall utilize 1-inch aluminum strut as required in 16070. These specifications also apply to devices inside a custom control panel.

### B. Starters

#### 1. General

- a. All starters shall be of the voltage rating, type, and sized for the motor size shown in these Specifications and/or on the Contract Drawings. For enclosure type see the system operation description and/or the Contract Drawings. All starters shall be of the magnetic type. Should a piece of electrically driven equipment be furnished with a larger motor than shown on the Contract Drawings, the proper size combination starter shall be provided for the equipment supplied, at no extra cost to the Owner.
- b. See the Contract Drawings for the auxiliary equipment to be furnished and/or Section 16900 - Controls of this division. **Maximum control voltage shall be 120 volts, a-c.** Minimum starter size shall be NEMA Size 1.
- c. Pilot light assemblies shall be push-to-test LED type.

#### 2. Overloads

- a. Each starter shall have a thermal overload device in each ungrounded leg. The overload shall be of the "Ambient compensated Bi-metallic", thermal element type. All overloads shall be of the manual reset type and shall be reset without opening the starter enclosure. Heaters will be sized for the proper temperature rise of the motor that it is being used on. Heaters for general service shall be of the standard trip type. **Adjustable Overload Relay Thermal Units are not allowed.** All integral horsepower motors, 15 horsepower and over, require thermal elements embedded in the windings. See Motor Specifications, this division.

#### 3. Contactors

- a. All contactors for motor starters shall be of the a-c magnetic type with "undervoltage" protection when used in conjunction with momentary contact push-button control and "undervoltage" release when used with maintained contact push-button control.
- b. Contactor size shall be in accordance with NEMA Standards for the motor controlled and shall be horsepower rated. IEC rated equipment is not acceptable and shall be used as a basis for rejection of the equipment.

- c. Contacts shall be of the heavy duty silver-to-silver type and shall be totally enclosed in individual arc quenching chambers. Contacts shall be easily accessible for replacement.
- d. The contactor coil shall be of the vacuum impregnated or epoxy resin type, moisture resistant and corrosion proof.

### C. Control Stations

#### 1. General

- a. Control stations shall be heavy duty, maintained or momentary contact type, as noted on the Contract Drawings. Contacts shall be silver alloy, double break type. The number and marking of controls shall be as shown on the Contract Drawings. Enclosures shall be NEMA 4X for indoor and outdoor mounting, unless otherwise noted on the Contract Drawings. All control stations shall operate on 120 volt, a-c maximum, unless otherwise designated on the Contract Drawings. "Latch-out" facilities shall be provided where called for in these Specifications and/or on the Contract Drawings.

#### 2. Maintained Contact

- a. Maintained contact control switches shall be marked "On" and "Off". The button pushed shall remain in and push the other button out until the other button is pushed. In general, they are to be used for hand control of motors which have to operate continuously and restart whenever power is off then resumed, without any manual operator. This is needed for motors which have to operate continuously in the absence of an operator.

#### 3. Momentary Contact

- a. Momentary contact control push-button switches shall be marked "start" and "stop". Pushbuttons shall spring out whenever pushed. If the circuit is dropped for any reason, operation cannot be resumed until a "start" push-button is pushed. In general, they are to be used for hand control of motors which are desired to operate intermittently in the presence of the operator and stop and start independently from more than one parallel control location.

### D. Circuit Breakers

- 1. Circuit breakers shall be molded case type. Trip elements of multi-pole breakers shall be effectively insulated from one another. Multi-pole breakers shall be designed so that an overload on any one pole shall open all poles simultaneously.
- 2. The breaker operating mechanism shall be the quick-make, quick-break type and shall be entirely trip free to prevent the contacts being held in a closed position against a short circuit.
- 3. Breakers not used with motor starters shall be of the thermal magnetic type with a thermal bimetallic element for time delayed overload protection and a magnetic element for short circuit protection.
- 4. The breaker shall be trip indicating with the trip position midway between the "On" and "Off" positions.
- 5. Breakers for combination starters shall be 100 amp frame or larger. All breakers for combination starters shall have an adjustable magnetic trip element of the motor circuit protector type.

6. Breakers for combination starters shall be F frame or larger. All breakers shall have adjustable magnetic trip elements. Circuit breakers K frame and larger shall have interchangeable thermal-magnetic trip elements.
7. Breakers for submersible pumps shall include ground fault protection as called for in 10 States Standards.

E. Selector Switches

1. Hand-off-automatic type selector switches shall be of oil-tight construction and shall have 3 positions. The switch must not have a spring loaded return. It shall be of the "quick-make", "quick-break" type.

## **PART 3 - EXECUTION**

### **3.01 INSTALLATION/APPLICATION/ERECTION**

A. Individually Mounted Motor Control Devices (480, 240, or 120 Volt)

1. All devices and equipment furnished under this section (electronic circuit monitors, power correction equipment, etc.) shall be programmed, configured, and calibrated by the manufacturer. Any settings required shall be as determined by the manufacturer. If coordination studies or power system analysis is required, it shall be performed by the manufacturer.

END OF SECTION

Client#: 645142

HERRICOMPA

**ACORD**<sup>TM</sup>

**CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY)

9/08/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Marsh & McLennan Agency LLC PO Box 2030 360 East Vine Street, Ste 200 Lexington, KY 40588	<b>CONTACT NAME:</b> Karen S Marshall <b>PHONE (A/C, No, Ext):</b> 859-244-7687 <b>E-MAIL ADDRESS:</b> Karen.Marshall@MarshMMA.com	<b>FAX (A/C, No):</b> 859-254-8020
	<b>INSURER(S) AFFORDING COVERAGE</b>	
<b>INSURED</b> Herrick Company, Inc. 2176 Waddy Road Lawrenceburg, KY 40342-9440	<b>INSURER A :</b> Selective Insurance Company of America	<b>NAIC #</b> 12572
	<b>INSURER B :</b> KY Assoc. General Contractors SIF	<b>999999</b>
	<b>INSURER C :</b> Tokio Marine Specialty Insurance Compan	<b>23850</b>
	<b>INSURER D :</b>	
	<b>INSURER E :</b>	
	<b>INSURER F :</b>	

**COVERAGES**                      **CERTIFICATE NUMBER:**                      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> PD Ded:500 GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		S2405322	10/11/2021	10/11/2022	EACH OCCURRENCE    \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence)    \$500,000 MED EXP (Any one person)    \$ PERSONAL & ADV INJURY    \$1,000,000 GENERAL AGGREGATE    \$2,000,000 PRODUCTS - COMP/OP AGG    \$2,000,000 \$
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> Drive Oth Car <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY		S2405322	10/11/2021	10/11/2022	COMBINED SINGLE LIMIT (Ea accident)    \$1,000,000 BODILY INJURY (Per person)    \$ BODILY INJURY (Per accident)    \$ PROPERTY DAMAGE (Per accident)    \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED    RETENTION \$		S2405322	10/11/2021	10/11/2022	EACH OCCURRENCE    \$10,000,000 AGGREGATE    \$10,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?    Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below    N    N/A		007033	01/01/2022	01/01/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT    \$4,500,000 E.L. DISEASE - EA EMPLOYEE    \$4,500,000 E.L. DISEASE - POLICY LIMIT    \$4,500,000
A	Builders Risk		S2405322	10/11/2021	10/11/2022	3,000,000/2,500 ded
C	CL Pollution		PPK2462716	09/05/2022	09/05/2024	2000000/6000000/2500ded
A	Rent/Leased Equip		S2405322	10/11/2021	10/11/2022	40,000/500ded

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
**PROJECT: Hartland 2 Pump Station Upgrades Wastewater Improvements Division of Water Quality Remedial Measures Project ID No. EH-18 LFUCG Bid No. 67-2022**  
 Lexington Fayette Urban County Government (Owners) and GRW Engineers, Inc. (Engineer), 801 Corporate Drive, Lexington, KY 40503 and Bell Engineering (Engineer, 2480 Fortune Drive, Suite 350, Lexington, KY 40509 are named Additional Insured with regard to the General and Auto liability  
 (See Attached Descriptions)

<b>CERTIFICATE HOLDER</b> Lexington Fayette Urban County Government 250 East Main Street Lexington, KY 40507	<b>CANCELLATION</b> SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	<b>AUTHORIZED REPRESENTATIVE</b> 

## DESCRIPTIONS (Continued from Page 1)

policies of the Named Insured, but only with respect to and to the extent of the liabilities assumed by the Named Insured under written contract, agreement or permit and subject to the provisions and limitations of the policy.

The General Liability insurance is Primary; any other insurance maintained by the contractor & Owner is excess & non-contributory, when required by written contract, agreement or permit and subject to the provisions and limitations of the policy.

30 day Notice of Cancellation with respect to Liability policies applies per form CG 28 04 10 93.

Waiver of subrogation applies to General Liability and Auto Liability when required by written contract, agreement or permit and subject to the provisions and limitations of the policy. Note that Waiver of Subrogation on workers compensation is prohibited by law in Kentucky.