

**SPECIFICATIONS FOR  
Greene County Rural Water – Booster Pump Station  
Contract K  
for  
Greene County Rural Water District  
Greene County, Illinois**

**BOARD PRESIDENT**

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**BOARD TREASURER**

**Heather Stone**

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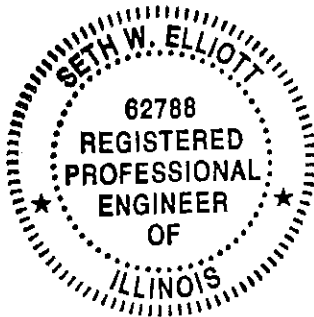
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*Seth W. Elliott*

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Illinois Professional Engineer  
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Expires: November 30, 2019

Date: June, 2018  
File: 00355-405

*Prepared by:*



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Statement of Contractor's Qualifications	EJCDC No. C-451 (2013 Edition)
Certification for Contracts, Grants, and Loans	<u>RD Instruction 1940-Q, Exhibit A-1</u>
Compliance Statement	<u>Form RD 400-6</u>
Non-Collusion Affidavit of Prime Bidder	<u>Form RD</u>
Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions	<u>RD AD 1048</u>
Notice of Award	EJCDC No. C-510 (2013 Edition)
Agreement Between Owner and Contractor(s)	EJCDC No. C-521 (2013 Edition)
Certificate of Owner's Attorney and Agency Concurrence	<u>RUS Bulletin 1780-26, Exhibit I</u>
Engineer's Certification of Final Plans and Specifications	<u>RUS Bulletin 1780-26, Exhibit J</u>
Performance Bond	EJCDC No. C-610 (2013 Edition)
Payment Bond	EJCDC No. C-615 (2013 Edition)
Notice to Proceed	EJCDC No. C-550 (2013 Edition)
General Conditions	EJCDC No. C-710 (2013 Edition)
Prevailing Rate of Hourly Wages (when required)	Supplied by Illinois Department of Labor
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\* Forms and RUS Bulletins may be found at <http://www.usda.gov/rus/water/ees/englib/index.htm>

\* Illinois Engineering Documents may be found at <http://www.rurdev.usda.gov/il/eng.htm>

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**Greene County Rural Water District  
Carrollton, IL  
Greene County Rural Water - Booster Pump Station**

**ADVERTISEMENT FOR BIDS**

Sealed Bids for the construction of the Greene County Rural Water - Booster Pump Station Contract K will be received, by David Longmeyer, Chairman Greene County Rural Water District, at the office of the Greene County Rural Water District 323A 6th Street, Carrollton, IL, 62016, until 2:00 pm local time on July 12, 2018, at which time the Bids received will be publicly opened and read. The Project consists of constructing A new 225 gpm booster pump station at the existing site, and related appurtenances.

A Pre-Bid meeting will be held at 10:00 AM on June 26, 2018 at the Greene County Rural Water District office.

Bids will be received for a single prime Contract. Bids shall be on a unit price basis, with additive alternate bid items as indicated in the Bid Form.

The Issuing Office for the Bidding Documents is: Heneghan and Associates, P.C. 1004 State Highway 16, Jerseyville, IL 62052, contact Seth Elliott – 618-498-6418 – [swelliott@heneghanassoc.com](mailto:swelliott@heneghanassoc.com). Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8:00am and 4:30pm, and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents also may be examined at Southern Illinois Builders Association, 1468 Green Mount Road, O'Fallon, Illinois 62269; Dodge/Agc Plan Room, 6330 Knox Industrial Drive, St. Louis, Missouri 63139; online at Heneghan and Associates Website - <https://haengr.com/bid-documents> and [www.dodge.construction.com](http://www.dodge.construction.com).

Bidding Documents may be obtained from the Issuing Office during the hours indicated above. Bidding Documents are available at <https://haengr.com/bid-documents> (as portable document format (PDF) files) for a non-refundable charge of \$ 10.00. Alternatively, printed Bidding Documents may be obtained from the Issuing Office either via in-person pick-up or via mail, upon Issuing Office's receipt of payment for the Bidding Documents. The non-refundable cost of printed Bidding Documents is \$ 80.00 per set, payable to "Heneghan and Associates, P.C.", plus a \$10.00 non-refundable shipping charge. Upon Issuing Office's receipt of payment, printed Bidding Documents will be sent via the prospective Bidder's delivery method of choice. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the prospective Bidder's date of receipt of the Bidding Documents. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

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## INSTRUCTIONS TO BIDDERS

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## **ARTICLE 1 – DEFINED TERMS**

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

A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

## **ARTICLE 2 – COPIES OF BIDDING DOCUMENTS**

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

## **ARTICLE 3 – QUALIFICATIONS OF BIDDERS**

- 3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within 2 days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:
- A. Evidence of Bidder's authority to do business in the state where the Project is located.
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

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

### **4.01 *Site and Other Areas***

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

### **4.02 *Existing Site Conditions***

- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
1. Subsurface and Physical Conditions; Hazardous Environmental Conditions: None Available.
  2. Geotechnical Baseline Report: No Geotechnical Baseline Report is Available.

- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

#### 4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

#### 4.04 *Owner's Safety Program*

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

#### 4.05 *Other Work at the Site*

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

### **ARTICLE 5 – BIDDER'S REPRESENTATIONS**

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

## **ARTICLE 6 – PRE-BID CONFERENCE**

- 6.01 A pre-Bid conference will be held at the time and location stated in the invitation or advertisement to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

## **ARTICLE 7 – INTERPRETATIONS AND ADDENDA**

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

## **ARTICLE 8 – BID SECURITY**

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

## **ARTICLE 9 – CONTRACT TIMES**

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

## **ARTICLE 10 – LIQUIDATED DAMAGES**

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

## **ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS**

- 11.01 The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids in the case of a proposed substitute and 5 days prior in the case of a proposed "or-equal." Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The



burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. Substitutes and "or-equal" materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General Conditions after the Effective Date of the Contract.

- 11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.
- 11.03 If an award is made, Contractor shall be allowed to submit proposed substitutes and "or-equals" in accordance with the General Conditions.

## **ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

- 12.01 If required by the bid documents. The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work: Electrical/Telemetry, Painter, Paint Supplier, and Motor Supplier.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.
- 12.05 Contractor shall not be required to employ any Subcontractor, Suppliers, individuals, or entity against whom Contractor has reasonable objection.
- 12.06 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.

## **ARTICLE 13 – PREPARATION OF BID**

- 13.01 The Bid Form is included with the Bidding Documents.
  - A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
  - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.
- 13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.
- 13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.
- 13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.
- 13.07 All names shall be printed in ink below the signatures.
- 13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

#### **ARTICLE 14 – BASIS OF BID**

##### **14.01 Base Bid with Alternates**

- A. Bidders shall submit a Bid on a lump sum basis for the base Bid and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.
- B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.

##### **14.02 Unit Price**

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

#### 14.03 *Allowances*

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

### **ARTICLE 15 – SUBMITTAL OF BID**

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to David Longmeyer.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

### **ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID**

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

### **ARTICLE 17 – OPENING OF BIDS**

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

### **ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

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

## **ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 19.03 Evaluation of Bids
- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
  - B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner shall announce to all bidders a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

## **ARTICLE 20 – BONDS AND INSURANCE**

- 20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

## **ARTICLE 21 – SIGNING OF AGREEMENT**

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

## **ARTICLE 22 – SALES AND USE TAXES**

22.01 Owner is exempt from Illinois state sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes shall not be included in the Bid. Refer to Paragraph SC-7.09 of the Supplementary Conditions for additional information.

## **ARTICLE 23 – CONTRACTS TO BE ASSIGNED**

23.01 Not Applicable.

## **ARTICLE 24 – WAGE RATE REQUIREMENTS**

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

## **ARTICLE 25 – FEDERAL REQUIREMENTS**

25.01 Federal requirements at Article 19 of the General Conditions apply to this Contract.

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# **BID FORM**

## **Greene County Rural Water District Greene County Rural Water - Booster Pump Station**

**00355-405**

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## ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

***David Longmeyer, Chairman***

***Greene County Rural Water District***

***323A 6th Street, Carrollton, IL, 62016***

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

## ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

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

## ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

**Addendum No.**

**Addendum, Date**

_____	_____
_____	_____
_____	_____
_____	_____

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

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

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

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

- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

#### **ARTICLE 4 – BIDDER’S CERTIFICATION**

##### **4.01 Bidder certifies that:**

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
  - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
  - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### **ARTICLE 5 – BASIS OF BID**

##### **5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):**

Base Bid A is a substantial completion for the project (pump station and telemetry) by June 28, 2019.

ITEMS - BASE BID "A" SUBSTANTIAL COMPLETION BY JUNE 28, 2019		QUANTITY	UNIT	UNIT PRICE	ESTIMATED TOTAL PRICE
1	Foundation Work (Concrete Footing, Floor Slab, etc.)	1	L.S.	\$	\$
2	Yard Piping (Ductile Iron Pipe, Gate Valves, Connections)	1	L.S.	\$	\$
3	Building Floor Drains, Interior Drain Line Piping and French Drains	1	L.S.	\$	\$
4	Masonry Walls and Wood Trusses	1	L.S.	\$	\$
5	Misc. Architectural (Doors, Roof, FRP, Ceiling, Interior Walls, Etc.)	1	L.S.	\$	\$
6	Interior Piping, Fittings, Valves, Meters, Gauges, etc.	1	L.S.	\$	\$
7	Booster Pumps and Motors	2	Each	\$	\$
8	Electrical	1	L.S.	\$	\$
9	Telemetry Office and Software	1	L.S.	\$	\$
10	Telemetry Carrollton BPS	1	L.S.	\$	\$
11	Telemetry White Hall BPS	1	L.S.	\$	\$
12	Telemetry West Tower	1	L.S.	\$	\$
13	Telemetry East Tower	1	L.S.	\$	\$
14	Operations Equipment	1	L.S.	\$	\$
15	Blasting and Protective Coatings	1	L.S.	\$	\$
16	Site Work (Driveway, concrete Slab, Grading, Seeding, Erosion Control, Etc.)	1	L.S.	\$	\$
17	Fencing	1	L.S.	\$	\$
18	Start-Up and Miscellaneous	1	L.S.	\$	\$
<b>TOTAL BID AMOUNT</b>					

**Dollars**

**(In Words)**

Base Bid B is a substantial completion for the project the pump station operational in manual mode by March 29, 2019. The project, including telemetry shall be substantially complete by June 28, 2019.

ITEMS - BASE BID "B" MILESTONE OF PUMP STATION IN MANUAL OPERATION BY MARCH 29, 2019		QUANTITY	UNIT	UNIT PRICE	ESTIMATED TOTAL PRICE
1	Foundation Work (Concrete Footing, Floor Slab, etc.)	1	L.S.	\$	\$
2	Yard Piping (Ductile Iron Pipe, Gate Valves, Connections)	1	L.S.	\$	\$
3	Building Floor Drains, Interior Drain Line Piping and French Drains	1	L.S.	\$	\$
4	Masonry Walls and Wood Trusses	1	L.S.	\$	\$
5	Misc. Architectural (Doors, Roof, FRP, Ceiling, Interior Walls, Etc.)	1	L.S.	\$	\$
6	Interior Piping, Fittings, Valves, Meters, Gauges, etc.	1	L.S.	\$	\$
7	Booster Pumps and Motors	2	Each	\$	\$
8	Electrical	1	L.S.	\$	\$
9	Telemetry Office and Software	1	L.S.	\$	\$
10	Telemetry Carrollton BPS	1	L.S.	\$	\$
11	Telemetry White Hall BPS	1	L.S.	\$	\$
12	Telemetry West Tower	1	L.S.	\$	\$
13	Telemetry East Tower	1	L.S.	\$	\$
14	Operations Equipment	1	L.S.	\$	\$
15	Blasting and Protective Coatings	1	L.S.	\$	\$
16	Site Work (Driveway, concrete Slab, Grading, Seeding, Erosion Control, Etc.)	1	L.S.	\$	\$
17	Fencing	1	L.S.	\$	\$
18	Start-Up and Miscellaneous	1	L.S.	\$	\$
<b>TOTAL BID AMOUNT</b>					

**Dollars**

**(In Words)**

**ALTERNATE # 1:**

The CONTRACTOR shall provide a unit bid price to have the pump station in operation. Included in this unit price will be the modification or replacement of the meter box lid. If the CONTRACTOR chooses to replace the meter box lids they shall be replaced with a lid equal to the one in these specifications and shall be approved by the ENGINEER. The Alternate #1 bid provided by the CONTRACTOR will be in addition to the Base Bid if Alternate #1 is chosen.

ITEMS - ALTERNATE BID #1		QUANTITY	UNIT	UNIT PRICE	ESTIMATED TOTAL PRICE
A1-1	5/8" x 3/4" Service Connection w/Pressure Regulator	600	L.F.	\$	\$
<b>TOTAL ALTERNATE #1 BID AMOUNT</b>					
					<b>Dollars</b>
<b>(In Words)</b>					

**ARTICLE 6 – TIME OF COMPLETION**

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

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
  - B. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
  - C. Required Bidder Qualification Statement with supporting data; and Qualification Statement (Items 1 thru 4 and item 11 with Schedules A and B only)
  - D. If bid amount exceeds \$10,000, signed Compliance Statement (RD400-6). Refer to specific equal opportunity requirements set forth in the Supplemental General Conditions;
  - E. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transactions (AD-1048);
  - F. If Bid amount exceeds \$100,000, signed RD Instructions 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans.
  - G. Non-collusion Affidavit of Prime Bidder

**ARTICLE 8 – DEFINED TERMS**

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

## ARTICLE 9 – BID SUBMITTAL

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

By:

*[Signature]*

*[Printed name]*

*(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest:

*[Signature]*

*[Printed name]*

Title:

Submittal Date:

Address for giving notices:

Telephone Number:

Fax Number:

Contact Name and e-mail address:

Bidder's License No.:

*(where applicable)*

## BID BOND

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

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

Greene County Rural Water District  
323A 6th Street, Carrollton, IL, 62016

BID

Bid Due Date:

Description (*Project Name— Include Location*): Greene County Rural Water - Booster Pump Station  
Contract K A new 225 gpm booster pump station, at the existing site, and related appurtenances.

BOND

Bond Number:

Date:

Penal sum \_\_\_\_\_ \$ \_\_\_\_\_  
(Words) (Figures)

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

**BIDDER**

**SURETY**

\_\_\_\_\_  
Bidder's Name and Corporate Seal

\_\_\_\_\_  
Surety's Name and Corporate Seal

By:

Signature

Print Name

Title

Attest:

Signature

Title

By:

Signature (Attach Power of Attorney)

Print Name

Title

Attest:

Signature

Title

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

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

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
  - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2 All Bids are rejected by Owner, or
  - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.



## QUALIFICATIONS STATEMENT

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

**1. SUBMITTED BY:**

Official Name of Firm:

\_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2. SUBMITTED TO:**

\_\_\_\_\_

**3. SUBMITTED FOR:**

\_\_\_\_\_

Owner:

\_\_\_\_\_

Project Name:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**TYPE OF WORK:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**4. CONTRACTOR'S CONTACT INFORMATION**

Contact Person:

\_\_\_\_\_

Title:

\_\_\_\_\_

Phone:

\_\_\_\_\_

Email:

\_\_\_\_\_

**5. AFFILIATED COMPANIES:**

Name:

\_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**6. TYPE OF ORGANIZATION:**

☐ SOLE PROPRIETORSHIP

Name of Owner:

\_\_\_\_\_

Doing Business As:

\_\_\_\_\_

Date of Organization:

\_\_\_\_\_

☐ PARTNERSHIP

Date of Organization:

\_\_\_\_\_

Type of Partnership:

\_\_\_\_\_

Name of General Partner(s):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

☐ CORPORATION

State of Organization:

\_\_\_\_\_

Date of Organization:

\_\_\_\_\_

Executive Officers:

- President:

\_\_\_\_\_

- Vice President(s):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- Treasurer:

\_\_\_\_\_

- Secretary:

\_\_\_\_\_

☐ LIMITED LIABILITY COMPANY

State of Organization:

\_\_\_\_\_

Date of Organization:

\_\_\_\_\_

Members:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

☐ JOINT VENTURE

Sate of Organization:

\_\_\_\_\_

Date of Organization:

\_\_\_\_\_

Form of Organization:

\_\_\_\_\_

Joint Venture Managing Partner

- Name:

\_\_\_\_\_

- Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Joint Venture Managing Partner

- Name:

\_\_\_\_\_

- Address:

\_\_\_\_\_

\_\_\_\_\_

Joint Venture Managing Partner

- Name:

\_\_\_\_\_

- Address:

\_\_\_\_\_

\_\_\_\_\_

**7. LICENSING**

Jurisdiction: \_\_\_\_\_

Type of License: \_\_\_\_\_

License Number: \_\_\_\_\_

Jurisdiction: \_\_\_\_\_

Type of License: \_\_\_\_\_

License Number: \_\_\_\_\_

**8. CERTIFICATIONS**

**CERTIFIED BY:**

Disadvantage Business Enterprise: \_\_\_\_\_

Minority Business Enterprise: \_\_\_\_\_

Woman Owned Enterprise: \_\_\_\_\_

Small Business Enterprise: \_\_\_\_\_

Other (\_\_\_\_\_): \_\_\_\_\_

**9. BONDING INFORMATION**

Bonding Company: \_\_\_\_\_

Address: \_\_\_\_\_

Bonding Agent: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Aggregate Bonding Capacity: \_\_\_\_\_

Available Bonding Capacity as of date of this submittal: \_\_\_\_\_

EJCDC® C-451, Qualifications Statement.

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and American Society of Civil Engineers. All rights reserved.

**10. FINANCIAL INFORMATION**

Financial Institution: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Account Manager: \_\_\_\_\_

Phone: \_\_\_\_\_

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

**11. CONSTRUCTION EXPERIENCE:**

Current Experience:

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

Previous Experience:

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

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

☐ YES ☐ NO

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

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

☐ YES ☐ NO

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

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

☐ YES ☐ NO

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

**12. SAFETY PROGRAM:**

Name of Contractor's Safety Officer: \_\_\_\_\_

Include the following as attachments:

Provide as an Attachment Contractor's (and Contractor's proposed Subcontractors and Suppliers furnishing or performing Work having a value in excess of 10 percent of the total amount of the Bid) OSHA No. 300- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

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

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

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

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

YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____
YEAR	_____	EMR	_____

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

YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____
YEAR	_____	TRFR	_____

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

YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____
YEAR	_____	TOTAL NUMBER OF MAN-HOURS	_____

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

YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____
YEAR	_____	DART	_____

**13. EQUIPMENT:**

MAJOR EQUIPMENT:

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

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

NAME OF ORGANIZATION: \_\_\_\_\_

BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATED: \_\_\_\_\_

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_

NOTARY PUBLIC - STATE OF \_\_\_\_\_

MY COMMISSION EXPIRES: \_\_\_\_\_

REQUIRED ATTACHMENTS

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



## SCHEDULE A

### CURRENT EXPERIENCE

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

## SCHEDULE B

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

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

## SCHEDULE B

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

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

### SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

[illegible]

**CERTIFICATION FOR CONTRACTS, GRANTS, AND LOANS**

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

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

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

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

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

\_\_\_\_\_  
(name)

\_\_\_\_\_  
(date)

\_\_\_\_\_  
(title)

o0o

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## COMPLIANCE STATEMENT

This statement relates to a proposed contract with \_\_\_\_\_

\_\_\_\_\_  
(Name of borrower or grantee)

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

1. I ☐ have, ☐ have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I ☐ have, ☐ have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.  
  
☐ If the proposed contract is for \$50,000 or more: or ☐ If the proposed nonconstruction contract is for \$50,000 or more and I have 50 or more employees, I also represent that:
3. I ☐ have, ☐ have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, ☐ I have, ☐ have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

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

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

---

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

---

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

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

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

DATE \_\_\_\_\_

\_\_\_\_\_  
*(Signature of Bidder or Prospective Contractor)*

\_\_\_\_\_  
*Address (including Zip Code)*



## NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of \_\_\_\_\_)

County of \_\_\_\_\_) ss.

\_\_\_\_\_, being first duly sworn, deposes and says that:

1. He is \_\_\_\_\_ of \_\_\_\_\_ the Bidder that has submitted the attached Bid;
2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;
3. Such Bid is genuine and is not a collusive or sham Bid;
4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the **Greene County Rural Water District** (Local Public Agency) or any person interested in the proposed Contract; and
5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees or parties in interest, including this affiant.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
(Name & Title)

Subscribed and sworn to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_

\_\_\_\_\_

(Notary Public)

My Commission Expires: \_\_\_\_\_

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## United States Department of Agriculture

AD-1048

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

*The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552(a), as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 C.F.R. §§ 180.300, 180.355, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.*

*According to the Paperwork Reduction Act of 1995 an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0505-0027. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal and civil fraud privacy, and other statutes may be applicable to the information provided.*

***(Read Instructions On Page Two Before Completing Certification)***

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

ORGANIZATION NAME

PR/AWARD NUMBER OR PROJECT NAME

NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S)

SIGNATURE(S)

DATE

*The U.S. Department of Agriculture (USDA) prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, political beliefs, genetic information, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Assistant Secretary for Civil Rights, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, S.W., Stop 9410, Washington, DC 20250-9410, or call toll-free at (866) 632-9992 (English) or (800) 877-8339 (TDD) or (866) 377-8642 (English Federal-relay) or (800) 845-6136 (Spanish Federal-relay). USDA is an equal opportunity provider, employer and lender.*

### **Instructions for Certification**

- (1) By signing and submitting this form, the prospective lower tier participant is providing the certification set out on page 1 in accordance with these instructions.
- (2) The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
- (3) The prospective lower tier participant shall provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (4) The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549, at 2 C.F.R. Parts 180 and 417. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
- (5) The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- (6) The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- (7) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the System for Award Management (SAM) database.
- (8) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- (9) Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

## NOTICE OF AWARD

---

Date of Issuance:

Owner: Greene County Rural Water District      Owner's Contract No.:  
Engineer: Heneghan and Associates, P.C.      Engineer's Project No.: 00355-405  
Project: Greene County Rural Water - Booster Pump Station      Contract Name: Contract K

Bidder:

Bidder's Address:

### TO BIDDER:

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

Greene County Rural Water - Booster Pump Station Contract K A new 225 gpm booster pump station, at the existing site, and related appurtenances.

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

Five (5) unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

4 sets of the Drawings will be delivered separately from the other Contract Documents.

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

1. Deliver to Owner Five (5) counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security performance and payment bonds and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

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

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

---

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

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THIS AGREEMENT is by and between Greene County Rural Water District (“Owner”) and  
 (“Contractor”).

actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$800.00 or actual damages whichever is greater for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$800.00 or actual damages whichever is greater for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
4. Milestones: Contractor shall pay Owner \$800.00 or actual damages whichever is greater for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved.

#### 4.04 *Special Damages*

[Deleted]

### **ARTICLE 5 – CONTRACT PRICE**

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

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

### **ARTICLE 6 – PAYMENT PROCEDURES**

#### 6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

#### 6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the third Thursday of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
  1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract



- a. 90 percent of Work completed (with the balance being retainage); If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
  - b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion of the entire construction to be provided under the Contract Documents, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

#### 6.03 *Final Payment*

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

### **ARTICLE 7 – INTEREST**

7.01 All amounts not paid when due shall bear interest at the maximum legal rate.

### **ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS**

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
  - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
  - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the General Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the General Conditions, especially with respect to Technical Data in such reports and drawings.
  - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; and the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures

of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.

- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

## **ARTICLE 9 – CONTRACT DOCUMENTS**

### **9.01 Contents**

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to , inclusive).
  - 2. Performance bond (pages  to , inclusive).
  - 3. Payment bond (pages  to , inclusive).
  - 4. Other bonds.
    - a.  (pages  to , inclusive).
  - 5. General Conditions (pages  to , inclusive).
  - 6. Specifications as listed in the table of contents of the Project Manual.
  - 7. Drawings (not attached but incorporated by reference) consisting of  sheets with each sheet bearing the following general title:  [or] the Drawings listed on the attached sheet index.
  - 8. Addenda (numbers  to , inclusive).
  - 9. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages  to , inclusive).
  - 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    - a. Notice to Proceed.
    - b. Work Change Directives.
    - c. Change Orders.
    - d. Field Orders.

- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

## **ARTICLE 10 – MISCELLANEOUS**

### **10.01 Terms**

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

### **10.02 Assignment of Contract**

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

### **10.03 Successors and Assigns**

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

### **10.04 Severability**

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

### **10.05 Contractor's Certifications**

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

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

#### 10.06 *Other Provisions*

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

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

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

OWNER:

CONTRACTOR:

\_\_\_\_\_

\_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

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

Attest: \_\_\_\_\_

Attest: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address for giving notices:

Address for giving notices:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

License No.: \_\_\_\_\_  
*(where applicable)*

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

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**CERTIFICATE OF OWNER'S ATTORNEY AND AGENCY CONCURRENCE**

**CERTIFICATE OF OWNER'S ATTORNEY**

**PROJECT NAME:** Greene County Rural Water - Booster Pump Station

**CONTRACTOR NAME:** \_\_\_\_\_

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

\_\_\_\_\_  
Name Date

**AGENCY CONCURRENCE**

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

\_\_\_\_\_  
Agency Representative Date

\_\_\_\_\_  
Name

**Intentionally Blank**



## ENGINEER'S CERTIFICATION OF FINAL PLANS AND SPECIFICATIONS

PROJECT NAME: \_\_\_\_\_ Greene County Rural Water - Booster Pump  
Station \_\_\_\_\_

The final Drawings and Specifications, other assembled Construction Contract Documents, bidding-related documents (or requests for proposals or other construction procurement documents), and any other Final Design Phase deliverables, comply with all requirements of the U.S. Department of Agriculture, Rural Utilities Service, to the best of my knowledge and professional judgment.

If the Engineers Joint Contract Documents Committee (EJCDC) documents have been used, all modifications required by RUS Bulletin 1780-26 have been made in accordance the terms of the license agreement, which states in part that the Engineer "must plainly show all changes to the Standard EJCDC Text, using 'Track Changes' (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions." Such other means may include attachments indicating changes (e.g. Supplementary Conditions modifying the General Conditions).

Seth W. Elliott

Engineer

5-17-18

Date

Seth W. Elliott Project Manager

Name and Title

**Intentionally Blank**

## PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

Greene County Rural Water District  
323A 6th Street, Carrollton, IL, 62016

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* A new 225 gpm booster pump station, at the existing site, and related appurtenances.

### BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

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

### CONTRACTOR AS PRINCIPAL

### SURETY

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

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

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

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

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

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

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

#### 14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims

for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

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

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

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

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

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

16. Modifications to this Bond are as follows:

**Intentionally Blank**

## PAYMENT BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

Greene County Rural Water District

323A 6th Street, Carrollton, IL, 62016

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* A new 225 gpm booster pump station, at the existing site, and related appurtenances.

### BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

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

### CONTRACTOR AS PRINCIPAL

### SURETY

\_\_\_\_\_  
Contractor's Name and Corporate Seal

\_\_\_\_\_  
Surety's Name and Corporate Seal

By: \_\_\_\_\_  
Signature

By: \_\_\_\_\_  
Signature *(attach power of attorney)*

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

Attest: \_\_\_\_\_  
Signature

Attest: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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



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

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

## 16. Definitions

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

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and

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

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

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

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

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

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

18. Modifications to this Bond are as follows:

---

**NOTICE TO PROCEED**

---

Owner:	Greene County Rural Water District	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	Heneghan and Associates, P.C.	Engineer's Project No.:	00355-405
Project:	Greene County Rural Water - Booster Pump Station	Contract Name:	Contract K
		Effective Date of Contract:	

---

**TO CONTRACTOR:**

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

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

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

---

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract. The Change Order form to be used on this Project is EJCDC C-941. Agency approval is required before Change Orders are effective.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision

regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, [Supplementary Conditions](#), and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—~~The part of the Contract that amends or supplements these General Conditions.~~ N/A
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in these Standard General Conditions~~in the Supplementary Conditions~~, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer,

ordering an addition, deletion, or revision in the Work. A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

49. Abnormal Weather Conditions—Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.
50. Agency—The Project is financed in whole or in part by USDA Rural Utilities Service pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the Agency for these documents is USDA Rural Development.

## 1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
  1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
  1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
  1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
  1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or

some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 – PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Standard General Conditions~~Supplementary Conditions~~ or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Standard General Conditions~~Supplementary Conditions~~ or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### 2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor ~~four~~five ~~printed~~ copies of the Contract Documents(including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### 2.03 *Before Starting Construction*

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

### 2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

### 2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.



## 2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

## **ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE**

### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

### 3.02 *Reference Standards*

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

performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies:*

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

### 3.04 *Requirements of the Contract Documents*

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

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

#### 3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

### ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

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

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

#### 4.02 *Starting the Work*

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

#### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer

whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. ~~abnormal weather conditions~~; Abnormal Weather Conditions;
  - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with

reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### **5.02 *Use of Site and Other Areas***

- A. *Limitation on Use of Site and Other Areas:*
  - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers,

directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

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

#### 5.03 *Subsurface and Physical Conditions*

- A. No Reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to the Owner.

~~B.— *Reports and Drawings:* The Supplementary Conditions identify:~~

- ~~1.— those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;~~
- ~~2.— those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and~~
- ~~3.— Technical Data contained in such reports and drawings.~~

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

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

- 2. ~~other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or~~
- ~~any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.~~
- ~~The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:~~
  - ~~Report dated [May 21, 2013, prepared by Aye and Bea, Consulting Engineers, Philadelphia, Pa., entitled: "Results of Investigation of Subsoil Conditions and Professional Recommendations for Foundations of Iron Foundry at South and Front Streets, Pembrig, NJ", consisting of 42 pages.] The Technical Data contained in such report upon whose accuracy Contractor may rely are [here indicate any such Technical Data, or state "none."] [or] [those indicated in the definition of Technical Data in the General Conditions.]~~
  - ~~Report dated [May 2, 2000, prepared by Ecks, Wye and Tsze, Inc., Baltimore, Md., entitled: "Tests of Water Quality in Mixer River at Pembrig, NJ", consisting of 26 pages.] The Technical Data contained in such report upon whose accuracy Contractor may rely are [here indicate any such Technical Data, or state "none."] [or] [as indicated in the definition of Technical Data in the General Conditions.]~~
- ~~The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:~~
  - ~~Drawings dated [March 2, 2000, of Route 24A Overpass Abutment, prepared by Dea & Associates, Inc., Wilmington, Del., entitled: "Record Drawings: Route No. 24A Overpass Abutment", consisting of 12 sheets numbered 001 to 012, inclusive.] None of the contents of such drawings is Technical Data on whose accuracy Contractor may~~
- ~~B. may examine copies of reports and drawings identified immediately above that were not included with the Bidding Documents at [redacted] [insert location] during regular business hours, or may request copies from Engineer, at the cost of reproduction~~

#### 5.04 Differing Subsurface or Physical Conditions

- A. **Notice by Contractor:** If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
  - 1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
  - 2. is of such a nature as to require a change in the Drawings or Specifications; or
  - 3. differs materially from that shown or indicated in the Contract Documents; or
  - 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform

any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
  - 1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
    - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
    - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
  - 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
    - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
    - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
    - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
  - 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.



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

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Standard General Conditions ~~Supplementary Conditions~~:
  1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments:*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
  - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
  - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
  - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
  - d. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

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

B. Reliance by Contractor on Technical Data Authorized: Not Used.

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

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

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

~~— The following reports regarding Hazardous Environmental Conditions at the Site are known to Owner:~~

~~— Report dated December 10, 2012, prepared by Eph Environmental Consultants, Princeton, N.J., entitled: "Results of Investigation of Conditions at Iron Foundry at South and Front Streets, Pembrig, NJ", consisting of 27 pages. The Technical Data contained in such report upon whose accuracy Contractor may rely are /here indicate any such Technical Data or state "none."/~~

~~— The following drawings regarding Hazardous Environmental Conditions at the Site are known to Owner:~~

~~— Drawings dated November 27, 2002, prepared by Eph Environmental Consultants, Princeton, N.J., entitled: “Iron Foundry Site Conditions”, consisting of 5 sheets numbered [ ] to [ ], inclusive.~~

- ~~1) All of the information in such drawings constitutes Technical Data on whose accuracy Contractor may rely, except for [ ] appearing on Drawing No. [ ] and [ ] appearing on Drawing No. [ ].~~

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

- ~~1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or~~
- ~~2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or~~
- ~~3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.~~

~~C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.~~

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

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

~~Environmental Condition, and impose a set-off against payments to account for the associated costs.~~

- ~~F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.~~
- ~~G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.~~
- ~~H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.~~
- ~~I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~
- ~~J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.~~
- ~~K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.~~

## ARTICLE 6 – BONDS AND INSURANCE

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

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, ~~the Supplementary Conditions,~~ or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required ~~by the Supplementary Conditions or~~ other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article ~~and in the Supplementary Conditions.~~
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. ~~Unless a different standard is indicated in the Supplementary Conditions, all~~ All companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, ~~in the Supplementary Conditions,~~ or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or

any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, ~~the Supplementary Conditions~~, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

#### 6.03 *Contractor's Insurance*

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



4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified ~~in the Supplementary Conditions or~~ elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, ~~and any individuals or entities identified in the Supplementary Conditions~~; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
  2. be written for not less than the limits of liability provided in this Article ~~and in the Supplementary Conditions~~, or required by Laws or Regulations, whichever is greater.
  3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
  5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.
- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:



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

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>1,000,000</u>
Bodily injury by disease, aggregate	\$ <u>1,000,000</u>
Employer's Liability:	
Bodily injury, each accident	\$ <u>100,000</u>
Bodily injury by disease, each employee	\$ <u>100,000</u>
Bodily injury/disease aggregate	\$ <u>500,000</u>
<del>For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:</del>	<del>\$ _____</del>
Foreign voluntary worker compensation	<u>Statutory</u>

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

General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>1,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>

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

Bodily Injury:	
Each person	\$ <u>1,000,000</u>
Each accident	\$ <u>1,000,000</u>
Property Damage:	
Each accident	\$ <u>1,000,000</u>
<del>for</del>	
<del>Combined Single Limit of</del>	<del>\$ _____</del>

4. Excess or Umbrella Liability:

Per Occurrence	\$ <u>5,000,000</u>
General Aggregate	\$ <u>5,000,000</u>

5. Contractor's Pollution Liability:

Each Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>



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

6. Additional Insureds: Owner and Engineer

7. Contractor's Professional Liability:

Each Claim	\$ <u>N/A</u>
Annual Aggregate	\$ <u>N/A</u>

8. *Waiver of Subrogation – ~~{OWNER}~~ Greene County Rural Water District and Heneghan and Associates, P.C. shall be additional insured on a direct primary basis on the Waiver of Subrogation*

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* ~~Unless otherwise provided in the Supplementary Conditions,~~ Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be ~~provided in the Supplementary Conditions or~~ required by Laws and Regulations). This insurance shall:
- include the Owner and Contractor as named insureds, and all Subcontractors, ~~and any individuals or entities required by the Supplementary Conditions~~ to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, ~~and any corresponding Supplementary~~

~~Conditions,~~ the parties required to be insured shall collectively be referred to as “insureds.”

2. be written on a builder’s risk “all risk” policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood); ~~and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.~~ If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
6. extend to cover damage or loss to insured property while in transit.
7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder’s risk insurance.
8. allow for the waiver of the insurer’s subrogation rights, as set forth below.
9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
10. not include a co-insurance clause.
11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
12. include performance/hot testing and start-up.
13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.

- B. *Notice of Cancellation or Change*: All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

#### 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, ~~all individuals or entities identified in the Supplementary Conditions as insureds,~~ and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
  2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, ~~all individuals or entities identified in the Supplementary Conditions as insureds,~~ the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

#### 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

### ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

#### 7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary

to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

#### 7.02 *Labor; Working Hours*

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

- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

- ~~B.C.~~ Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments under Article 15.

#### 7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. ~~Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted,~~ Contractor may request that Engineer authorize the use of other items of material or

equipment, or items from other proposed suppliers under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an “or equal” item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
  - a. in the exercise of reasonable judgment Engineer determines that:
    - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
    - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
    - 3) it has a proven record of performance and availability of responsive service;  
~~and~~
    - ~~4) it is not objectionable to Owner. [Deleted]~~
    - 4) Must be compatible with existing components and equipment.
  - b. Contractor certifies that, if approved and incorporated into the Work:
    - 1) there will be no increase in cost to the Owner or increase in Contract Times;  
and
    - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor’s Expense:* Contractor shall provide all data in support of any proposed “or equal” item at Contractor’s expense.
- C. *Engineer’s Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each “or-equal” request. Engineer may require Contractor to furnish additional data about the proposed “or-equal” item. Engineer will be the sole judge of acceptability. No “or-equal” item will be ordered, furnished, installed, or utilized until Engineer’s review is complete and Engineer determines that the proposed item is an “or-equal”, which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer’s Determination:* Neither approval nor denial of an “or-equal” request shall result in any change in Contract Price. The Engineer’s denial of an “or-equal” request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

#### 7.05 Substitutes

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



items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, ~~as supplemented by the Specifications~~, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
  - a. shall certify that the proposed substitute item will:
    - 1) perform adequately the functions and achieve the results called for by the general design,
    - 2) be similar in substance to that specified, and
    - 3) be suited to the same use as that specified.
  - b. will state:
    - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
    - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
    - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
  - c. will identify:
    - 1) all variations of the proposed substitute item from that specified, and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself



and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

#### 7.06 Concerning Subcontractors, Suppliers, and Others

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.
- B. ~~Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.~~ [Deleted]
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. ~~Owner also may require Contractor to retain specific replacements; provided, however, that~~ Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an

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

- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
  - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
  - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

#### **7.07 Patent Fees and Royalties**

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

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

- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 7.08 *Permits*

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

#### 7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.
- B. Owner is exempt from payment of sales and compensating use taxes of the State of Illinois and of cities and counties thereof on all materials to be incorporated into the Work.
  - 1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.
  - ~~1-2.~~ Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by the Contractor, or to supplies or materials not incorporated into the Work.

#### 7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.11 *Record Documents*

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

#### 7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. ~~The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.~~
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

#### 7.13 *Safety Representative*

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

#### 7.14 *Hazard Communication Programs*

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

#### 7.15 *Emergencies*

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

Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
  - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
  - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
  - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

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

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*

- a. Contractor shall submit the number of Samples required in the Specifications.
- b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
  5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
  6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
  7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
  8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures:*
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
  2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will

record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

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

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

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

#### 7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other



dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
  - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
  - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

#### 7.19 *Delegation of Professional Design Services*

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

Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.

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

## ARTICLE 8 – OTHER WORK AT THE SITE

### 8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be ~~set forth in the Supplementary Conditions or~~ provided to Contractor prior to the start of any such other work:
  - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. the extent of such authority and responsibilities.

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

### 8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## ARTICLE 9 – OWNER’S RESPONSIBILITIES

### 9.01 *Communications to Contractor*

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

### 9.02 *Replacement of Engineer*

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

### 9.03 *Furnish Data*

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

### 9.04 *Pay When Due*

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

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

- A. Owner’s duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner’s duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

### 9.06 *Insurance*

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

### 9.07 *Change Orders*

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

### 9.08 *Inspections, Tests, and Approvals*

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

### 9.09 *Limitations on Owner’s Responsibilities*

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

### 9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Evidence of Financial Arrangements*

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

9.12 *Safety Programs*

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

**ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION**

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided [in the Supplementary Conditions](#), and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided [in the Supplementary Conditions](#).

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
  2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.
  3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
  4. Liaison:
    - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
  5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
  6. Shop Drawings and Samples:
    - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
    - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
    - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
  7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
  8. Review of Work and Rejection of Defective Work:
    - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
    - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract

Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Inspections, Tests, and System Start-ups:

- a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

- a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

11. Reports:

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

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

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
- b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
- 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
- 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
- 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
- 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
- 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
- 7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
- ~~1-8.~~ Authorize Owner to occupy the Project in whole or in part.

10.04 *Rejecting Defective Work*

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

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

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

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such



decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

#### 10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

#### 10.09 *Compliance with Safety Program*

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

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

#### 11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
  - 1. *Change Orders:*
    - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
    - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3)

other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.

2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

#### 11.04 *Change of Contract Price*

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

- B. An adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
  2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
  3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
  2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
    - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
    - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
    - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
    - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

#### 11.05 *Change of Contract Times*

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

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

B.C. The Contractor shall be responsible for the cost of any additional expenses occurred by the Owner as a result of the time extension, including but not limited to Engineering Services, Resident Project Representative, Owner's Representative, Legal, Administrative, any other costs incurred, etc.

#### 11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
  2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
  3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

#### 11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
  4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.
- C. All Contract Change Orders must be concurred in by Agency before they are effective.

#### 11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### ARTICLE 12 – CLAIMS

#### 12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for

resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation:*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

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

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

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

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

### 13.01 *Cost of the Work*

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

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the

Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
  - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
  - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
  - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
  - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
  - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
  - g. The cost of utilities, fuel, and sanitary facilities at the Site.
  - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
  - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
  - 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
  - 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
  - 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
  - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.



- E. *Documentation*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

### 13.02 Allowances

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

### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:~~Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:~~
  - 1. If the extended price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price (based on estimated quantities at the time of Contract

~~formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent from the quantity of such item indicated in the Agreement; and the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;~~

2. ~~If there is no corresponding adjustment with respect to any other item of Work; and there is no corresponding adjustment with respect to any other item of Work; and~~
3. ~~If Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.~~

## **ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK**

### **14.01 Access to Work**

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

### **14.02 Tests, Inspections, and Approvals**

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
  1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

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

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer

as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

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

#### 14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

### 15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by ~~a bill of sale, invoice, or other~~ documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
  - 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
  - 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement. No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

4. The Application for Payment form to be used on this Project is EJCDC C-620. The Agency must approve all Applications for Payment before payment is made.

C. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

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

1. The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become ten (10) days after transfer of corresponding funds to the Owner's bank account, and the Owner will make payment to the Contractor.

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
  - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. the Work is defective, requiring correction or replacement;



- g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. the Contract Price has been reduced by Change Orders;
  - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
  - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

#### 15.02 Contractor's Warranty of Title

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

#### 15.03 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.



- ~~B.C.~~ If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- ~~C.D.~~ At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- ~~D.E.~~ After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- ~~E.F.~~ Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

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

#### 15.06 *Final Payment*

##### A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
  - d. a list of all disputes that Contractor believes are unsettled; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner

at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

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

**15.07 *Waiver of Claims***

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

**15.08 *Correction Period***

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  1. correct the defective repairs to the Site or such other adjacent areas;

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

## **ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

### ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

#### 17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
  1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
  1. elect in writing to invoke the dispute resolution process provided for in these Standard General Conditions~~the Supplementary Conditions~~; or
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in these Standard General Conditions~~the Supplementary Conditions~~ or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## ARTICLE 18 – MISCELLANEOUS

### 18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### 18.02 *Computation of Times*

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

### 18.03 *Cumulative Remedies*

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

### 18.04 *Limitation of Damages*

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

### 18.05 *No Waiver*

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

### 18.06 *Survival of Obligations*

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

### 18.07 *Controlling Law*

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

### 18.08 *Headings*

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

#### 18.09 Tribal Sovereignty.

- A. No provision of this Agreement will be construed by any of the signatories as abridging or debilitating any sovereign powers of the {insert name of Tribe} Tribe; affecting the trust-beneficiary relationship between the Secretary of the Interior, Tribe, and Indian landowner(s); or interfering with the government-to-government relationship between the United States and the Tribe.

### **ARTICLE 19 – FEDERAL REQUIREMENTS**

#### 19.01 Agency Not a Party

- A. This Contract is expected to be funded in part with funds provided by agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

#### 19.02 Contract Approval

- A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the following "Certificate of Owner's Attorney" (Exhibit I of RUS Bulletin 1780-26) before Owner submits the executed Contract Documents to Agency for approval.
- B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

#### 19.03 Conflict of Interest

- A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in or other interest in or a tangible personal benefit from the Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

#### 19.04 Gratuities

- A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.
- B. In the event this Contract is terminated as provided in paragraph 19.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.



#### 19.05 Audit and Access to Records

- A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Engineer which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.

#### 19.06 Small, Minority, and Women's Businesses

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of:
- (1) including qualified small, minority and women's businesses on solicitation lists;
  - (2) assuring that small, minority and women's businesses are solicited whenever they are potential sources;
  - (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women's businesses;
  - (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women's businesses;
  - (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce;

#### 19.07 Anti-Kickback

- A. Contractor shall comply with the Copeland Anti-Kickback Act (40 U.S.C. 3145) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

#### 19.08 Clean Air Act (42U.S.C. 7401-767q.)and the Federal Water Pollution Control Act (33 U.S.C.1251-1387) as amended:

- A. Contractor to agree to comply with all applicable standards, orders, or requirements issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q.)and the Federal Water Pollution Control Act as amended (33 USC 1251 -1387) Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

#### 19.09 State Energy Policy

- A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

#### 19.10 Equal Employment Opportunity

The Contract is considered a federally assisted construction contract. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under CFR 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30FR 12319,12935,3 CFR Part, 1964-1965 Comp., p.339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60 “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

#### 19.11 Byrd Anti- Lobbying Amendment (31 U.S.C. 1352)

A. Contractors that apply or bid for an award exceeding \$100,000 must file the required certification (RD Instruction 1940-Q, Exhibit A-1). The Contractor certifies to the Owner and every subcontractor certifies to the Contractor that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining the Contract if it is covered by 31 U.S.C. 1352. The Contractor and every subcontractor must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

#### 19.12 Environmental Requirements

A. When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:

1. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
2. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.
3. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).
4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.
5. Mitigation Measures –The following environmental mitigation measures are required on this Project. {These mitigation measures are as follows: Insert mitigation measures if any.}

19.13 Contract Work Hours and Safety Standard Act (40U.S.C. 3701-3708):

- A. Where applicable, for contracts awarded by the Owner in excess of \$100,00 that involve the employment of mechanics or laborers, the Contractor must comply with 40U.S.C. 3702 and 3704, as supplemented by the Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor must compute the wages of every mechanic and laborer on the basis of standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market or contracts for transportation or transmission of intelligence.

19.14 Debarment and Suspension(Executive Orders 12549 and 12689)

- A. A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

19.15 Procurement of Recovered Materials:

- A. The Contractor must comply with 2 CFR Part 200.322, "Procurement of recovered materials."

**ARTICLE 20 – STATE OF ILLINOIS REQUIREMENTS**

20.01 State Prevailing Wage Rate Requirements

- A. The Contractor shall be required to pay a minimum of the State Prevailing Wage Rates for the project area, in accordance with Illinois State Law.

20.02 Employment of Illinois Workers on Public Works

- A. If at the time this contract is executed, or if during the term of this contract, there is excessive unemployment in Illinois as defined in the employment of Illinois Workers on Public Works Act, 30ILCS 570-0.01 et seq., as two consecutive months of unemployment exceeding 5%, the Contractor agrees to employ Illinois Laborers. An Illinois Laborer is defined as any person who has resided in Illinois for at least thirty (30) days and intends to become or remain an Illinois resident.

20.03 Substance Abuse Prevention on Public Works Projects Act

- A. The Contractor shall be required to comply with the Substance Abuse Prevention on Public Works Projects Act (Public Act 095-0635; HB 1855). As such, the Contractor may be required to sign the Owner's Substance Abuse Prevention Program Certification.

## ARTICLE 21 – OTHER REQUIREMENTS

### 21.01 *Certified Payroll*

- A. Contractor shall submit Certified Payroll to the Owner with each pay request.

# Wage Rates

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<b>Prevailing Wage rates for Greene County Effective Sept. 1, 2017</b>												
<b>Trade Title</b>	<b>Region</b>	<b>Type</b>	<b>Class</b>	<b>Base Wage</b>	<b>Fore- man Wage</b>	<b>M-F OT</b>	<b>OSA</b>	<b>OSH</b>	<b>H/W</b>	<b>Pension</b>	<b>Vacation</b>	<b>Training</b>
ASBESTOS ABT-GEN	All	ALL		\$31.09	\$31.59	1.5	1.5	2	\$6.30	\$15.55	\$0.00	\$0.80
ASBESTOS ABT-MEC	All	BLD		\$31.56	\$32.56	1.5	1.5	2	\$8.25	\$3.00	\$0.00	\$0.00
BOILERMAKER	All	BLD		\$36.50	\$39.00	1.5	1.5	2	\$7.07	\$22.82	\$1.50	\$0.65
BRICK MASON	All	BLD		\$30.00	\$31.50	1.5	1.5	2	\$8.75	\$10.87	\$0.00	\$0.85
CARPENTER	All	BLD		\$31.39	\$33.64	1.5	1.5	2	\$8.45	\$17.00	\$0.00	\$0.54
CARPENTER	All	HWY		\$32.15	\$33.90	1.5	1.5	2	\$8.45	\$17.00	\$0.00	\$0.52
CEMENT MASON	All	ALL		\$33.25	\$34.25	1.5	1.5	2	\$9.90	\$13.50	\$0.00	\$0.30
CERAMIC TILE FNSHER	All	BLD		\$30.48	\$30.48	1.5	1.5	2	\$8.57	\$8.58	\$0.00	\$0.10
ELECTRIC PWR EQMT OP	All	ALL		\$42.62	\$0.00	1.5	1.5	2	\$7.25	\$11.94	\$0.00	\$0.43
ELECTRIC PWR GRNDMAN	All	ALL		\$27.68	\$0.00	1.5	1.5	2	\$7.25	\$7.75	\$0.00	\$0.28
ELECTRIC PWR LINEMAN	All	ALL		\$49.98	\$52.35	1.5	1.5	2	\$7.25	\$14.00	\$0.00	\$0.50
ELECTRIC PWR TRK DRV	All	ALL		\$32.04	\$0.00	1.5	1.5	2	\$7.25	\$8.97	\$0.00	\$0.32
ELECTRICIAN	All	ALL		\$41.15	\$43.40	1.5	1.5	2	\$9.00	\$11.14	\$0.00	\$0.21
ELECTRONIC SYS TECH	All	BLD		\$30.85	\$32.85	1.5	1.5	2	\$9.00	\$6.70	\$0.00	\$0.40
ELEVATOR CONSTRUCTOR	All	BLD		\$46.04	\$51.80	2	2	2	\$14.43	\$8.96	\$3.68	\$0.60
GLAZIER	All	BLD		\$35.91	\$37.91	1.5	1.5	2	\$6.25	\$9.16	\$0.00	\$0.68
HT/FROST INSULATOR	All	BLD		\$38.42	\$39.42	1.5	1.5	2	\$9.65	\$12.11	\$3.90	\$0.64
IRON WORKER	All	BLD		\$31.29	\$33.29	1.5	1.5	2	\$9.61	\$14.48	\$0.00	\$0.66
IRON WORKER	All	HWY		\$32.52	\$34.27	1.5	1.5	2	\$9.61	\$15.14	\$0.00	\$0.70
LABORER	All	ALL		\$30.59	\$31.09	1.5	1.5	2	\$6.30	\$14.15	\$0.00	\$0.80
LATHER	All	BLD		\$31.39	\$33.64	1.5	1.5	2	\$8.45	\$17.00	\$0.00	\$0.54
MACHINIST	All	BLD		\$45.35	\$47.85	1.5	1.5	2	\$7.26	\$8.95	\$1.85	\$0.00
MARBLE FINISHERS	All	BLD		\$30.48	\$30.48	1.5	1.5	2	\$8.57	\$8.58	\$0.00	\$0.10
MARBLE MASON	All	BLD		\$30.00	\$31.50	1.5	1.5	2	\$8.75	\$10.87	\$0.00	\$0.85
MILLWRIGHT	All	BLD		\$31.74	\$33.99	1.5	1.5	2	\$8.45	\$17.11	\$0.00	\$0.54

MILLWRIGHT	All	HWY		\$33.58	\$35.33	1.5	1.5	2	\$8.20	\$16.67	\$0.00	\$0.52
OPERATING ENGINEER	All	BLD	1	\$37.70	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	2	\$36.57	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	3	\$32.09	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	4	\$32.15	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	5	\$31.82	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	6	\$40.25	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	7	\$40.55	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	8	\$40.83	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	BLD	9	\$38.70	\$40.70	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	1	\$36.20	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	2	\$35.07	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	3	\$30.59	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	4	\$30.65	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	5	\$30.32	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	6	\$38.75	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	7	\$39.05	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	8	\$39.33	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
OPERATING ENGINEER	All	HWY	9	\$37.20	\$39.20	1.5	1.5	2	\$12.35	\$18.00	\$0.00	\$1.00
PAINTER	All	BLD		\$31.25	\$32.75	1.5	1.5	2	\$5.90	\$10.52	\$0.00	\$0.70
PAINTER	All	HWY		\$32.45	\$33.95	1.5	1.5	2	\$5.90	\$10.52	\$0.00	\$0.70
PAINTER OVER 30FT	All	BLD		\$32.25	\$33.75	1.5	1.5	2	\$5.60	\$9.77	\$0.00	\$0.70
PAINTER PWR EQMT	All	BLD		\$32.25	\$33.75	1.5	1.5	2	\$5.90	\$10.52	\$0.00	\$0.70
PAINTER PWR EQMT	All	HWY		\$33.45	\$34.95	1.5	1.5	2	\$5.90	\$10.52	\$0.00	\$0.70
PILEDRIIVER	All	BLD		\$32.29	\$34.64	1.5	1.5	2	\$8.45	\$17.00	\$0.00	\$0.54
PILEDRIIVER	All	HWY		\$32.15	\$33.90	1.5	1.5	2	\$8.45	\$17.00	\$0.00	\$0.52
PIPEFITTER	All	BLD		\$41.41	\$43.48	1.5	2	2	\$5.00	\$8.75	\$0.00	\$0.35
PLASTERER	All	BLD		\$31.75	\$32.75	1.5	1.5	2	\$9.90	\$9.40	\$0.00	\$0.30
PLUMBER	All	BLD		\$41.41	\$43.48	1.5	2	2	\$5.00	\$8.75	\$0.00	\$0.35
ROOFER	All	BLD		\$32.00	\$34.00	1.5	1.5	2	\$9.00	\$8.15	\$0.00	\$0.39
SHEETMETAL WORKER	All	All		\$33.05	\$34.55	1.5	1.5	2	\$8.83	\$8.04	\$1.99	\$0.42



SPRINKLER FITTER	All	BLD		\$42.31	\$45.31	1.5	2	2	\$8.72	\$12.95	\$0.00	\$1.10
STONE MASON	All	BLD		\$30.00	\$31.50	1.5	1.5	2	\$8.75	\$10.87	\$0.00	\$0.85
TERRAZZO FINISHER	All	BLD		\$30.48	\$30.48	1.5	1.5	2	\$8.57	\$8.58	\$0.00	\$0.10
TERRAZZO MASON	All	BLD		\$31.98	\$31.98	1.5	1.5	2	\$8.57	\$8.58	\$0.00	\$0.10
TILE MASON	All	BLD		\$31.98	\$31.98	1.5	1.5	2	\$8.57	\$8.58	\$0.00	\$0.10
TRUCK DRIVER	All	ALL	1	\$36.26	\$40.15	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	ALL	2	\$36.77	\$40.15	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	ALL	3	\$37.05	\$40.15	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	ALL	4	\$37.36	\$40.15	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	ALL	5	\$38.35	\$40.15	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	O&C	1	\$29.01	\$32.12	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	O&C	2	\$29.42	\$32.12	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	O&C	3	\$29.64	\$32.12	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	O&C	4	\$29.89	\$32.12	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TRUCK DRIVER	All	O&C	5	\$30.68	\$32.12	1.5	1.5	2	\$12.16	\$6.10	\$0.00	\$0.25
TUCK POINTER	All	BLD		\$30.00	\$31.50	1.5	1.5	2	\$8.75	\$10.87	\$0.00	\$0.85

#### Legend

**M-F OT** Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.

**OSA** Overtime pay required for every hour worked on Saturdays

**OSH** Overtime pay required for every hour worked on Sundays and Holidays

**H/W** Health/Welfare benefit

#### Explanations GREENE COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

Oil and chip resealing (O&C) means the application of road oils and liquid asphalt to coat an existing road surface, followed by application of aggregate chips or gravel to coated surface, and subsequent rolling of material to seal the surface.

#### EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

#### CERAMIC TILE FINISHER, MARBLE FINISHER, TERRAZZO FINISHER

Assisting, helping or supporting the tile, marble and terrazzo mechanic by performing their historic and traditional work assignments required to complete the proper installation of the work covered by said crafts. The term "Ceramic" is used for naming the classification only and is in no way a limitation of the product handled. Ceramic takes into consideration most hard tiles.

#### ELECTRONIC SYSTEMS TECHNICIAN

Installation, service and maintenance of low-voltage systems which utilizes the transmission and/or transference of voice, sound, vision, or digital for commercial, education, security and entertainment purposes for the following: TV monitoring and surveillance, background/foreground music, intercom and telephone interconnect, field programming, inventory control systems, microwave transmission, multi-media, multiplex, radio page, school, intercom and sound burglar alarms and low voltage master clock systems.

Excluded from this classification are energy management systems, life safety systems, supervisory controls and data acquisition systems not intrinsic with the above listed systems, fire alarm systems, nurse call systems and raceways exceeding fifteen feet in length.

#### OPERATING ENGINEER - BUILDING

GROUP I. Cranes, Dragline, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, Asphalt Spreading Machines, All Locomotives, Cable Ways or Tower Machines, Hoists, Hydraulic Backhoes, Ditching Machines or Backfiller, Cherrypickers, Overhead Cranes, Roller - Steam or Gas, Concrete Pavers, Excavators, Concrete Breakers, Concrete Pumps, Bulk Cement Plants, Cement Pumps, Derrick-Type Drills, Boat Operators, Motor Graders or Pushcats, Scoops or Tournapulls, Bulldozers, Endloaders or Fork Lifts, Power Blade or Elevating Graders, Winch Cats, Boom or Winch Trucks or Boom Tractors, Pipe Wrapping or Painting Machines, Asphalt Plant Engineer, Journeyman Lubricating Engineer, Drills (other than Derrick Type), Mud Jacks, or Well Drilling

Machines, Boring Machines or Track Jacks, Mixers, Conveyors (Two), Air Compressors (Two), Water Pumps regardless of size (Two), Welding Machines (Two), Siphons or Jets (Two), Winch Heads or Apparatuses (Two), Light Plants (Two), All Tractors regardless of size (straight tractor only), Fireman on Stationary Boilers, Automatic Elevators, Form Grading Machines, Finishing Machines, Power Sub-Grader or Ribbon Machines, Longitudinal Floats, Distributor Operators on Trucks, Winch Heads or Apparatuses (One), Mobil Track air and heaters (two to five), Heavy Equipment Greaser, Relief Operator, Assistant Master Mechanic and Heavy Duty Mechanic, self-propelled concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair and greasing of all diesel hammers, the operation and set-up of bidwells, water blasters of all sizes and their clutches, hydraulic jacks where used for hoisting, operation of log skidders, iceolators used on and off of pipeline, condor cranes, bow boats, survey boats, bobcats and all their attachments, skid steer loaders and all their attachments, creter cranes, batch plants, operator (all sizes), self propelled roto mills, operation of conveyor systems of any size and any configuration, operation, repair and service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, Nail launchers when mounted on a machine or self-propelled, operation of con-cover machines, and all Operators except those listed below).

GROUP II. Assistant Operators.

GROUP III. Air Compressors (One), Water Pumps, regardless of Size (One), Waterblasters (one), Welding Machine (One), Mixers (One Bag), Conveyor (One), Siphon or Jet (One), Light Plant (One), Heater (One), Immobile Track Air (One), and Self Propelled Walk-Behind Rollers.

GROUP IV. Asphalt Spreader Oilers, Fireman on Whirlies and Heavy Equipment Oilers, Truck Cranes, Dredges, Monigans, Large Cranes - (Over 65-ton rated capacity) Concrete Plant Oiler, Blacktop Plant Oiler, and Creter Crane Oiler (when required).

GROUP V. Oiler.

GROUP VI. Operators on equipment with Booms, including jibs, 100 feet and over, and less than 150 feet long.

GROUP VII. Operators on equipment with Booms, including jibs, 150 feet and over, and less than 200 feet long.

GROUP VIII. Operators on Equipment with Booms, including jibs, 200 feet and over; Tower Cranes; and Whirlie Cranes.

GROUP IX. Master Mechanic

OPERATING ENGINEERS - Highway

GROUP I. Cranes, Dragline, Shovels, Skimmer Scoops, Clamshells or Derrick Boats, Pile Drivers, Crane-Type Backhoes, Asphalt Plant Operators, Concrete Plant Operators, Dredges, Asphalt Spreading Machines, All Locomotives, Cable Ways or Tower Machines, Hoists, Hydraulic Backhoes, Ditching Machines or Backfiller, Cherrypickers, Overhead Cranes, Roller - Steam or Gas, Concrete Pavers, Excavators, Concrete Breakers,

Concrete Pumps, Bulk Cement Plants, Cement Pumps, Derrick-Type Drills, Boat Operators, Motor Graders or Pushcats, Scoops or Tournapulls, Bulldozers, Endloaders or Fork Lifts, Power Blade or Elevating Graders, Winch Cats, Boom or Winch Trucks or Boom Tractors, Pipe Wrapping or Painting Machines, Asphalt Plant Engineer, Journeyman Lubricating Engineer, Drills (other than Derrick Type), Mud Jacks, Well Drilling Machines, Boring Machines, Track Jacks, Mixers, Conveyors (Two), Air Compressors (Two), Water Pumps regardless of size (Two), Welding Machines (Two), Siphons or Jets (Two), Winch Heads or Apparatuses (Two), Light Plants (Two), All Tractors regardless of size (straight tractor only), Fireman on Stationary Boilers, Automatic Elevators, Form Grading Machines, Finishing Machines, Power Sub-Grader or Ribbon Machines, Longitudinal Floats, Distributor Operators on Trucks, Winch Heads or Apparatuses (One), Mobil Track air and heaters (two to five), Heavy Equipment Greaser, Relief Operator, Assistant Master Mechanic and Heavy Duty Mechanic, self-propelled concrete saws of all types and sizes with their attachments, gob-hoppers, excavators all sizes, the repair and greasing of all diesel hammers, the operation and set-up of bidwells, water blasters of all sizes and their clutches, hydraulic jacks where used for hoisting, operation of log skidders, iceolators used on and off of pipeline, condor cranes, bow boats, survey boats, bobcats and all their attachments, skid steer loaders and all their attachments, creter cranes, batch plants, operator (all sizes), self propelled roto mills, operation of conveyor systems of any size and any configuration, operation, repair and service of all vibratory hammers, all power pacs and their controls regardless of location, curtains or brush burning machines, stump cutter machines, Nail launchers when mounted on a machine or self-propelled, operation of con-cover machines, and all Operators (except those listed below).

GROUP II. Assistant Operators.

GROUP III. Air Compressors (One), Water Pumps, regardless of Size (One), Waterblasters (one), Welding Machine (One), Mixers (One Bag), Conveyor (One), Siphon or Jet (One), Light Plant (One), Heater (One), Immobile Track Air (One), and Self Propelled Walk-Behind Rollers.

GROUP IV. Asphalt Spreader Oilers, Fireman on Whirlies and Heavy Equipment Oilers, Truck Cranes, Dredges, Monigans, Large Cranes - (Over 65-ton rated capacity) Concrete Plant Oiler, Blacktop Plant Oiler, and Creter Crane Oiler (when required).

GROUP V. Oiler.

GROUP VI. Operators on equipment with Booms, including jibs, 100 feet and over, and less than 150 feet long.

GROUP VII. Operators on equipment with Booms, including jibs, 150 feet and over, and less than 200 feet long.

GROUP VIII. Operators on Equipment with Booms, including jibs, 200 feet and over; Tower Cranes; and Whirlie Cranes.

GROUP IX. Mechanic

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION Class 1. Drivers on 2 axle trucks hauling less than 9 ton. Air compressor and welding machines and brooms, including those pulled by separate units, truck driver helpers, warehouse employees, mechanic helpers, greasers and tiremen, pickup trucks when hauling materials, tools, or workers to and from and on-the-job site, and fork lifts up to 6,000 lb. capacity.

Class 2. Two or three axle trucks hauling more than 9 ton but hauling less than 16 ton. A-frame winch trucks, hydrolift trucks, vector trucks or similar equipment when used for transportation purposes. Fork lifts over 6,000 lb. capacity, winch trucks, four axle combination units, and ticket writers.

Class 3. Two, three or four axle trucks hauling 16 ton or more. Drivers on water pulls, articulated dump trucks, mechanics and working forepersons, and dispatchers. Five axle or more combination units.

Class 4. Low Boy and Oil Distributors.

Class 5. Drivers who require special protective clothing while employed on hazardous waste work. TRUCK DRIVER - OIL AND CHIP RESEALING ONLY.

This shall encompass laborers, workers and mechanics who drive contractor or subcontractor owned, leased, or hired pickup, dump, service, or oil distributor trucks. The work includes transporting materials and equipment (including but not limited to, oils, aggregate supplies, parts, machinery and tools) to or from the job site; distributing oil or liquid asphalt and aggregate; stock piling material when in connection with the actual oil and chip contract. The Truck Driver (Oil & Chip Resealing) wage classification does not include supplier delivered materials.

#### Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

#### LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

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**CONSTRUCTION CONTRACTORS  
AFFIRMATIVE ACTION REQUIREMENTS  
GOALS (%) FOR MINORITY AND WOMEN PARTICIPATION  
As Published in the Friday, October 3, 1980 Federal Register**

**Goals for Participation of Women (Entire State) 6.9**

**Goals for Minority Participation:**

<b>Adams</b>	<b>3.1</b>	<b>Edgar</b>	<b>4.8</b>	<b>Johnson</b>	<b>11.4</b>	<b>Menard</b>	<b>4.5</b>	<b>Shelby</b>	<b>4.0</b>
<b>Alexander</b>	<b>11.4</b>	<b>Edwards</b>	<b>3.5</b>	<b>Kane</b>	<b>19.6</b>	<b>Mercer</b>	<b>3.4</b>	<b>Stark</b>	<b>3.3</b>
<b>Bond</b>	<b>11.4</b>	<b>Effingham</b>	<b>11.4</b>	<b>Kankakee</b>	<b>9.1</b>	<b>Monroe</b>	<b>14.7</b>	<b>St. Clair</b>	<b>14.7</b>
<b>Boone</b>	<b>6.3</b>	<b>Fayette</b>	<b>11.4</b>	<b>Kendall</b>	<b>18.4</b>	<b>Montgomery</b>	<b>11.4</b>	<b>Stephenson</b>	<b>4.6</b>
<b>Brown</b>	<b>3.1</b>	<b>Ford</b>	<b>4.8</b>	<b>Knox</b>	<b>3.3</b>	<b>Morgan</b>	<b>4.0</b>	<b>Tazewell</b>	<b>4.4</b>
<b>Bureau</b>	<b>18.4</b>	<b>Franklin</b>	<b>11.4</b>	<b>Lake</b>	<b>19.6</b>	<b>Moultrie</b>	<b>4.0</b>	<b>Union</b>	<b>11.4</b>
<b>Calhoun</b>	<b>11.4</b>	<b>Fulton</b>	<b>3.3</b>	<b>LaSalle</b>	<b>18.4</b>	<b>Ogle</b>	<b>4.6</b>	<b>Vermilion</b>	<b>4.8</b>
<b>Carroll</b>	<b>3.4</b>	<b>Gallatin</b>	<b>3.5</b>	<b>Lawrence</b>	<b>3.5</b>	<b>Peoria</b>	<b>4.4</b>	<b>Wabash</b>	<b>3.5</b>
<b>Cass</b>	<b>4.0</b>	<b>Greene</b>	<b>11.4</b>	<b>Lee</b>	<b>4.6</b>	<b>Perry</b>	<b>11.4</b>	<b>Warren</b>	<b>3.3</b>
<b>Champaign</b>	<b>7.8</b>	<b>Grundy</b>	<b>18.4</b>	<b>Livingston</b>	<b>18.4</b>	<b>Piatt</b>	<b>4.8</b>	<b>Washington</b>	<b>11.4</b>
<b>Clark</b>	<b>2.5</b>	<b>Hamilton</b>	<b>3.5</b>	<b>Logan</b>	<b>4.0</b>	<b>Pike</b>	<b>3.1</b>	<b>Wayne</b>	<b>11.4</b>
<b>Clay</b>	<b>11.4</b>	<b>Hancock</b>	<b>3.4</b>	<b>Macon</b>	<b>7.6</b>	<b>Pope</b>	<b>5.2</b>	<b>White</b>	<b>3.5</b>
<b>Clinton</b>	<b>14.7</b>	<b>Hardin</b>	<b>5.2</b>	<b>Macoupin</b>	<b>11.4</b>	<b>Pulaski</b>	<b>11.4</b>	<b>Whiteside</b>	<b>3.4</b>
<b>Coles</b>	<b>4.8</b>	<b>Henderson</b>	<b>3.4</b>	<b>Madison</b>	<b>14.7</b>	<b>Putnam</b>	<b>18.4</b>	<b>Will</b>	<b>20.9</b>
<b>Cook</b>	<b>19.6</b>	<b>Henry</b>	<b>4.6</b>	<b>Marion</b>	<b>11.4</b>	<b>Randolph</b>	<b>11.4</b>	<b>Williamson</b>	<b>11.4</b>
<b>Crawford</b>	<b>2.5</b>	<b>Iroquois</b>	<b>18.4</b>	<b>Marshall</b>	<b>3.3</b>	<b>Richland</b>	<b>11.4</b>	<b>Winnebago</b>	<b>6.3</b>
<b>Cumberland</b>	<b>4.8</b>	<b>Jackson</b>	<b>11.4</b>	<b>Mason</b>	<b>3.3</b>	<b>Rock Island</b>	<b>4.6</b>	<b>Woodford</b>	<b>4.4</b>
<b>DeKalb</b>	<b>18.4</b>	<b>Jasper</b>	<b>11.4</b>	<b>Massac</b>	<b>5.2</b>	<b>Saline</b>	<b>3.5</b>		
<b>DeWitt</b>	<b>4.0</b>	<b>Jefferson</b>	<b>11.4</b>	<b>McDonough</b>	<b>3.3</b>	<b>Sangamon</b>	<b>4.5</b>		
<b>Douglas</b>	<b>4.8</b>	<b>Jersey</b>	<b>11.4</b>	<b>McHenry</b>	<b>19.6</b>	<b>Schuyler</b>	<b>3.3</b>		
<b>DuPage</b>	<b>19.6</b>	<b>JoDaviess</b>	<b>0.5</b>	<b>McLean</b>	<b>2.5</b>	<b>Scott</b>	<b>4.0</b>		

(10-22-97) PN 152

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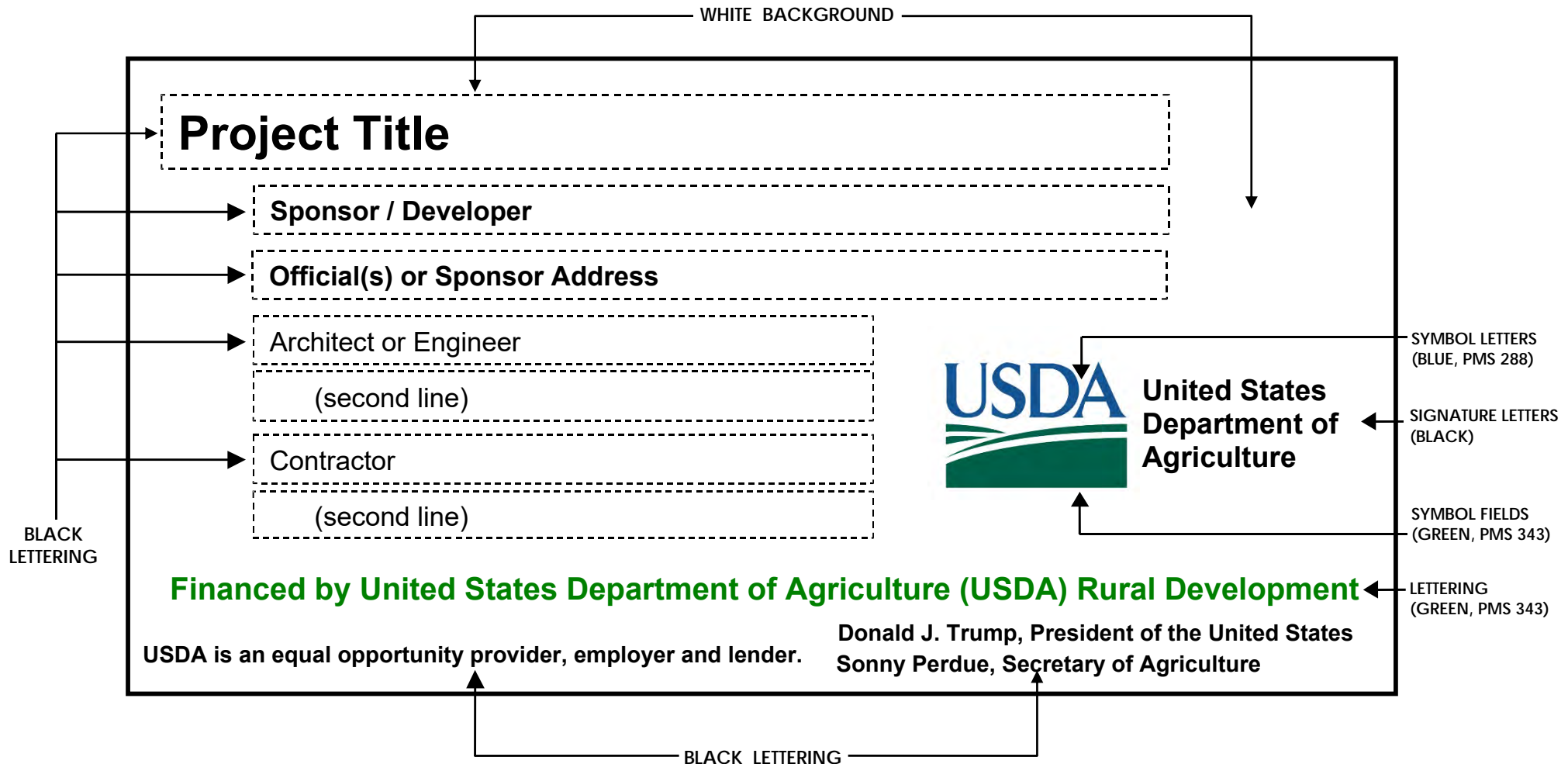


## USDA Rural Development Construction Sign

In accordance with attached Exhibit A, the Contractor shall each erect one sign at a prominent location as determined by the Owner at the Pre-Construction Meeting prior to the start of construction.

The contractor will remove the temporary construction sign(s) when all construction has been completed.

## TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS



**Sign Dimensions:** 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")

PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)

**Recommended Construction Sign Fonts:** Helvetica, Arial, or Myriad Pro



### Change Order Summary

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

is recommended by: \_\_\_\_\_ (Engineer) \_\_\_\_\_ (Date)

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

is approved by: \_\_\_\_\_ (Owner) \_\_\_\_\_ (Date)

Approved by: \_\_\_\_\_ (Funding or Financing Entity (if applicable)) \_\_\_\_\_ (Date)

### Progress Estimate - Unit Price Work

## Contractor's Application

[illegible]

## Stored Material Summary

## Contractor's Application

[illegible]

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NAME OF CONTRACTOR		OR SUBCONTRACTOR		ADDRESS				OMB No.: 1235-0008 Expires: 01/31/2015			
--------------------	--	------------------	--	---------	--	--	--	---	--	--	--

PAYROLL NO.		FOR WEEK ENDING				PROJECT AND LOCATION				PROJECT OR CONTRACT NO.			
-------------	--	-----------------	--	--	--	----------------------	--	--	--	-------------------------	--	--	--

(1)  NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2)  NO. OF WITHHOLDING EXEMPTIONS	(3)  WORK CLASSIFICATION	OT OR ST.	(4) DAY AND DATE							(5)  TOTAL HOURS	(6)  RATE OF PAY	(7)  GROSS AMOUNT EARNED	(8)  DEDUCTIONS						(9)  NET WAGES PAID FOR WEEK
				HOURS WORKED EACH DAY										FICA	WITH- HOLDING TAX			OTHER	TOTAL DEDUCTIONS	
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Date \_\_\_\_\_

I, \_\_\_\_\_  
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by \_\_\_\_\_ on the \_\_\_\_\_  
(Contractor or Subcontractor)  
\_\_\_\_\_ ; that during the payroll period commencing on the \_\_\_\_\_  
(Building or Work)  
\_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, and ending the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,  
all persons employed on said project have been paid the full weekly wages earned, that no rebates have  
been or will be made either directly or indirectly to or on behalf of said  
\_\_\_\_\_ from the full  
(Contractor or Subcontractor)  
weekly wages earned by any person and that no deductions have been made either directly or indirectly  
from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part  
3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948,  
63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(2) That any payrolls otherwise under this contract required to be submitted for the above period are  
correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the  
applicable wage rates contained in any wage determination incorporated into the contract; that the classifications  
set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship  
program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and  
Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered  
with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:  
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in  
the above referenced payroll, payments of fringe benefits as listed in the contract  
have been or will be made to appropriate programs for the benefit of such employees,  
except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid,  
as indicated on the payroll, an amount not less than the sum of the applicable  
basic hourly wage rate plus the amount of the required fringe benefits as listed  
in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR  
SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE  
31 OF THE UNITED STATES CODE.



## PARTIAL WAIVER OF LIEN

To All Whom It May Concern:

**WHEREAS**, the undersigned has been employed by (A) \_\_\_\_\_  
\_\_\_\_\_ to  
furnish labor and materials for (B) \_\_\_\_\_  
\_\_\_\_\_..under  
a contract (C) \_\_\_\_\_ for the  
improvement of the premises described as (D) \_\_\_\_\_  
\_\_\_\_\_ in the  
\_\_\_\_\_ (City-Village) of \_\_\_\_\_, County of \_\_\_\_\_, State of \_\_\_\_\_ of which  
\_\_\_\_\_ is the Owner.

**NOW, THEREFORE**, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for and in consideration of the sum of  
(E) \_\_\_\_\_ Dollars (\$\_\_\_\_\_)

paid simultaneously herewith, the receipt whereof is hereby acknowledged by the undersigned, the undersigned does hereby waive and release to the extent only of the aforesaid amount, any lien rights to, or claim of lien with respect to and on said above-described premises, and the improvements thereon, and on the monies or other considerations due or to become due from the owner, by virtue of said contract, on account of labor, services, materials, fixtures, apparatus or machinery furnished by the undersigned to or for the above-described premises, but only to the extent of the payment aforesaid.

(SEAL)

(F) \_\_\_\_\_

(name of sole ownership, corporation or partnership)

(Affix corporate  
Seal here)

(SEAL)

\_\_\_\_\_

(Signature)

TITLE: \_\_\_\_\_

### INSTRUCTIONS FOR PARTIAL WAIVER

- (A) Name person or firm with whom you agreed to furnish either labor, or services, or materials, or both.
- (B) Fill in nature and extent of work: strike the word labor or the word materials if not in your contract.
- (C) If you have more than one contract on the same premises, describe the contract by number, if available, date and extent of work.
- (D) Furnish an accurate enough description of the improvement and location of the premises so that it can be distinguished from any other property.
- (E) Amount shown should be the amount actually received on that date.
- (F) If waiver is for a corporation, corporate name should be used, corporate seal affixed and title of officer signing waiver should be set forth; if waiver is for a partnership, the partnership name should be used, partner should sign and designate himself as partner.

Construction Industry Affairs Committee of Chicago.

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## FINAL WAIVER OF LIEN

To All Whom It May Concern:

**WHEREAS**, the undersigned has been employed by (A) \_\_\_\_\_  
\_\_\_\_\_ to  
furnish labor and materials for (B) \_\_\_\_\_  
\_\_\_\_\_..under  
a contract (C) \_\_\_\_\_ for the  
improvement of the premises described as (D) \_\_\_\_\_  
\_\_\_\_\_ in the  
\_\_\_\_\_ (City-Village) of \_\_\_\_\_, County of \_\_\_\_\_, State of \_\_\_\_\_ of which  
\_\_\_\_\_ is the Owner.

**NOW, THEREFORE**, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, for and in consideration of the sum of  
(E) \_\_\_\_\_ Dollars (\$\_\_\_\_\_)

paid simultaneously herewith, the receipt whereof is hereby acknowledged by the undersigned, the undersigned does hereby waive and release any lien rights to, or claim of lien with respect to and on said above-described premises, and the improvements thereon, and on the monies or other considerations due or to become due from the owner, on account of labor, services, materials, fixtures, apparatus or machinery heretofore or which may hereafter be furnished by the undersigned to or for the above-described premises, by virtue of said contract.

(F) \_\_\_\_\_ (SEAL)  
(name of sole ownership, corporation or partnership)

(Affix corporate  
Seal here)

\_\_\_\_\_  
(Signature)

TITLE: \_\_\_\_\_

### INSTRUCTIONS FOR FINAL WAIVER

- (A) Person or firm with whom you agreed to furnish either labor, or services, or materials, or both.
- (B) Fill in nature and extent of work: strike the word labor or the word materials if not in your contract.
- (C) If you have more than one contract on the same premises, describe the contract by number, if available, date and extent of work.
- (D) Furnish an accurate enough description of the improvement and location of the premises so that it can be distinguished from any other property.
- (E) Amount shown should be the amount actually received and equal to total amount of contract as adjusted.
- (F) If waiver is for a corporation, corporate name should be used, corporate seal affixed and title of officer signing waiver should be set forth; if waiver is for a partnership, the partnership name should be used, partner should sign and designate himself as partner.

Approved By The  
Construction Industry Affairs Committee (CIAC).

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## CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Greene County Rural Water District	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Heneghan and Associates, P.C.	Engineer's Project No.: 00355-405
Project: Greene County Rural Water - Booster Pump Station	Contract Name:

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

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

### Date of Substantial Completion

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

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

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

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

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

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

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

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

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**Work Change Directive No.**

Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Contractor is directed to proceed promptly with the following change(s):

Description:

Attachments: *[List documents supporting change]*

**Purpose for Work Change Directive:**

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- ☐ Non-agreement on pricing of proposed change.
- ☐ Necessity to proceed for schedule or other Project reasons.

**Estimated Change in Contract Price and Contract Times (non-binding, preliminary):**

Contract Price	\$	[increase] [decrease].
----------------	----	------------------------

Contract Time	days	[increase] [decrease].
---------------	------	------------------------

**Basis of estimated change in Contract Price:**

- |   |                                     |
|---|-------------------------------------|
| <input type="checkbox"/> Lump Sum         | <input type="checkbox"/> Unit Price |
| <input type="checkbox"/> Cost of the Work | <input type="checkbox"/> Other      |

RECOMMENDED:

AUTHORIZED BY:

RECEIVED:

By:

Engineer (Authorized Signature)

By:

Owner (Authorized Signature)

By:

Contractor (Authorized Signature)

Title:

Title:

Title:

Date:

Date:

Date:

Approved by Funding Agency (if applicable)

By:

Date:

Title:

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Change Order No. \_\_\_\_\_

Date of Issuance:	Effective Date:
Owner: Greene County Rural Water District	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Heneghan and Associates, P.C.	Engineer's Project No.: 00355-405
Project: Greene County Rural Water - Booster Pump Station	Contract Name:

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

Description:

Attachments: *[List documents supporting change]*

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

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

Approved by Funding Agency (if applicable)

By: \_\_\_\_\_ Date: \_\_\_\_\_  
Title: \_\_\_\_\_

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**Field Order No.** \_\_\_\_\_

Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Contractor is hereby directed to promptly execute this Field Order, issued in accordance with General Conditions Paragraph 11.01, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

\_\_\_\_\_  
Specification(s)

\_\_\_\_\_  
Drawing(s) / Detail(s)

Description:

Attachments:

ISSUED:

RECEIVED:

By:

\_\_\_\_\_  
Engineer (Authorized Signature)

By:

\_\_\_\_\_  
Contractor (Authorized Signature)

Title:

Title:

Date:

Date:

Copy to: Owner

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# **WATER AND SEWER LINE CONSTRUCTION STANDARDS AND POLICIES**

**Established by the  
ILLINOIS DEPARTMENT OF AGRICULTURE**

The following standards and policies will serve to minimize the negative agricultural impacts that may result due to water and sewer line construction.

The standards and policies only apply to construction activities occurring partially or wholly on privately owned agricultural land. They do not apply to construction activities occurring on highway or railroad right-of-way, or on publicly owned land. The only exceptions are the construction standards relating to the repair of drainage tile (Item No. 3). The tile line construction standards shall be implemented regardless of where drainage tile is encountered.

## **Conditions**

The mitigative actions specified in the construction standards and policies will be implemented in accordance with the conditions listed below:

- A. All mitigative actions are subject to change by landowners, provided such changes are acceptable to the Project Sponsor.
- B. The Project Sponsor may negotiate with landowners to carry out the mitigative actions that landowners wish to perform themselves. The landowners will receive the area commercial rate for their labor and machinery costs.
- C. All mitigative actions, unless otherwise specified, will be implemented within 45 days of completion of water or sewer line facilities on any affected property, weather and landowner permitting. Temporary repairs will be made by the Project Sponsor during the construction process as needed to minimize the risk of additional property damage that may result from an extended construction time period.
- D. All mitigative actions will extend to associated future construction, maintenance, and repairs.
- E. The Project Sponsor will provide a copy of the Water and Sewer Line Construction Standards and Policies to all owners of agricultural land that will be impacted by water and/or sewer line construction, and will do at the time of easement contract negotiations.

## **Definitions**

Project Sponsor	- Entity proposing the construction of water or sewer lines and their related appurtenances.
Agricultural land	- Land used for cropland, pastureland, managed woodlands, truck gardens, orchards, nurseries, and other related agricultural enterprises dependent upon soil integrity.
Cropland	- Land used for growing row crops, small grains, or hay; includes land which was formerly used as cropland, but is currently in a government set-aside or conservation reserve program.

- Water or Sewer Line - Includes water transmission and distribution lines, sewer trunk lines, sewer gravity flow lines, interceptors, or force mains and any related appurtenances.
- Landowner - Person(s) responsible for making decisions regarding the restoration of the land adversely impacted by a water or sewer line.
- Prime Farmland - Agricultural land comprised of soils that are defined by the USDA Natural Resources Conservation Service as being "Prime" soils (generally considered the most productive soils with the least input of nutrients and management).
- Right-of-Way - Includes the permanent and temporary easements that the Project Sponsor acquires for the purpose of constructing water or sewer lines across privately owned land.

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## WATER AND SEWER LINE CONSTRUCTION STANDARDS AND POLICIES

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### 1. Water and Sewer Line Depth

- A. All water and sewer lines which are placed in trenches 24 inches in width or less will be buried with a minimum of 42 inches **(60 inches are suggested by the Illinois Department of Agriculture)** of top cover where they cross cropland.
- B. All water and sewer lines that are placed in trenches greater than 24 inches in width will be buried with 60 inches of topcover where they cross cropland.
- C. In terrain where bedrock prevents the placement of any water or sewer lines at the depths specified in 1.A. or 1.B. above, the water or sewer lines will be buried as deep as is practicable and feasible.

### 2. Topsoil Replacement

***The following standards apply only when water and sewer lines are buried in trenches that are greater than 24 inches wide.***

- A. The actual depth of the topsoil, will first be stripped from the area to be excavated for a water or sewer line trench, all bore pits, and other areas of excavation.
- B. All subsoil material that is removed from the trench will be placed in a second stockpile that is separate from the topsoil stockpile.
- C. In backfilling the trench and other excavated areas, the stockpiled subsoil material will be placed back into the trench first. The topsoil will be replaced last so that it remains the top layer of soil.
- D. The topsoil and subsoil must be replaced within the trench and other excavated area so that after settling occurs, the land's original contour (with an allowance for settling) will be achieved.

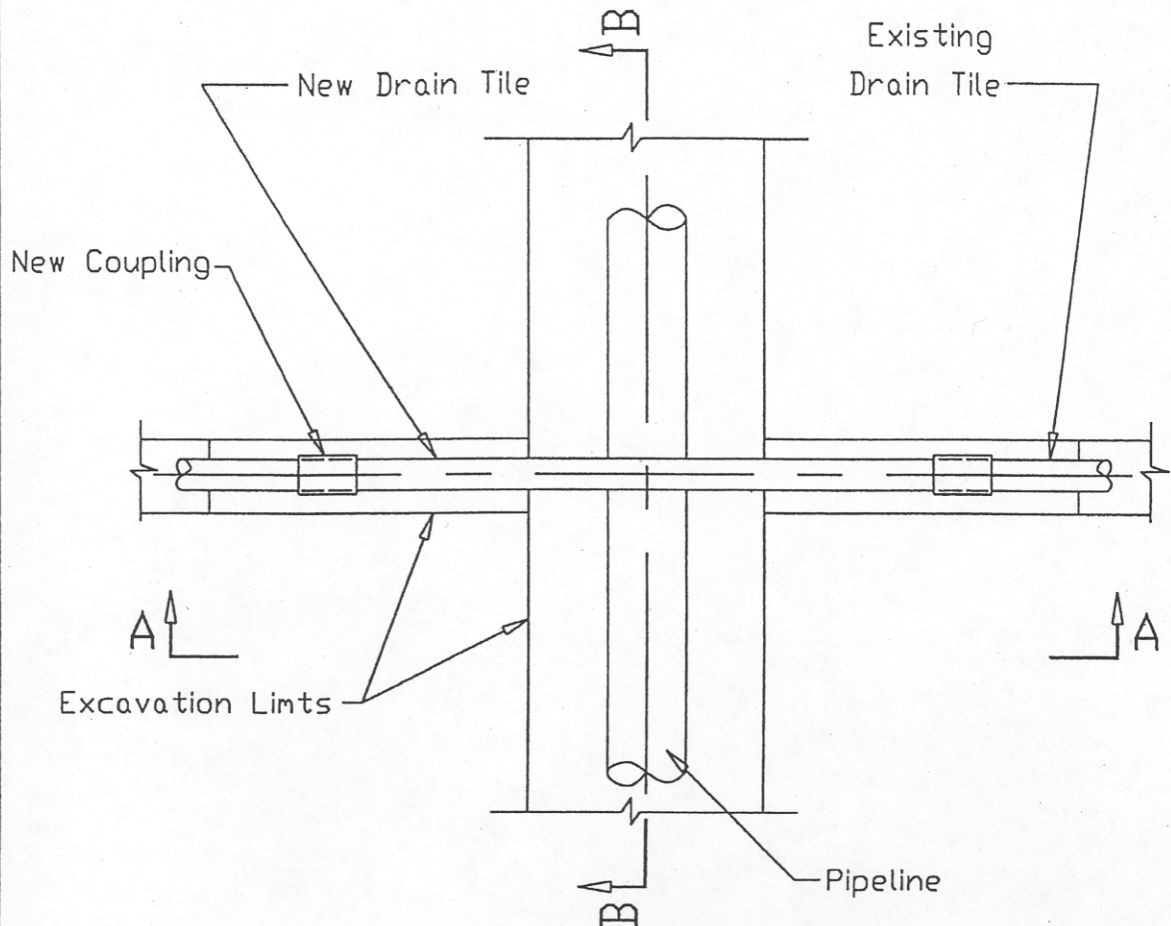
- E. The subsoil displaced by the water or sewer line must be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is acceptable to the landowner.

### **3. Repair Of Damaged Tile Lines**

If underground drainage tile is damaged by water or sewer line construction, it must be repaired in a manner that assures the tile line's proper operation at the point of repair. The following standards and policies shall apply to the tile line repairs.

- A. The Project Sponsor will endeavor to locate all tile lines prior to water or sewer line construction so repairs can be made if necessary. The Project Sponsor will contact affected landowners/tenants for their knowledge of tile line locations prior to any water or sewer line construction. All identified tile lines will be flagged to alert construction crews to the possible need for tile line repairs.
- B. All tile lines shall be repaired with materials of the same or better quality as that which was damaged.
- C. All damaged tile lines shall be immediately and temporarily repaired until such time that permanent repairs can be made.
- D. Where tile lines are severed by water or sewer line trenches, non-compactable support must be added around the repaired tile lines in accordance with the attached detail drawings.
  - 1. Within the trench, maximum rock size shall be 1 1/2 inch river gravel or 1 inch crushed stone for backfill under all tile lines.
  - 2. There must be a minimum of one foot of separation between a tile line and the water or sewer line whether the line passes over or under the tile line.
  - 3. In no instance will the grade of a tile line be changed.
- E. Heavy construction equipment working within a water or sewer line right-of-way may crush shallow drainage tile. All tile lines intersecting the water or sewer line trench will be probed laterally for their entire length within the water or sewer line right-of-way to check for damaged tile. Probing must occur immediately prior to the permanent repair of any severed tile lines. If tile lines are found to be damaged, they must be repaired so they operate as well after construction as before construction began, and in a manner that is acceptable to the landowner.
- F. All permanent tile line repairs must be made within 14 days of the date the damage occurred, weather and landowner permitting. If the landowner elects to make his/her own tile repairs, such damage payments will be negotiated with the Project Sponsor and must also be made within 14 days of the date of the completed repair work.
- G. The Project Sponsor will remain liable for a period of three (3) years following the completion of the water or sewer lines to ensure that all tile line repairs do not fail. The Project Sponsor will not be responsible for tile line repairs that the Project Sponsor pays the landowner to perform.

# FIELD TILE REPAIR



## EXCAVATION PLAN

### NOTES:

1. Coarse aggregate shall be gravel, crushed gravel, pit run gravel or crushed stone and shall conform to the requirements of IDOT Standard Specification for Road and Bridge Construction Article 1004.01 and CA-18 gradation.
2. Geotextile may be woven or non-woven and shall conform to the requirements of Class 1 in the attached table 1 or 2. In addition, when pipeline trench depth exceeds 10 feet, puncture strength (ASTM D 483) shall be 150 lbs or greater.
3. New tile should be equal to or better than existing tile. Dual Wall polyethylene tubing conforming to ASHTO M-252 or M-294 may be used where existing tile is rigid conduit (clay or concrete).

AUTOCAD2000

#### REFERENCE

Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



NATURAL RESOURCES  
 CONSERVATION SERVICE  
 ILLINOIS

STANDARD DWG. NO.

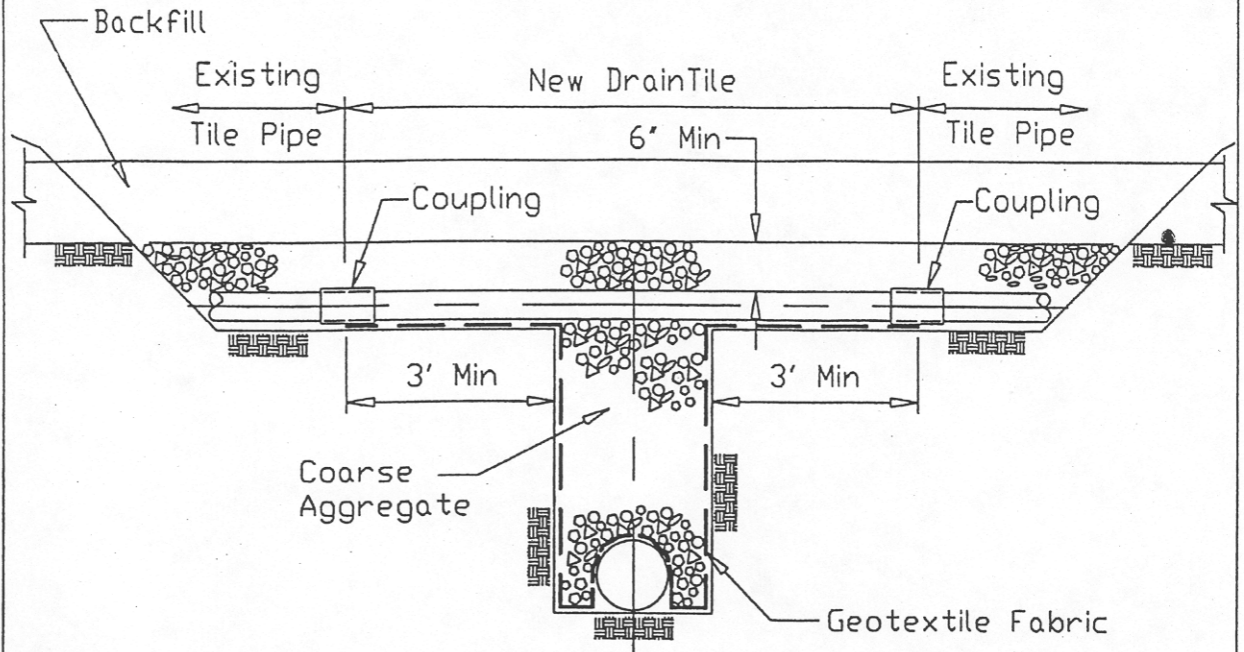
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SHEET 1 OF 2

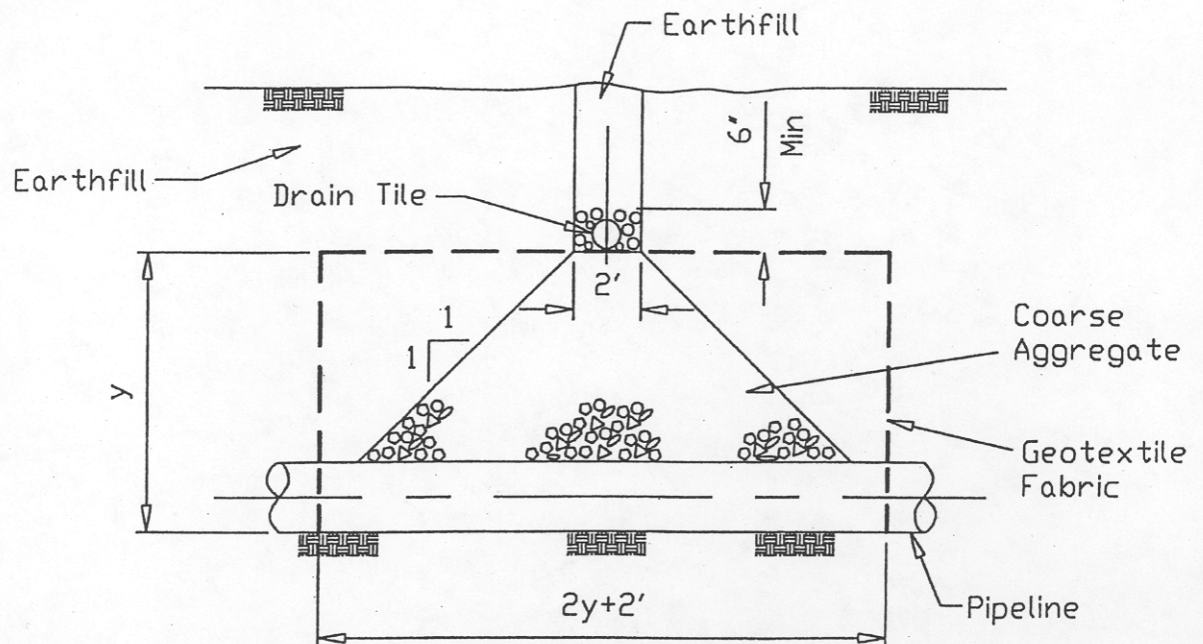
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# FIELD TILE REPAIR



SECTION A-A



SECTION B-B

AUTOCAD2000

REFERENCE  
 Project \_\_\_\_\_  
 Designed \_\_\_\_\_ Date \_\_\_\_\_  
 Checked \_\_\_\_\_ Date \_\_\_\_\_  
 Approved \_\_\_\_\_ Date \_\_\_\_\_



NATURAL RESOURCES  
 CONSERVATION SERVICE  
 ILLINOIS

STANDARD DWG. NO.  
 IL-ENG-150B  
 SHEET 2 OF 2  
 DATE: 12/98

## Material Specification 592—Geotextile

### 1. Scope

This specification covers the quality of geotextiles.

### 2. General requirements

Fibers (threads and yarns) used in the manufacture of geotextile shall consist of synthetic polymers composed of a minimum of 85 percent by weight polypropylenes, polyesters, polyamides, polyethylene, polyolefins, or polyvinylidene-chlorides. They shall be formed into a stable network of filaments or yarns retaining dimensional stability relative to each other. The geo-textile shall be free of defects and conform to the physical requirements in tables 592–1 and 592–2. The geotextile shall be free of any chemical treatment or coating that significantly reduces its porosity. Fibers shall contain stabilizers and/or inhibitors to enhance resistance to ultraviolet light.

Thread used for factory or field sewing shall be of contrasting color to the fabric and made of high strength polypropylene, polyester, or polyamide thread. Thread shall be as resistant to ultraviolet light as the geotextile being sewn.

### 3. Classification

Geotextiles shall be classified based on the method used to place the threads or yarns forming the fabric. The geotextiles will be grouped into woven and nonwoven types.

**Woven**—Fabrics formed by the uniform and regular interweaving of the threads or yarns in two directions. Woven fabrics shall be manufactured from monofilament yarn formed into a uniform pattern with distinct and measurable openings, retaining their position relative to each other. The edges of fabric shall be selvaged or otherwise finished to prevent the outer yarn from unraveling.

**Nonwoven**—Fabrics formed by a random placement of threads in a mat and bonded by heat-bonding, resin-bonding, or needle punching. Nonwoven fabrics shall be manufactured from individual fibers formed into a random pattern with distinct, but variable small openings, retaining their position

relative to each other when bonded by needle punching, heat, or resin bonding. The use of nonwovens other than the needle punched geotextiles is somewhat restricted (see note 3 of table 592–2).

### 4. Sampling and testing

The geotextile shall meet the specified requirements (table 592–1 or 592–2) for the product style shown on the label. Product properties as listed in the latest edition of the "Specifiers Guide," Geotechnical Fabrics Report, (Industrial Fabrics Association International, 1801 County Road BW, Roseville, MN 55113-4061) and that represent minimum average roll values, are acceptable documentation that the product style meets the requirements of these specifications.

For products that do not appear in the above directory or do not have minimum average roll values listed, typical test data from the identified production run of the geotextile will be required for each of the specified tests (tables 592–1 or 592–2) as covered under clause AGAR 452.236-76.

### 5. Shipping and storage

The geotextile shall be shipped/transported in rolls wrapped with a cover for protection from moisture, dust, dirt, debris, and ultraviolet light. The cover shall be maintained undisturbed to the maximum extend possible before placement.

Each roll of geotextile shall be labeled or tagged to clearly identify the brand, class, and the individual production run in accordance with ASTM D 4873.

**Table 592–1** Requirements for woven geotextiles

Property	Test method	Class I	Class II & III	Class IV
Tensile strength (pounds) <sup>1/</sup>	ASTM D 4632 grab test	200 minimum in any principal direction	120 minimum in any principal direction	180 minimum in any principal direction
Elongation at failure (percent) <sup>1/</sup>	ASTM D 4632 grab test	<50	<50	<50
Puncture (pounds) <sup>1/</sup>	ASTM D 4833	90 minimum	60 minimum	60 minimum
Ultraviolet light (% residual tensile strength)	ASTM D 4355 150-hr exposure	70 minimum	70 minimum	70 minimum
Apparent opening size (AOS)	ASTM D 4751	As specified, but no smaller than 0.212 mm (#70) <sup>2/</sup>	As specified, but no smaller than 0.212 mm (#70) <sup>2/</sup>	As specified, but no smaller than 0.212 mm (#70) <sup>2/</sup>
Percent open area (percent)	CWO-02215-86	4.0 minimum	4.0 minimum	1.0 minimum
Permittivity sec <sup>-1</sup>	ASTM D 4491	0.10 minimum	0.10 minimum	0.10 minimum

1/ Minimum average roll value (weakest principal direction).

2/ U.S. standard sieve size.

Note: CWO is a USACE reference.

**Table 592–2** Requirements for nonwoven geotextiles

Property	Test method	Class I	Class II	Class III	Class IV <sup>3/</sup>
Tensile strength (lb) <sup>1/</sup>	ASTMD 4632 grab test	180 minimum	120 minimum	90 minimum	115 minimum
Elongation at failure (%) <sup>1/</sup>	ASTMD 4632	≥ 50	≥ 50	≥ 50	≥ 50
Puncture (pounds)	ASTMD 4833	80 minimum	60 minimum	40 minimum	40 minimum
Ultraviolet light (% residual tensile strength)	ASTMD 4355 150-hr exposure	70 minimum	70 minimum	70 minimum	70 minimum
Apparent opening size (AOS)	ASTMD 4751	As specified max. #40 <sup>2/</sup>	As specified max. #40 <sup>2/</sup>	As specified max. #40 <sup>2/</sup>	As specified max. #40 <sup>2/</sup>
Permittivity sec <sup>-1</sup>	ASTMD 4491	0.70 minimum	0.70 minimum	0.70 minimum	0.10 minimum

1/ Minimum average roll value (weakest principal direction).

2/ U.S. standard sieve size.

3/ Heat-bonded or resin-bonded geotextile may be used for classes III and IV. They are particularly well suited to class IV. Needle-punched geotextiles are required for all other classes.

#### 4. Rock Removal

- A. The top 42 inches of a water or sewer line trench will not be backfilled with soil containing rocks that are larger than 3 inches in any dimension.
- B. If trenching, blasting, or boring operations are required through rocky terrain, suitable precautions will be taken to eliminate the potential for rocks to become interspersed with the soil material that is placed back in the trench.
- C. Rocks and/or soil containing rocks that are larger than 3 inches in any dimension must be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner and the Project Sponsor.

#### 5. Removal Of Construction Debris

All construction-related debris and material will be removed from the landowner's property. (Note: Such material to be removed would include litter generated by the construction crews.)

#### 6. Compaction, Rutting, Fertilization, Liming

- A. When water and sewer lines are buried in trenches that are **greater than 24 inches in width**:
  - 1. Compaction will be alleviated on the trench and any adjacent work areas that are traversed by construction equipment. Cropland will be ripped at least 18 inches deep and pasture and woodland will be ripped or chiseled at least 12 inches deep.
  - 2. Any other areas of the right-of-way which are traversed by construction equipment and related vehicles will be ripped or chiseled at least 12 inches deep.
  - 3. At least 3 passes will be made over all lands to be ripped and/or chiseled.
  - 4. All cropland that has been disturbed by construction activities will be limed and fertilized where necessary in order to benefit the current and/or next year's agricultural production or vegetative cover to control soil erosion.
- B. When water and sewer lines are buried in trenches **less than 24 inches wide**, all right-of-way that has been traversed by construction equipment and related vehicles will be chiseled at least 12 inches deep with at least 3 passes being made.
- C. All ripping and chiseling will be done at a time when the soils are dry enough for normal tillage operations to occur on undisturbed cropland adjacent to the areas to be tilled.

#### 7. Land Leveling

- A. The Project Sponsor will remain liable, for a period of two (2) years following the completion of a water or sewer line, to restore any right-of-way to its original elevation and contour should uneven settling occur or surface drainage problems develop due to inaccurate land leveling immediately following a water or sewer line's construction.
- B. The Project Sponsor will provide the landowners with a telephone number and address that may be used to alert the Project Sponsor of the need to perform additional land leveling services.

## **8. Prevention Of Soil Erosion**

- A. The Project Sponsor will work with landowners to prevent excessive erosion on lands disturbed by construction. Reasonable methods will be implemented to control erosion. This is not a requirement, however, if the land across which a water or sewer line is constructed is bare cropland that the landowner intends to leave bare until the next crop is planted.
- B. If the landowner and Project Sponsor cannot agree upon a reasonable method to control erosion on the landowner's right-of-way, the Project Sponsor will follow the recommendations of the appropriate county Soil and Water Conservation District if the landowner so requests.

## **9. Repair Of Damaged Soil Conservation Practices**

All soil conservation practices (such as terraces, grassed waterways, filter strips, concrete structures, dams, etc.) that are damaged by water or sewer line construction will be restored to at least their pre-construction condition.

## **10. Damages To Private Property**

- A. With the exception of tile line repairs, the Project Sponsor will repair, replace, or pay to repair or replace damaged private property within 45 days, weather and landowner permitting, after a water or sewer line has been constructed across any affected property.
- B. Similar relief for damages will be extended by the Project Sponsor for any construction-related damages that occur off of the established water or sewer line right-of-way.
- C. The Project Sponsor will remain liable to correct damages to private property beyond the initial construction of a water or sewer line, to those damages incurred by future construction, operation, maintenance, and repairs.

## **11. Clearing Of Trees And Brush From The Easement**

- A. If trees are to be removed from the right-of-way, the Project Sponsor will consult with the landowner to see if there are trees of commercial or other value to the landowner.
- B. If there are trees of commercial or other value to the landowner, the Project Sponsor will allow the landowner the right to retain ownership of the trees with the disposition of the trees to be negotiated prior to the commencement of land clearing.
- C. The Project Sponsor will follow the landowner's desires which are consistent with any applicable laws or ordinances regarding the disposal of trees, brush, and stumps of no value to the landowner by burning, burial, etc., or complete removal from any affected property.

## **12. Interference With Irrigation Systems**

- A. If a water or sewer line intersects an operational (or soon to be operational) spray irrigation system, the Project Sponsor will establish with the landowner an acceptable amount of time the irrigation system may be out of service.

- B. If an irrigation system interruption results in crop damages, either on the water or sewer line right-of-way or off the right-of-way, the landowner will be compensated for all such crop damages.
- C. If it is feasible and mutually acceptable to the Project Sponsor and the landowner, temporary measures will be implemented to allow an irrigation system to continue to operate across land on which a water or sewer line is also being constructed.

### **13. Ingress And Egress Routes**

Prior to any water or sewer line construction, the Project Sponsor and the landowner will reach a mutually acceptable agreement on the route that will be utilized for entering and leaving the water or sewer line right-of-way should access to the right-of-way not be practical or feasible from adjacent segments of the water or sewer line right-of-way or from public highway or railroad right-of-way.

### **14. Temporary Roads**

- A. The location of temporary roads to be used for construction purposes will be negotiated with the landowner.
- B. If temporary roads must be constructed, they will be designed to not impede surface drainage soil erosion on or near the temporary roads will be minimized.
- C. Upon abandonment, temporary roads may be left intact through mutual agreement of the landowner and the Project Sponsor.
- D. If the temporary roads are to be removed, the right-of-way upon which the temporary roads are constructed will be returned to their previous use and restored to the same or better condition as existed prior to their construction.

### **15. Weed Control**

- A. On any right-of-way over which the Project Sponsor has jurisdiction as to the surface use of such land (well heads, pump or lift stations, valve sites, etc.), the Project Sponsor will provide for weed control in a manner that does not allow for the spread of weeds onto adjacent lands used as cropland.
- B. The Project Sponsor will remain liable for the costs incurred by owners of land adjacent to surface facilities when the landowners must control weeds on their land which have spread from land accommodating water or sewer line surface facilities.

### **16. Pumping Of Water From Open Trenches**

- A. In the event it becomes necessary to pump water from open trenches, the Project Sponsor will pump the water in a manner that will avoid damaging adjacent agricultural land. Such damages include, but are not limited, inundation of crops for more than 24 hours and the deposition of sediment and gravel in fields, pastures, ditches, and any water bodies or water courses.
- B. If it is impossible to avoid water-related damages as described in 16.A. above, the Project Sponsor will compensate the landowners for the damages or will correct the

damages so as to restore the agricultural land, water courses, etc. to their pre-existing condition.

- C. All pumping of water shall comply with existing drainage laws, local ordinances relating to such activities, and provisions of the Clean Water Act.

## **17. Aboveground Facilities**

Aboveground facilities shall be located so they will not be a hindrance to ongoing agricultural activities occurring on the lands adjacent to the facilities. First priority shall be made to locating aboveground facilities on right-of-way that is not used as cropland. If this is not feasible, such facilities shall be located so as to incur the least hindrance to the adjacent cropping operations (i.e., located in field corners or areas where at least one side is not used for cropping purposes).

## **18. Advance Notice Of Access To Private Property**

- A. The Project Sponsor will provide the landowner or tenant with a minimum of 24 hours prior notice before accessing his/her property for the purpose of constructing a water or sewer line.
- B. Prior notice shall first consist of a personal contact or a telephone contact, whereby the landowner or tenant is informed of the Project Sponsor's intent to access the land. If the landowner or tenant cannot be reached in person or by telephone, the Project Sponsor will mail or hand deliver to the landowner or tenant's home a dated, written notice of the Project Sponsor's intent. The landowner or tenant need not acknowledge receipt of the written notice before the Project Sponsor can enter the landowner's property.

## **19. Reporting Of Inferior Agricultural Impact Mitigation Work**

Prior to the installation of any water or sewer line, the landowners will be provided with a number they can call to alert the Project Sponsor should landowners observe inferior work relating to the agricultural impact mitigation work which is performed on their property.

## **20. Indemnification**

For any water or sewer line installation, the Project Sponsor will indemnify all landowners, their heirs, successors, legal representatives, and assigns from and against all claims, injuries, suits, damages, costs, losses, and expenses including legal fees resulting from or arising out of the construction, maintenance, removal, repair, use or existence of a water or sewer line, whether heretofore or hereafter constructed, including damage to a water or sewer line or any of its appurtenances and the leaking of its contents, except where claims, injury, suits, damages, costs, losses, and expenses are caused by the negligence or intentional acts of the landowners, their heirs, successors, legal representatives, and assigns.



# Technical Specifications

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## **General Requirements**

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## **General Requirements**

### **Section 14**

#### **14.01. SCOPE OF WORK**

The work, as proposed, includes the furnishing of all labor, materials, equipment, transportation, and performing of all operations required to construct improvements for the OWNER, all as shown on the Drawings and/or as herein specified. In case of conflict between the Drawings and project specifications, the CONTRACTOR shall notify the ENGINEER prior to bidding, to clarify the discrepancy and obtain a decision on which document governs. If the CONTRACTOR or any of his subcontractors fail to notify the ENGINEER prior to bidding, then the CONTRACTOR shall provide and install the intended material or equipment at no additional cost to the contract price.

An attempt has been made to provide as much information on the Drawings as possible in regard to both existing and proposed conditions, although extreme accuracy in terms of dimensions and sizes of pumps, piping, etc., is not guaranteed. It is therefore the CONTRACTOR's responsibility to examine the Drawings, Specifications, and work site; to become familiar with the conditions and limitations applying to the work; and to verify all measurements, distances, levels, dimensions, quantities, etc., prior to making his bid, ordering materials, and/or starting work. By the act of having submitted a bid, the CONTRACTOR will be deemed to have made such examinations and verifications, and to have made allowances for such in his bid. If any major discrepancies occur between the Drawings and actual conditions, the CONTRACTOR shall notify the ENGINEER before submitting his bid and/or starting the work.

It shall be the responsibility of the CONTRACTOR to furnish and install complete and working systems to perform the intended purposes as required by the Drawings and these specifications. The CONTRACTOR shall be responsible for all details which may be necessary to properly install, adjust and place into operation the complete installation, and shall include the costs of all such details in the Bid.

The CONTRACTOR shall guarantee that the equipment furnished shall be properly installed, and when properly operated, shall perform the duty for which it is intended. He shall guarantee all materials, workmanship, and completed installation to be first class in every particular and shall, at his own expense, furnish and replace any part or parts that may prove defective in material, equipment, or workmanship within one year from the date of substantial completion, in accordance with the General Conditions of this Contract and Section 61 of the Technical Provisions.

This work shall be governed by an IEPA permit for construction. This permit shall be obtained for the CONTRACTOR by the OWNER before any construction operations begin. The OWNER will also obtain the necessary easement and NPDES permit.

The CONTRACTOR is responsible for conforming with the requirements of all applicable health and safety regulations and precautions as required by local, state and federal regulatory agencies including, but not limited to OSHA and IDOL. In accordance with the requirements of the OSHA regulations for construction, the CONTRACTOR shall provide and require the use of personal protective and lifesaving equipment for all persons working in or about the project.

#### **14.02. WATER SYSTEM OPERATION DURING CONSTRUCTION**

Construction activities by the CONTRACTOR shall not cause any interruption of the potable water supply to the OWNER; in general, this stipulation necessitates maintaining the existing degree of water pumping capability throughout the project period insofar as possible. Accordingly, at least 10 days after execution of the Agreement and along with submission of his progress and shop drawing schedules (see the General Conditions), the CONTRACTOR shall submit a detailed outline of his proposed construction sequence, plus drawings showing any temporary pumping or piping installations, to assure satisfaction of this requirement; the submittal shall be subject to the approval of the OWNER, ENGINEER, and IEPA. All costs for temporary piping, pumping, or any other arrangement needed to maintain the existing pumping capability shall be considered incidental to the project, and as such must be included in the CONTRACTOR's bid price. If, for any reason, a temporary interruption in the water supply becomes necessary, the CONTRACTOR shall give at least 10 days advance notice to both the ENGINEER and the OWNER.

#### **14.03. STRUCTURES AND UTILITIES ENCOUNTERED**

Various underground and surface structures may or may not be shown on the Drawings. The location and dimensions of such structures where given do not purport to be absolutely correct. The structures are plotted on the Drawings for the information of the CONTRACTOR but information so given is not to be construed as a representation that such structures will be found or encountered as plotted. Other structures may also be encountered which are not shown on the Drawings.

The CONTRACTOR shall maintain in operating condition all utilities encountered in this work. Any existing utilities damaged as a result of this construction shall be repaired to the satisfaction of the owner of the utility at the CONTRACTOR's expense, whether or not said utilities are shown on the Drawings. Existing utilities may be relocated with the approval of the owner of the utility. This relocation shall be at the CONTRACTOR's expense, done according to the requirements of the utility owner, and shall be sufficient to clear the proposed improvement.

Before beginning work in an area, the CONTRACTOR shall contact JULIE at 800-892-0123 and any other non-JULIE member companies maintaining utilities, pipeline, transmission lines, and any other potential obstacles in the project area and request their assistance in field locating their utilities in that area. The CONTRACTOR, however, shall be solely responsible for the location of utilities. The utilities shown are for informational purposes only and the OWNER and the ENGINEER do not imply that the information is complete.

The CONTRACTOR shall be entirely responsible for all injuries to water pipes, electric conduits, existing drains or sewers, poles carrying currents, telephone or telegraph lines, railroad bridges and tracks, streets, pavements, sidewalks, curbs, fences, field tiles, culverts, buildings, or other structures of any kind met with during the prosecution of the work, whether on public or private property.

All such structures or utilities which are damaged or removed to allow construction shall be restored to a condition at least equivalent to that which existed at the commencement of the work unless additional written arrangements are made satisfactory to the owner of said property. The CONTRACTOR shall care for and maintain all such structures or utilities encountered, and where service by them is interrupted, he shall provide and maintain temporary service until repair is complete and full service is restored. Repair of and restoration of service from essential structures or utilities shall be prompt; in these cases, if repair is unnecessarily delayed or unsatisfactory in the judgment of the OWNER, the

OWNER may have the repairs made and may deduct the cost thereof from payments due the CONTRACTOR. All costs associated with structures or utilities encountered, including removal, replacement, repair, temporary service, or complications to proposed work shall be incidental to the project and shall be performed without any increase in the Contract Price.

Any field drainage tiles, drainage ditches, or storm sewers interfered with by the construction of the improvement shall be rerouted around the improvement in such a way as to maintain the drainage of areas upstream and downstream of the improvements; any such work shall be approved by the OWNER and shall be done by the CONTRACTOR without any increase in the Contract Price.

Existing trees and shrubs within easements and rights-of-way shall be protected from damage, and when such trees or shrubs are in the way of construction, the OWNER may instruct the CONTRACTOR to prune branches interfering with the work, or remove and dispose of trees or shrubs, or transplant trees or shrubs out of the way of the construction and the Contract Price shall not be increased for the performance of such work.

The CONTRACTOR shall be liable for damage to trees and shrubs which were to have been protected as directed by the OWNER, unless such damages are determined by the OWNER to have been unavoidable, and moneys due the CONTRACTOR may be withheld to cover such damages.

#### **14.04. WATER LINE DAMAGE**

In addition to the discussion under Structures and Utilities Encountered, the following shall apply: if existing or proposed water lines or service lines are damaged or leak due to the CONTRACTOR's construction procedures, emergency temporary repairs shall be made immediately. The CONTRACTOR shall permanently repair the water lines or service lines within 24 hours of receiving verbal notice from the OWNER. If the CONTRACTOR does not perform the repairs within the required time period, the OWNER may perform the repair and bill the CONTRACTOR for actual costs for labor, equipment, and material.

This criterion shall be in force 7 days per week, including holidays and shall extend through the construction period and the 1 year guarantee period.

#### **14.05. STANDARD SPECIFICATIONS**

The Standard Water and Sewer Specifications referenced in these specifications refer to the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois. In case of conflict with the Standard Water and Sewer Specifications, these Technical Provisions shall govern. All work performed shall be in accordance with the standards of the State of Illinois Plumbing Code and all local codes.

#### **14.06. RIGHTS-OF-WAY AND EASEMENTS**

The OWNER has secured the necessary rights-of-way and/or easements necessary for the construction of the work. These documents are on file with the ENGINEER and may be reviewed by all bidders prior to the bid date. The CONTRACTOR shall be furnished copies of these documents so that he may contain his construction activities to the permissible areas listed in each easement.

Some property owners have restrictive clauses in their easement regarding trees and shrubbery, fences, private utilities, width of easement, etc.. The CONTRACTOR shall comply with these restrictive clauses at no increase in the Contract price.

The CONTRACTOR shall perform the work in accordance with the provisions of the various county, township and state permits.

#### **14.07. EQUIPMENT AND PRODUCTS**

The ENGINEER reserves the right to require a statement from the manufacturer of any products or equipment that the specific products or equipment have been inspected and tested and conform with the Specifications.

For the purposes of standardization all of the equipment for a single system shall be furnished by a single manufacturer except as noted or approved by the ENGINEER. Fabricated assemblies shall be shipped in the largest convenient section permitted by carrier regulations, and adequately match marked for proper assembly.

The CONTRACTOR shall be responsible for supplying spare equipment parts as provided in these Specifications and providing for the proper storage of same so that they are kept in operable condition.

The CONTRACTOR shall furnish for review complete equipment shop drawings in accordance with the General Conditions before installing any equipment. Drawings shall be provided by the equipment manufacturer and shall show all dimensions and details for correct installation of the equipment.

The Electric Controls/Telemetry Manufacturer shall review and approve/stamp the pump manufacturers shop drawings. Likewise, the pump manufacturer shall review and approve/stamp the Electric Controls/Telemetry Manufacturer's shop drawings. The CONTRACTOR shall then review and approve/stamp all shop drawings for construction. Shop drawing submittals will not be accepted without these reviews. The CONTRACTOR has ultimate responsibility for all shop drawing review and approval, including sub-contractor submittals.

If a shop drawing is "Rejected and Resubmit", then CONTRACTOR is responsible for reimbursing the OWNER for the ENGINEER's time for reviewing the resubmitted shop drawing.

#### **14.08. MANUFACTURER'S REPRESENTATIVES**

The CONTRACTOR shall arrange for all equipment manufacturers to provide a factory trained, qualified service engineer to oversee or inspect the complete equipment installation to assure that it is installed in accordance with the manufacturer's recommendations, make adjustments necessary to place the system in trouble-free operation, oversee initial start-up of the equipment, and instruct the operating personnel in the correct care and operation of the equipment furnished (see also Section 61.10). This shall not alleviate the CONTRACTOR'S responsibility for a complete working system. Such a service shall be a part of the Contract Price and no additional compensation shall be allowed.

#### **14.09. SOIL BORING DATA**

No soils investigation was performed for this project.



#### **14.10. CLEANING UP**

Due to the location of much of the work around private property and within public thoroughfares, the CONTRACTOR'S attention is called to the General Conditions of these Specifications. It is imperative that the project sites be promptly maintained in a reasonably clean condition and that it not present any hazard or prolonged inconvenience to individual property owners or the public in general.

During construction, the CONTRACTOR shall clean up as the work proceeds. The premises shall be kept free of accumulations of waste materials and earth, rubbish and other debris resulting from the work. If in the judgment of the OWNER the CONTRACTOR fails to keep the site clean as described herein above, the OWNER may halt the construction and/or construction payments until the site has been cleaned up to the satisfaction of the OWNER.

At the completion of the project, the CONTRACTOR will remove all waste materials, rubbish and debris from and about the premises as well as all tools, scaffolding and surplus materials, and will leave the site clean and ready for occupancy by the OWNER. The CONTRACTOR will restore to their original conditions those portions of the site not designated for alteration by the Contract Documents.

Open burning of debris will not be permitted unless specifically authorized in writing by the OWNER, and then only following state, municipal or other local codes, ordinances, rules or regulations.

#### **14.11. PAYMENT FOR WATER USED**

Payment for water used by the CONTRACTOR to flush, test, chlorinate, and place in service the new pump station and yard piping shall be billed to the CONTRACTOR at \$9.00 per thousand gallons used. Unless the amount used for these items is actually metered, the OWNER will assume the quantity used to be 10 times the entire pipeline volume. Losses of water due to water line breaks or leaks, accidental or otherwise, during construction and the warranty period shall be estimated and billed to the CONTRACTOR at the same stated rate. Similarly, additional flushing of water lines due to failed samples shall be estimated and billed to the CONTRACTOR at the same stated rate.

#### **14.12. COORDINATION WITH LOCAL ELECTRICAL UTILITIES**

The Electric Controls/Telemetry Manufacturer shall contact the local electric utilities prior to bidding and shall include in his bid price all costs associated with providing complete electrical service(s) from the utilities for the project improvement. The Electric Controls/Telemetry Manufacturer shall be solely and entirely responsible for coordination of any and all electrical work with the local utilities, sub-contractors, etc., and for providing all necessary materials and equipment required to produce complete and properly functioning systems. The Electric Controls/Telemetry Manufacturer shall also be responsible for all necessary temporary service(s), and removal of same. The Electric Controls/Telemetry Manufacturer shall bear all costs for the items described above, and the CONTRACTOR shall bear the cost for all installation charges and monthly usage bills up to the time that the system(s) can be fully utilized by the OWNER. All work performed shall be in accordance with the standards of the National Electric Code, National Electric Safety Code, and all local codes.

#### **14.13. COORDINATION WITH RESIDENT PROJECT REPRESENTATIVE**

The CONTRACTOR shall notify the Resident Project Representative or OWNER of the proposed work schedule prior to each day. Any work accomplished without the Resident Project Representative present due to improper notification, shall be re-done, re-exposed, etc., to the satisfaction of the Resident Project Representative.

#### **14.14. CONTRACT RESPONSIBILITY**

The project described in these specifications is the construction of a new booster pump station to replace an existing booster pump station for the Greene County Rural Water District (GCRWD). The CONTRACTOR, in addition to the items listed below, shall be responsible for other items as detailed on the Contract Drawings and listed in the remainder of the Project Specifications.

The booster pump station consists of the construction of a new above-ground booster pump station and related site work. The CONTRACTOR will be responsible for construction of the booster pump station and foundation, for providing at least 5 feet of ductile iron water main with restrained-joint fittings beyond the perimeter of the station (and/or the rock driveway in front of the station), for yard piping, connections to existing water mains, for the concrete driveway pad, for the drain line piping from the station to the french drain, and for the french drain itself. The CONTRACTOR will also perform the site work at the pump station (final grading, seeding, fencing, gravel driveway, etc.). The CONTRACTOR will also be responsible for coordinating with the booster pump station electrical service contractor and radio telemetry service provider.

#### **14.15. NPDES PERMIT COMPLIANCE**

An NPDES Permit is not required for Construction Site Activities. The CONTRACTOR will be responsible for implementation and maintenance of all erosion control measures necessary. The CONTRACTOR shall install all erosion controls as shown on the Drawings and as necessitated by field conditions. Prior to bidding, the CONTRACTOR shall notify the OWNER and ENGINEER of any changes in the erosion control plan that will be required due to planned construction methods. The CONTRACTOR shall take care during construction to minimize the risk of soil erosion on the construction site. If, in the judgment of the OWNER or ENGINEER, the CONTRACTOR disturbs more land than is necessary for the associated work he shall install erosion control measures in that area in accordance with the contract documents at no additional cost to the OWNER.

#### **14.16. OWNER'S STOP-WORK AUTHORITY**

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#### **14.17. ELEVATED TANK ACCESS ROAD**

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## **Concrete**

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## **Concrete**

### **Section 21**

#### **21.01. SCOPE OF WORK**

Portland cement shall comply with the Standard Specification for Portland Cement, ASTM C150, or Standard Specification for Air-Entraining Portland Cement, ASTM C175 and shall be Type I or IA.

#### **21.02. CONCRETE AGGREGATES**

Concrete aggregates shall conform to specifications for Concrete Aggregates, ASTM C33, except that aggregates failing to meet these specifications but which have been shown by special test or actual service to produce concrete of the required quality, may be used under paragraph 21.08 of this section where authorized by the ENGINEER.

#### **21.03. WATER**

Water used in mixing concrete shall be clean and free from deleterious amounts of acids, alkalis, or organic materials.

#### **21.04. REINFORCEMENT (METAL)**

Reinforcing bars shall conform to the requirements of tentative specifications for minimum requirements for the Deformations of Deformed Steel Bars for Concrete Reinforcement, ASTM-A-615/615M, and of tentative specifications for Billet-Steel Bars for Concrete Reinforcement, ASTM-A-615/615M, or tentative specifications for Rail-Steel Bars for Concrete Reinforcement, ASTM-A-616, or tentative specification for Axle-Steel Bars for Concrete Reinforcement, ASTM-A-617/617M.

Welded wire fabric or cold-drawn wire for concrete reinforcement shall conform to the requirements of standard specifications for Cold-Drawn Steel Wire for Concrete Reinforcement, ASTM-A, or standard specifications for Welded Steel Wire Fabric for Concrete Reinforcement, ASTM-A-185.

#### **21.05. MATERIAL STORAGE**

Cement, aggregates and reinforcement shall be stored at the batch plant or work site in such a manner as to prevent deterioration or intrusion of foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete.

#### **21.06. CONCRETE QUALITY**

The allowable stresses for design are based on the specified minimum 28 day compressive strength of the concrete or on the specified minimum compressive strength at the earlier age at which the concrete may be expected to receive its full load. The strength of concrete, at specified ages for

which all parts of the structure were designed, are shown on the drawings. Where not specified in the drawings, minimum 28 day compressive strength of the concrete shall be 3500 psi.

#### **21.07. STRENGTH OF CONCRETE**

The determination of the proportions of cement, aggregate and water to attain the required strength, shall be made by one of the following methods.

Method I: When no preliminary tests of the materials to be used are made, the water content per sack of cement shall not exceed the values in the following table. Method II shall be employed when artificial aggregates or admixtures are used.

##### Assumed Strength of Concrete Mixtures

Water Content in U.S. Gals. per Sack of Cement	Assumed Compressive Strength at 28-day psi
7-3/4	2500
6-3/4	3000
6	3500
5-1/2	3750

NOTE: In interpreting this table, surface water contained in the aggregate must be included as part of the mixing water in computing the water content.

Method II: Proportions of the materials and water content, other than those shown in the above table, may be used provided that the strength quality of the concrete proposed for use, shall be established by tests, which shall be made in advance of the beginning of operations, using the consistencies suitable for the work and in accordance with Standard Method of Making Concrete Compression and Flexure Test Specimens in the Laboratory, ASTM-C-192, and with Standard Method of Test for Compressive Strength of Molded Concrete Cylinders, ASTM-C-39.

A curve representing the relation between the water content and the average 28 day compressive strength, or earlier strength at which the concrete is to receive its full working load shall be established for a range or earlier strength at which the concrete is to receive its full working load shall be established for range of values including all the compressive strengths called for on the drawings. The curve shall be established by at least 3 points, each point representing average values from at least 4 test specimens. Amount of water used in the concrete, as determined for a curve, shall correspond to a strength which is 15 percent greater than that called for on the drawings. No substitutions shall be made in the materials used on the work without additional tests in accordance, herewith, to show that the quality of the concrete is satisfactory.

#### **21.08. CONCRETE PROPORTIONS AND CONSISTENCY**

The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms and around reinforcement with the methods of placing employed on the work but without permitting the material to segregate or excess free water to collect on the surface.

The combined aggregates shall be of such composition of size that when separated on the No. 4 sieve (fine aggregate) shall not be less than 30 percent or more than 50 percent of the total unless otherwise required by the ENGINEER.

The method of measuring concrete materials shall be such that the proper proportions can be accurately controlled and easily checked at anytime during the work. The received measurement shall be width rather than volume. Measurements of materials for ready-mixed concrete shall conform to the Tentative Specifications for Ready-Mixed Concrete, ASTM-C.

## **21.09. TESTS ON CONCRETE**

The CONTRACTOR shall employ and furnish an independent, qualified, testing agency, suitable to the ENGINEER and OWNER, for the purposes of all required testing of materials, certification of proper concrete placement during pour and work accomplished. All test results shall be reported to the ENGINEER and the CONTRACTOR on the same day the tests are made.

Technicians representing the testing agency shall inspect the materials and manufacture of concrete and shall report their findings to the ENGINEER and the CONTRACTOR. When it appears that the material furnished or work performed by the CONTRACTOR fails to fulfill specification requirements, the technician shall direct the attention of the ENGINEER and the CONTRACTOR to such failure.

The technician shall not act as foreman or perform other duties for the CONTRACTOR. Work will be checked as it progresses, but failure to detect any defective work or materials shall not in any way prevent later rejection when such defect is discovered, nor shall it obligate the ENGINEER for final acceptance. Technicians are not authorized to revoke, alter, relax, enlarge, or release any requirement of the specifications nor to approve or accept any portion of the work.

During the progress of the work compression test specimens shall be made and cured in accordance with Standard Method of Making and Curing concrete Compression and Flexure Test Specimens in the Field, ASTM-C-31.

Not less than 3 specimens shall be made for each test, nor less than 1 test for each day's pour or for each 50 cubic yards of concrete of each class. Specimens shall be cured under laboratory conditions except that when, in the opinion of the ENGINEER, there is a possibility of the surrounding air temperature falling below 40 degrees F the ENGINEER may require additional specimens to be cured under job conditions.

Specimens shall be tested in accordance with Standard Methods of Tests for Compressive Strength of Molded Concrete Cylinders, ASTM-C-39.

The standard age of test shall be 7 days and 28 days.

If the average strength of the laboratory control cylinders for any portion of the structure falls below the compressive strengths called for on the drawings, the ENGINEER shall have the right to require conditions of temperature and moisture necessary to secure the required strength and may require tests in accordance with Standard Method of Securing, Preparing and Testing Specimens of Hardened Concrete for Compressive and Flexural Strengths, ASTM-C-42 or order load tests to be made on the portions of structure so affected.

#### **21.10. PREPARATION OF EQUIPMENT AND PLACE OF DEPOSIT**

Before placing concrete, all equipment for mixing and transporting the concrete shall be cleaned, all debris or ice shall be removed from the places to be occupied by the concrete. Forms shall be thoroughly wetted (except in freezing weather) or oiled and masonry filler units that will be in contact with concrete shall be well drenched (except in freezing weather) and the reinforcement shall be thoroughly cleaned of ice or other coatings.

#### **21.11. MIXING OF CONCRETE**

The concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged.

For job mix concrete, the mixer shall be rotated at a speed recommended by the manufacturer and mixing shall be continued for at least 1 minute after all materials are in the mixer.

Ready-mixed concrete shall be mixed and delivered in accordance with the requirements set forth in Tentative Specifications for Ready-Mixed Concrete, ASTM-C-94.

#### **21.12. CONVEYING**

Concrete shall be conveyed from the mixer to the place of final deposit by methods which will prevent the separation or loss of the materials.

Equipment for chuting, pumping and pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end without separation of the materials.

#### **21.13. DEPOSITING**

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to re-handling or flowing. The concreting shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the space between the bars. No concrete that has partially hardened or been contaminated by foreign material shall be deposited on the work, or shall re-tempered concrete be used.

When concreting is once started, it shall be carried on as a continuous operation until the placing of the panel or level. When construction joints are necessary, they shall be made in accordance with paragraph 21.22, this section.

All concrete shall be thoroughly compacted by suitable means during the operation of placing. Whenever practical the concrete shall be compacted with an internal mechanical vibrator of such construction that 4,500 cycles per minute shall be transmitted to the concrete. The CONTRACTOR shall have, on the job site, a sufficient number of vibrators to insure that compaction can be started immediately after the concrete has been deposited in the forms.

The concrete shall be thoroughly worked around the reinforcement and embedded fixtures and into the corners of the forms.



Where conditions make compacting difficult or where the reinforcement is congested, batches of mortar containing the same proportions of cement to sand; as used in the concrete, shall first be deposited in the forms.

#### **21.14. CURING**

Provisions shall be made for maintaining concrete in a moist condition for at least 5 days after the placement of the concrete. Curing may be obtained by any one of the approved "Methods of Curing" subject to approval of the ENGINEER.

No structures, structural members, or other appurtenances shall be placed upon any foundation concrete for a minimum of 7 days after the foundation pour is completed, and the 7 day cylinder test results have been reported to the ENGINEER.

#### **21.15. COLD WEATHER REQUIREMENTS**

Adequate equipment shall be provided for heating the concrete materials and protecting the concrete during freezing or near-freezing weather. No frozen materials containing ice shall be used.

All concrete material and all reinforcement, forms, fillers, and ground with which the concrete is to come in contact shall be free from frost. Whenever the temperature of the surrounding air is below 40 degrees F all concrete placed in the forms shall have a temperature of between 50 degrees F and 70 degrees F, and adequate means shall be provided for maintaining a temperature of not less than 70 degrees F for 3 days or 50 degrees F for 5 days. The housing, covering or other protection used in connection with the curing shall remain in place and intact at least 24 hours after the artificial heating is discontinued. Salt or other chemicals shall not be used to prevent freezing. **If the temperature of the surrounding air is less than 50 degrees F, the CONTRACTOR shall use a temperature recording device to record the temperature to prove the temperature was not less than 70 degrees F for 3 days or 50 degrees F for 5 days and provide a means to visually check the air temperature under the insulating blanket. The method for cold weather pouring and curing shall be approved by the ENGINEER and OWNER prior to concrete placement.**

#### **21.16. FORMS**

Forms shall conform to the shape, lines and dimensions of the members, as shown on the drawings, and shall be substantial and sufficiently tight to prevent leakage of mortar. Any mortar that is leaked between and/or around forms or permanent surfaces shall be mechanically smoothed.

Forms shall be properly braced or tied together so as to maintain position and shape.

#### **21.17. REMOVAL OF FORMS**

Forms shall be removed in such a manner as to insure the complete safety of the structure. In no case shall the supporting forms or shoring be removed until the members have acquired sufficient strength to support safely their weight and the load thereon. In addition, forms shall remain in place a minimum of 24 hours after the end of the concrete pour.

### **21.18. CLEANING AND BENDING REINFORCEMENT**

Metal reinforcement, at the time concrete is placed, shall be free from all rust, scale or other coatings that will destroy or reduce the bond.

Bends for stirrups and ties shall be made around a pin having a diameter not less than 2 times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than 6 times the minimum thickness of the bar, except that for bars larger than 1 inch, the pin shall be not less than 8 times the minimum thickness of the bar. All bars shall be bent cold.

### **21.19. PLACING REINFORCEMENT**

Metal reinforcement shall be accurately placed in accordance with the plans and shall be adequately secured in position by concrete or metal chairs and spacers.

### **21.20. SPLICES (REINFORCEMENT)**

In general, splices in area of critical stress shall be avoided. Splices shall provide sufficient lap to transfer the stress between bars by bond and shear.

### **21.21. CONCRETE PROTECTION OF REINFORCEMENT**

The reinforcement shall be protected by the thickness of concrete as shown on the drawings. Where not otherwise shown, the thickness of concrete over the reinforcement shall be as follows:

- A. Where concrete is deposited against the ground without the use of forms, not less than 3 inches.
- B. Where concrete is exposed to the weather, or exposed to the ground, but placed in forms, not less than 2 inches for bars more than 5/8 inches in diameter and 1-1/2 inches for bars 5/8 inches or less in diameter.
- C. In slabs and walls not exposed to the ground or to the weather, not less than 3/4 inch.
- D. In beams, girders and columns not exposed to the ground or to the weather, not less than one and 1-1/2 inches. In all cases the thickness of concrete over the reinforcement shall be in accordance with ACI 318, or its latest revision. Exposed reinforcement bars intended for future use shall be protected from corrosion by concrete or other adequate coverings.

### **21.22. CONSTRUCTION JOINTS**

Joints not indicated on the drawings shall be so made and located as to not impair the strength of the structure. Where a joint is to be made, the surface of the concrete shall be thoroughly cleaned. In addition, vertical joints shall be thoroughly wetted and coated with a neat cement grout immediately before placing new concrete.

When deemed appropriate by the ENGINEER, the CONTRACTOR will dowel construction joints. The ENGINEER will specify the size, location, and placement.

### **21.23. CLEAN-UP OF FINAL SURFACES**

The surface of the concrete shall be free of spalling and holes. The CONTRACTOR shall be responsible for filling in the holes with a method and materials approved by the ENGINEER and OWNER. Any mortar that leaks through or around a form shall be mechanically removed to provide a smooth surface matching the surround concrete surface.

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# **SURFACE REPLACEMENT AND SITE WORK**

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## **SURFACE REPLACEMENT AND SITE WORK**

### **Section 31**

#### **31.01. SCOPE OF WORK**

Surface restoration shall be as specified in Section 21 of the Standard Water and Sewer Specifications. All surfaces shall be restored to at least the original condition prior to construction. All lawn, pasture, and timber areas that are disturbed shall be final graded, fertilized, and seeded as specified (Section 31.06.B Permanent Seeding), and shall be incidental to the total contract price. A rubber-tired bobcat or similar utility tractor shall be utilized for both initial and final grading work in residential yard areas to minimize property damage; backhoes, dozers, etc., will not be allowed in yards.

Backfill for all gravel driveways, gravel parking lots, and gravel field entrances (unless otherwise shown on the Plans) shall be made for the full depth and width of the trench with material specified for SELECT GRANULAR BACKFILL (CA-6 or equal). Only SELECT GRANULAR BACKFILL shall be allowed in the trench. This work shall be incidental to the unit price of water main installation.

All areas trenched/disturbed between May 1 and December 31 shall be cleaned up, final graded, and permanent seeded by May 21 of the following year. All areas trenched/disturbed between January 1 and April 30 shall be cleaned up, final graded, and permanent seeded by September 30 of the same year. Failure to meet these guidelines will result in Liquidated Damages being assessed against the CONTRACTOR, at the established daily rate.

During construction the CONTRACTOR shall clean up as the work proceeds. The premises shall be kept free of accumulations of waste materials and earth, rubbish and other debris resulting from the work. If in the judgement of the OWNER the CONTRACTOR fails to keep the site clean as described hereinabove, the OWNER may halt the construction and/or construction payments until the site has been cleaned up to the satisfaction of the OWNER.

At the completion of the project, the CONTRACTOR will remove all waste materials, rubbish and debris from and about the premises as well as all tools, and surplus materials, and will leave the site clean and ready for occupancy by the OWNER. The CONTRACTOR will restore to their original conditions those portions of the site not designated for alteration by the Contract Documents.

Open burning of debris will not be permitted unless specifically authorized in writing by the OWNER, and then only following state, municipal or other local codes, ordinances, rules or regulations.

The CONTRACTOR shall be responsible for obtaining all material storage locations, for any vandalism (graffiti, etc.), damage, or contamination (due to crop spraying or otherwise) that may occur and for clean-up at said sites; all incidental to the Contract price.

At the completion of all final clean-up operations, the CONTRACTOR shall place a marking flag at every gate valve, for ease of identification for the OWNER. This work shall be incidental to the contract price.

Compacted Rock Backfill - Longitudinal Installation: The rock used shall be SELECT GRANULAR BACKFILL as specified in this section. Where water main installation is performed longitudinally within 2 feet of the edge of roadway surfaces (excluding driveways unless called out on plans), initial backfill in the trench shall be compacted rock, but the top 6 inches of the trench shall be filled with compacted earth backfill. If the trench is under the roadway, then the backfill in the trench shall be compacted rock for the full depth of the trench/excavation. This work will be paid for at the contract

unit price per lineal foot for Compacted Rock Backfill – Longitudinal Installation, measured in place. The price shall include all excavation, equipment, labor, materials, traffic safety control, placement and compaction of granular backfill, placement and compaction of earth backfill, and other miscellaneous work as necessary.

### **31.02. RIGHT-OF-WAY CLEARING**

All necessary work involved in the clearing of the water line R.O.W. of trees, stumps, fences, brush, and other miscellaneous and various items of work as needed or as called for on the Drawings, or directed by the ENGINEER, shall be performed by the CONTRACTOR in a satisfactory manner and no additional compensation will be allowed over and above the unit bid price per lineal foot for water main installed of the various diameters, materials, and class as specified. All trees, stumps, fences, brush, and other miscellaneous material removed during Right-of-Way clearing shall be properly disposed of off-site unless an agreement can be worked out between the property owner and CONTRACTOR. All arrangements made between the CONTRACTOR and landowner shall be done so in writing, signed by both the CONTRACTOR and the property owner, and a signed copy of the written arrangement shall be given to the ENGINEER. Disposal operations shall be continuous with the clearing work.

### **31.03. EARTHWORK**

Intentionally Blank

### **31.04. PAVING AND SURFACING**

#### **A. General**

Restoration of surfaces shall include the removal of the existing surface, the disposal of surplus material, and the construction of new surfaces as indicated on the plans or specifications. The type of surface restoration required shall be shown on the plans.

The maximum trench width shall be as follows

2 feet unless otherwise approved by the OWNER/ENGINEER.

#### **B. Removal of Pavement, Sidewalk, Driveway, and Curb**

##### **1. General**

Wherever the pipe is located along or across an improved surface, the width of the trench shall be held as nearly as possible to the maximum width specified above in section 31.04.A. Where brick or concrete pavement, sidewalk, driveway or curbing is cut, the width of the cut shall exceed the actual width of the top of the trench by twelve (12) inches on each side or a total of two (2) feet. Exposed surfaces of Portland cement, oil and chip surface, asphalt, or asphaltic concrete shall be cut with a pavement saw before breaking. Care shall be taken in cutting to insure that a straight joint is sawed.

##### **2. Payment**

Work under this section is incidental to the CONTRACT.



C. Temporary Surface Above Excavation

1. General

Wherever pipes are constructed under traveled roadways, driveways, sidewalks, or other traveled surfaces, the temporary surface shall be placed over the top of the excavation as soon as possible after compaction. The temporary surface shall be SELECT GRANULAR BACKFILL - compacted CA-6. The top of the temporary surface shall be smooth and meet the grade of the adjacent undisturbed surface. The temporary surface shall be maintained at the CONTRACTOR'S expense until final restoration of street surface is completed as specified. No permanent restoration of street surface shall be initiated until authorized by the ENGINEER, OWNER, or owner of street. The temporary surfacing shall be required over the entire width of the excavation but any width in excess of the specified width shall not be used in computing payment quantities.

2. Measurement

- a. No measurement for temporary surface will be made.
- b. Measurement for the Compacted Rock Backfill shall be in cubic yards of the actual excavation (length times average width times average depth) for locations of Hot Taps, Line Stops, Cut and Caps, etc. For typical trench locations the measurement shall be in cubic yards (length times average width times average depth) with a maximum width as specified in section 31.04.A.

3. Payment

Work under this section is incidental to the CONTRACT.

D. Trench installed under Rock Driveway, Road, and Parking Lot

1. General

Wherever pipes are constructed under rock roadways, driveways, sidewalks, parking lots, or other rock surfaces, the trench shall be filled with compacted CA-6. The top of the trench surface shall be smooth and meet the grade of the adjacent undisturbed surface. The temporary surface shall be maintained at the CONTRACTOR'S expense until the end of the warranty period.

2. Measurement

Measurement for payment purposes will be computed by using the actual length, width, (maximum width as specified in 31.04.A) and average depth of the trench for which rock surface is placed less the depth of 6" surface coarse.

3. Payment

Work under this section is incidental to the CONTRACT.

E. Replacement of Permanent Type Pavement, Sidewalks, Curbs, Gutters, and Structures

1. General

The CONTRACTOR shall restore (unless otherwise specified or ordered by the ENGINEER) all permanent type pavements, sidewalks, driveways, curbs, gutters, shrubbery, fences, poles and other property and surface structures removed or disturbed during or as a result of construction operations to a condition which is equal in appearance and quality to the condition

that existed before the WORK began. The surface of all improvements shall be constructed of the same material and match in appearance the surface of the improvement which was removed.

2. P.C. Concrete Pavement Surface

Where the existing pavement surface is Portland Cement Concrete, The pavement replacement shall consist of ten (10) inch unreinforced P.C. concrete pavement unless otherwise indicated on the plans. The ENGINEER can choose to match existing concrete thickness and reinforcement and require the new surface to be “doweled” to existing concrete pavement. Portland Cement Concrete shall conform to the applicable provisions of these specifications and shall have a compressive strength of thirty-five hundred (3,500) pounds per square inch at twenty-eight (28) days. Construction methods for Portland Cement Concrete pavement shall conform to the current requirements of the "Standard Specifications for Road and Bridge Construction" of the IDOT for Portland Cement Concrete pavement. Pavement joints in the replacement surface shall conform to and match the joints in the adjacent pavement area.

3. Hot Mix Asphalt Pavement Surface – Rigid Base

Where the existing pavement surface is hot mix asphalt and the base consists of a rigid material such as brick, Portland Cement Concrete, soil cement, natural cement or a combination of these materials, the base replacement shall consist of eight (8) inch (200 mm) Portland Cement concrete base course unless otherwise indicated on the plans. Portland Cement concrete shall conform to applicable provisions of these specifications and shall have a compressive strength of thirty-five hundred (3,500) pounds per square inch at twenty-eight (28) days. Construction methods for Portland Cement Concrete base course shall conform to the current requirements of the "Standard Specifications for Road and Bridge Construction" of the IDOT for Portland Cement Concrete base course. The surface replacement shall consist of a bituminous prime coat and two (2) layers one and one half (1-1/2) minimum thicknesses totaling a three (3) inch minimum thickness hot mix asphalt surface course conforming to the IDOT current "Standard Specifications for Road and Bridge Construction" for Hot Mix Asphalt Surface Course. The CONTRACTOR shall submit a mix design to the ENGINEER for approval. The mix design shall have been used and approved on an IDOT project. The ENGINEER can choose to match existing concrete thickness and reinforcement and require the new surface to be “doweled” to existing concrete pavement and minimum (2) layers of Hot Mix Asphalt meeting existing thickness.

4. Hot Mix or Bituminous Treated Surface over a Flexible Base.

Where the existing pavement is hot mix asphalt or bituminous surface treatment and the base consists of a flexible material such as gravel or crushed stone, the base replacement shall consist of a minimum of eight (8) inch compacted thickness of material unless otherwise indicated on the plans and shall conform to either one of the following course aggregate materials as described in the IDOT "Standard Specifications for Road and Bridge Construction."

- a. CA6
- b. CA9
- c. CA10

Placing and compacting of the base course material shall conform to the methods described in the above-referenced specifications for aggregate base course. The surface replacement shall consist of a bituminous prime coat and a two (2) layer hot mix asphalt surface plant mix totaling

three (3) inches in thickness conforming to the IDOT "Standard Specifications for Road and Bridge Construction".

5. Brick Pavement Surface

- a. An eight (8) inch Portland Cement Concrete base reinforced unless otherwise indicated on the plans. Portland Cement Concrete shall conform to applicable provisions of these specifications and shall have a compressive strength of thirty-five hundred (3,500) pounds per square inch in twenty-eight (28) days. Construction methods for Portland Cement Concrete base shall conform to the current requirements of the IDOT's "Standard Specifications for Road and Bridge Construction" for Portland Cement Concrete base course.
- b. A three-fourth (3/4) inch sand cushion.
- c. Brick wearing surface. Sound brick which is removed shall be cleaned and reused. When additional bricks are required they shall conform as is reasonably possible, to the color, size and quality of existing brick. Jointing material for brick wearing surface shall be the same as used in the adjacent existing brick surface. The finished surface shall be smooth, well designed, and meet the grade of adjacent existing surfaces.

6. Concrete Sidewalks, Driveways, Curb, Curb and Gutter, and Steps

Where necessary or shown on the plans, to remove and replace concrete sidewalk, driveways, curb and curb and gutter, replacements shall be made as follows:

Concrete sidewalks, driveways, curbs and curb and gutter shall be replaced with concrete meeting the applicable provisions of these specifications and having a compressive strength of not less than thirty-five hundred (3,500) pounds per square inch at twenty-eight (28) days. Minimum thickness shall be the greater of existing surface or four (4) inches for sidewalks and six (6) inches for driveways unless otherwise indicated on the Plans. Walks on slopes 10:1 or steeper shall be constructed with steps conforming to the slope. The steps shall have a six (6) inch riser and a twelve (12) inch minimum tread. Sidewalks shall be replaced with sidewalks and ramps in full compliance with all ADA regulations. CONTRACTOR is responsible for any redesign needs to ensure the replacement sidewalk/s is/are in full compliance with all current ADA requirements including transition to existing sidewalk. This work shall be included in the contract bid price for "Removal and Replacement Side walk". No additional compensation will be allowed.

Curb or curb and gutter dimensions and cross-sections shall conform, as nearly as possible, with the existing installations. One-half (1/2) inch preformed expansion joints shall be placed at intervals not exceeding fifty (50) feet and at the junctions with existing work or as shown on the plans. Sidewalks shall be finished to match existing adjacent sidewalk surfaces, unless otherwise specified or directed by the ENGINEER.

Concrete mix, reinforcement, base, contraction joints, and curing shall conform to the current requirements of the IDOT's "Standard Specifications for Road and Bridge Construction" for Portland Cement Concrete base course.

7. Brick Sidewalks and Driveways

Brick sidewalks or driveways shall be replaced with brick, using salvaged materials when in good condition. Where shown on the plans, or directed by the ENGINEER, brick sidewalks or

driveways shall be replaced with concrete in accordance with Section 31.02.E.6, in which case payment shall be made at the unit prices bid for concrete sidewalk or driveway replacement.

#### 8. Measurement

Removal and replacement of permanent pavements and driveways will be measured for payment in square yards. Removal and replacement of sidewalks will be measured for payment in square feet.

Removal and replacement of curb, or curb and gutter, crossing a pipe will be measured for payment in feet. The length will be measured along the flow line of the curb, or curb and gutter, and will be limited to the distance specified in Section 31.02.A.

Except as otherwise shown on the plans or directed by the ENGINEER, payment quantities for sidewalk, driveways, curb and curb and gutter removal and replacement where actually removed and replaced and where such items are parallel or approximately parallel to the proposed pipe line, shall be included only when the distance from the edge of the trench (as determined from the assumed top of pipe trench widths shown on the Plans) is less than three (3) feet from the edge of the sidewalk, driveway, curb or curb and gutter. Where the items are at a greater distance from the trench, any damage shall be replaced at the CONTRACTOR'S expense. Where sidewalk parallel to a proposed pipe line is to be removed and replaced, the ENGINEER will determine the extent of such removal and replacement. The CONTRACTOR may elect to construct the conduit in a tunnel with the approval of the ENGINEER. In such an event, he/she shall be compensated by payment of the amounts of driveways, sidewalks, or curbs and gutters which would have been measured for payment had open cut methods been employed.

#### 9. Payment

Work under this section is incidental to the CONTRACT.

### **31.05. SITE IMPROVEMENTS**

#### A. Pipe Culverts

The CONTRACTOR shall furnish and install pipe culverts as shown on the Drawings in accordance with the Illinois Standard Highway Specifications. All pipe culverts shall be corrugated steel culvert pipe of the gage require in said specifications.

Metal end sections shall be furnished and installed where required in accordance with the Illinois Standard Highway Specifications.

Any existing pipe culverts damaged by the Contractor shall be repaired or replaced in accordance with the Illinois Standard Highway Specifications and no additional compensation will be allowed.

#### B. Riprap

Riprap shall consist of clean stone or clean broken concrete. It shall be free of shale, shaly stone, and other imperfections. The majority of the riprap shall be sized between 1-1/2 inches to 6 inches. The largest stones shall not exceed 6 to 8 inches.

Riprap shall be placed uniformly and, unless otherwise shown on the Drawings, all void spaces shall be filled with smaller stones. Rip-rap shall, at a minimum, be placed where shown on the

Drawings and as directed by the Engineer. Rip-rap shall be installed as shown on the Drawings, except that, when not shown on the Drawings, width and length dimensions shall be as required for field conditions and installation methods but shall not be less than 8 feet wide by 4 feet long.

### **31.06. LANDSCAPING**

#### **A. General**

The CONTRACTOR shall be responsible for the repair of any damage to structures or equipment resulting from landscaping operations, and shall remove excess soil and other debris from the site before final acceptance of the project.

The CONTRACTOR is responsible for keeping all plants in good growing condition until final acceptance of the project, including watering as necessary for seed germination and continued plant growth. Non-potable water may be used.

Plants that die before final acceptance must be replaced. The cost of replacement plants shall be borne by the CONTRACTOR except for replacement for loss from vandalism or physical damage by animals, fire, etc., or losses due to "Acts of God".

#### **B. Permanent Seeding**

The work shall consist of furnishing all labor, equipment, and materials for seeding a permanent grass mixture on all road ditches, structure sites, yards, permanent pasture, and all CRP acreage within the work area limits which are disturbed during completion of work. The surfaces of earthen embankments shall also be seeded when necessary. Permanent seeding will only be performed during the following periods:

Fall: August 1 - September 30

Spring: March 1 - May 21

All areas trenched between May 1 and December 31 shall be permanent seeded by May 21 of the following year. All areas trenched between January 1 and April 30 shall be permanent seeded by September 30 of the same year. Failure to meet these guidelines will result in Liquidated Damages being assessed against the CONTRACTOR, at the established daily rate.

1. Fertilizer - Immediately prior to seeding preparation, fertilizer shall be placed over the areas to be seeded. The fertilizer shall be a complete commercial fertilizer of organic base containing, in available form by weight, 6% Nitrogen, 12% Phosphorous, and 12% Potash. It shall be free flowing and suitable for application with approved equipment, delivered to the site in bags or other convenient containers, each fully labeled with the following:
  - a. Name and address of manufacturer.
  - b. Name brand or trademark.
  - c. Number of net pounds of ready mixed materials in the package.
  - d. Chemical composition of analysis.
  - e. Producer's guarantee of composition.

Fertilizer shall be evenly distributed with an approved mechanical spreader at a rate of 500 pounds per acre.

If a heavy or long rain (as judged by the ENGINEER) should fall on the plant site after fertilizer has been applied but before the seedbed has been prepared, the CONTRACTOR shall re-fertilize those areas affected, at no additional compensation.

2. Seedbed Preparation - All gullies and washes shall be filled to conform to the desired shape and the entire area to be seeded shall be reasonably smooth before actual seedbed preparation is begun. Stones larger than 4 inches in diameter, sticks, stumps, and other debris will be removed. At this point, the required fertilizer shall be applied uniformly. Immediately after application of the fertilizer, the area to be seeded shall be finely pulverized to a minimum depth of 3 inches either by spading and raking or by plowing, discing, harrowing, or other methods approved by the ENGINEER. The CONTRACTOR shall suspend operations when the soil is too wet, too dry, frozen or otherwise untillable. Seeded areas shall not be compacted through their use for such purposes as access roads or parking areas after seedbed preparation is completed. If rain should pack the seedbed prior to seeding, it shall be prepared again at no additional compensation.
3. Seed - Seeding shall be done immediately after seedbed preparation. The seed shall be applied at a uniform rate over the entire area. Grass seed shall be fresh, clean, and new crop seed composed of the following varieties mixed in the proportion by weight as shown, and testing the minimum percentages of purity and germination indicated. All seed used shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Act in effect at the time of the installation of the work involved under seeding operations. All seed shall be furnished in sealed standard containers. Seed may be mixed by dealer or by an approved method on the site. Weed seed shall not exceed .35% by weight of the total amount supplied. If seed is mixed on the site, dealer's guaranteed analysis for each variety must be furnished. Individual varieties must be delivered in separate unopened original containers should the CONTRACTOR desire to mix the seed on the site.

The mixture of grass seed used for seeding areas flatter than 3:1 slopes shall consist of the following proportions by weight per acre:

Name	Lbs	Percent	Percent
	Per Acre	Purity	Germination
Turf Type			
Fescue	75	98	85
Perennial			
Ryegrass	20	98	90

Areas with slopes 3:1 or steeper shall have an additional seeding of the following kind and quantity of seed:

Name	Lbs	Percent	Percent
	per acre	Purity	Germination
Perennial			
Ryegrass	30	98	90

The mixture of grass seed used for seeding the inside area of the earthen water retaining structures shall consist of the following proportions by weight per acre:

Name	Lbs	Percent	
	per acre	Purity	Germination
Reed Canary			
Grass	15	98	90
Tall Fescue	15	98	90

4. Seeding Materials - No seed shall be sown during high winds or when the ground is not in proper condition for seeding (as judged by the ENGINEER). The ENGINEER shall examine and approve any equipment to be used. Prior to starting work, seeders shall be calibrated and adjusted to sow seeds at the proper seeding rate. The ENGINEER shall be notified 48 hours prior to beginning the seeding operations so the trial seeding runs can be made to insure the proper seeder calibration.

Within 12 hours after seeding, the area shall be rolled at right angles to the runoff with an approved type roller or cultipacker to compact the seedbed and place the seed in contact with the soil.

5. Mulching - Immediately after rolling of the seedbed, mulch shall be applied to all the earthen embankments, road ditches, drainage swales and any slopes of 3:1 or steeper. Mulching will not be required on the remaining areas of the site. Mulch shall be straw of wheat, rye, oats, or other approved stalks and shall be air dried. Hay will not be permitted. Mulch shall be hand or machine applied in a loose enough layers to permit air to circulate but compact enough to reduce erosion. If baled mulch is used, care shall be taken that the material is in a loosened condition and contains no lumps or knots of compacted material.
6. Watering - Immediately after the seeding operation is complete, the CONTRACTOR shall maintain a daily sprinkling schedule of several hours until such time as the seed commences to grow. Sprinklers approved by the ENGINEER will be used. Dosing with open ended or nozzled hoses will not be permitted.
7. Reseeding and Maintenance - Seeding operations shall be repeated until a satisfactory uniform stand of grass is secured. Damage resulting from erosion, gulleys, washouts, or other causes shall be repaired by filling with topsoil, tamping, refertilizing and reseeding by the CONTRACTOR at no additional compensation. The CONTRACTOR shall mow and maintain all seeded areas until final acceptance of the project.
8. Crop Reduction Plan (CRP) Seeding - The CONTRACTOR shall contact the local SCS office and receive approval of grass seed and fertilizer mixtures prior to placing any seed or fertilizer on any CRP land.

#### C. Planting

1. General - Planting shall be as specified in the Illinois Standard Specifications for Road and Bridge Construction except as amended herein. In case of conflict with the Standard Specifications, these Specifications shall govern.

Ball rooted plants are designated BR, and balled and burlapped plants B&B. When plants of the kinds or sizes specified are not available within a reasonable distance, substitutions may be

made upon request by the CONTRACTOR, if approved by the OWNER or the ENGINEER. Plants larger than specified in the plant list may be used if approved by the ENGINEER, but the contract unit price may not be increased. If larger plants are approved, the spread of roots or ball of earth shall be increased in proportion to the size of the plant.

2. Fertilizing - Fertilizing shall conform to the Illinois Standard Specifications for Road and Bridge Construction, and shall contain 6% Nitrogen, 12% Phosphorous, and 12% Potash by weight.
3. Planting Materials - Materials used for planting trees shall be as follows:
  - a. Bracing - materials used for staking, bracing, or guying shall conform to the Illinois Standard Specifications for Road and Bridge Construction except as amended herein. Buying and staking trees shall be done as directed by the ENGINEER.
  - b. Hose - Hose, if used, shall be two-ply fiber-bearing garden hose, not less than 1/2 inch inside diameter.
  - c. Wrapping Material - Wrapping material shall be first quality, heavy waterproof crepe paper manufactured for tree wrapping.
  - d. Mulch - Mulch shall be wood chips or ground bark.
4. Pruning - Each tree and shrub shall be pruned in accordance with AAN Standards of the Illinois Standard Specifications for Road and Bridge Construction.
5. Maintenance - Plant care shall be in accordance with the Illinois Standard Specifications for Road and Bridge Construction and as specified herein. The CONTRACTOR shall be responsible for maintenance of each plant immediately after planting until final acceptance of the project.

### **31.07. FENCING**

#### **A. Chain Link Fence**

1. The CONTRACTOR shall supply and install a chain link fence six feet (6') in height around the property when called for on the Drawings and specified herein.

#### **B. Fabric**

1. Aluminum coated chain link #9 gauge, woven in a 2 inch diamond mesh, top and bottom selvage to have a barbed finish. Barbing to be done by cutting wire on the bias thus creating sharp point. Basic steel wire to be aluminum coated, Class II, chain link per ASTM Specification A 491-71. Fabric shall be connected to line posts with 7 gauge wire clips every 14 inches; to top rail with 9 gauge wires every 24 inches; to terminal, corner, and gate posts by integrally weaving into the post or by using 1/4" x 3/4" tension bars tied to the post every 14 inches with 11 gauge 1 inch wide steel bands and 3/8 inch diameter bolts and nuts; to tension wire with 11 gauge hog rings every 24 inches.

#### **C. Tensile Strength**

1. The aluminum coated wire shall have a minimum tensile strength of 80,000 pounds per square inch.



D. Barbed Wire - Aluminum Coated Steel

1. Barbed wire to be of the four (4) point pattern composed of three (3) strands of 12-1/2 gauge line wires with 14 gauge barb spaced on 5 inch centers. Minimum weight of aluminum coating .30 ounces and .25 ounces, respectively, per square foot of wire surface.

E. Rolled Formed Option

1. Intermediate Posts - Intermediate posts shall be per ASTM F-1043 Group II and shall be 2-1/4" x 1-5/8" weighing 2.72 pounds per foot and have a minimum tensile strength of 45,000 pounds per square inch.
2. Top Rail - Top rail shall be 1-5/8" x 1-1/4" roll formed sections. Top rail shall pass through intermediate posts tops and form a continuous brace within each stretch of fence, and be securely fastened to terminal posts.
3. End, Corner, and Pull Posts - End, corner and pull posts shall be 3-1/2" x 3-1/2" roll formed sections with integral fabric loops, 5.14 pounds per foot. Posts for wing gates shall be according to the following gate leaf widths, and set in the following concrete foundation depths:

<u>Lbs. per Lin Ft.</u>		<u>Depth In Conc.</u>	
Up to 13'	4" OD	9.11/6.56	3'6"
Over 13' to 18'	6-5/8" OD	18.97	3'6"
Over 18'	8-5/8" OD	24.70	4'0"

4. Gate Frames - Gate Frames shall be 1.90 inch OD pipe, connected with fittings and riveted at each corner. Each frame shall have three-eighths inch (3/8") diameter adjustable truss rods. Gates shall have positive type latching devices with provision for padlocking and drive gates shall have a center plunger rod, catch, and semiautomatic outer catches.
5. Braces - Brace pipe shall be the same as required for the top rail and shall be installed midway between the top rail and the bottom of fabric and shall extend from the terminal post to the first adjacent line post. Braces shall be securely fastened to posts by heavy pressed steel and/or malleable fittings, then securely trussed from line post to base of terminal post with a three-eighths inch (3/8") diameter truss rod and tightener. (Braces are required only in heights of six feet (6') or higher. May be used in lower heights if area dictates.)
6. Intermediate Post Tops - Intermediate post tops shall be of pressed steel or galvanized semi-steel. When barbed wire is specified, then the base is to include pressed steel extension arms to accommodate the number of barbed wire lines specified.
7. Miscellaneous - All posts, rails, and appurtenances shall be hot-dipped, zinc coated steel per ASTM Specifications F-1043 Group I-A or I-C, whichever is applicable. Pipe posts shall have tops which exclude moisture. End, corner pull, and gate posts shall be braced with the same material as top rail and trussed to intermediate posts with three-eighths inch (3/8") rods and tighteners. Each posts shall be set in a concrete foundation having a minimum diameter of ten inches (10") and at least thirty-six inches (36") deep. Line posts shall be evenly spaced ten feet (10') or less apart.

F. Tubular Option

1. Posts - All posts used in the construction of this fence shall be hot-dipped galvanized. All pipe uprights and rails shall be pipe conforming to ASTM F-1043 Group I-A or I-C.
2. Intermediate Posts - The intermediate posts shall be two and one-half inches (2-1/2") outside diameter (OD) evenly spaced in line of fence no further apart than ten feet (10') on centers. Concrete foundation depth shall be thirty-six inches (36").
3. Terminal Posts - All end, corner and pull posts shall be three inches (3") outside diameter (OD) with a pull posts set at the midway point of all lines 500 feet or longer and at all changes of direction and/or grade of 15 degrees or more. A pull posts shall also be placed at each point of radius for a curved line where radius has an internal angle of 30 degrees or more, and still maintaining the maximum 500 feet.
4. Gate Posts - Posts for swing gates shall be three inches (3") outside diameter (OD) for each gate leaf up to 7'-6" (15 foot opening double leaf).

	<u>POST SIZE</u>	<u>DEPTH</u>
Gate leaf up to 7'-6" .....	3" OD	3'0"
Gate leaf over 7'-6" to 13' wide .....	4" OD	3'0"
Gate leaf over 13' to 18' wide .....	6-5/8" OD	3'6"
Gate leaf over 18' .....	8-5/8" OD	4'0"

Gate posts shall be equipped with tops so designed to exclude moisture.

5. Post Setting - The posts shall be of sufficient length to extend the full length of concrete footing. Footings to be ten inches (10") in diameter for the intermediate posts and twelve inches (12") in diameter for the terminal posts. Concrete for the footings shall be capable of attaining a strength of 2,500 psi in twenty-eight (28) days.
6. Top Rail - The top rail shall be one and five-eighths (1-5/8") inches outside diameter (OD) pipe provided with couplings approximately every twenty feet (20'). Couplings are to be an outside sleeve type at least seven inches (7") long. The top rail is to pass through the line post tops and form a continuous brace from end to end of each stretch of fence.  
  
The top rail to be securely fastened to the terminal posts by heavy pressed steel brace bands and steel rail end connections.
7. Braces - Brace pipe shall be the same as required for the top rail and shall be installed midway between the top rail and the bottom of fabric and shall extend from the terminal post to the first adjacent line post. Braces shall be securely fastened to posts by heavy pressed steel and/or malleable fittings, then securely trussed from line post to base of terminal post with a three-eighths inch (3/8") diameter truss rod and tightener. (Braces are required only in heights of six feet (6') or higher. May be used in lower heights if area dictates.)
8. Intermediate Post Tops - Intermediate post tops shall be of pressed steel or galvanized semi-steel. When barbed wire is specified then the base is to include pressed steel extension arms to accommodate the number of barbed wire lines specified.

9. Gate Frames - Gate frames shall be 1.90 inch OD pipe, connected with fittings and riveted at each corner. Each frame shall have three-eighths inch (3/8") diameter adjustable truss rods. Gates must be properly braced to eliminate any possible sagging. Hinges shall be of sufficient strength and design to permit easy and trouble-free operation. All gates shall be equipped with a positive type latching device with a means for padlocking. All double leaf gates for drive entrances shall be equipped with center plunger rods, catch and semiautomatic outer catches (usually referred to as hold-backs) to secure gates in open position.

G. Tension Wire

1. The tension wire shall be number W 2.5 conforming to the requirements of AASHTO M32. Except when used with vinyl coated fabric, the wire shall have a minimum zinc coating of 2.0 ounces per square foot of surface. With aluminum fabric and aluminum coated fabric, an aluminum coating meeting the requirements of the fabric coating may be used. With vinyl coated fabric, the coating shall meet the same material and thickness requirements as the coating for the fabric.

H. Installation

1. Installation shall be made in a workmanlike manner by skilled mechanics experienced in erection of this type of fence. The fence shall be erected in line and to grade as provided by the ENGINEER. All concrete footings shall extend approximately one inch (1") above grade and shall slope away from the post to provide proper drainage.
2. The fabric, tension wire and barbed wire shall be stretched to proper tension between terminal posts and securely fastened to the framework members. The bottom of the fabric shall be held as uniformly as is practicable to the finished grade.

I. Cleanup

Upon the completion of the installation, all debris created by the installation shall be removed from the premises of the OWNER or disposed of as directed by his agents.

### **31.08. DEMOLITION, SALVAGE, AND ABANDONMENT**

This work shall consist of the removal and satisfactory disposal of existing structures or portions thereof, as shown on the Drawings and specified herein. Removal operations, whether complete or partial, shall be conducted with the least interference to the water treatment and/or water distribution process, and shall not be started until permitted by the ENGINEER. The CONTRACTOR's attention is directed to Section 14.

Materials to be salvaged include residential water meters (including touch and/or radio read accessories), master meters, and fire hydrants.

Materials that are to be salvaged shall be carefully inventoried, removed, and stockpiled on the site where designated by the ENGINEER. If the CONTRACTOR damages or destroys such material, he shall restore or replace it without additional compensation.

Piping, valves, and other miscellaneous items may be reused if specifically and individually approved by the ENGINEER. Items for reuse shall be cleaned, painted and reconditioned as required by the ENGINEER.

Materials that are not to be salvaged and stockpiled shall become the property of the CONTRACTOR, and he/she shall remove and dispose of them away from the site. The salvage value of the material shall be considered in determining the contract price.

Except as otherwise specified, existing structures to be demolished shall be removed to at least 1 foot below the proposed elevation shown for the subgrade or ground surface, and all portions below this elevation that interfere with construction, as determined by the ENGINEER, shall be removed.

When structures are to be partially removed, the CONTRACTOR shall be responsible for any damage done to the portions that are to remain. Old concrete or masonry shall be carefully removed by drilling, chipping, or other methods approved by the ENGINEER, leaving a surface that will permit a neat joint with new construction, or otherwise be satisfactory for the purpose intended. Expansion structures shall be as shown on the Drawings. Where existing bars are to extend from the remaining portions of the existing structures into new construction, the concrete shall be removed, leaving the projecting bars clean and undamaged. Where projecting bars are not to extend into the new construction, they shall be cut off flush.

All broken concrete free of metal reinforcement from demolition may be disposed of as riprap where called for on the Drawings.

All existing pipe that will no longer be used shall have the ends securely grouted and sealed with a lean concrete slurry for a distance of at least 10 feet from the ends of the pipe; or the pipe ends shall be properly capped.

### **31.09. EROSION CONTROLS**

NPDES Permit Number ILR10Z986 for Construction Site Activities governs the erosion protection practices of this work (See Section 14.16). The CONTRACTOR shall familiarize himself with the NPDES Permit and associated Storm Water Pollution Prevention Plan (SWPPP) prior to submitting his bid.

In addition to the erosion controls shown on the Drawings and the requirements of the NPDES Permit and the SWPPP, the CONTRACTOR shall exercise all precautions and take whatever measures necessary to prevent soil erosion. Earthwork operations shall be planned so that the exposure of bare soil is minimized, both as to extent and duration. The CONTRACTOR will be responsible for installing and maintaining the erosion control measures as specified in the SWPPP and as necessitated by field conditions and construction methods. Erosion control measures shall generally adhere to the SWPPP and this specification section. All costs associated for the erosion control measures implemented will be included in the CONTRACTOR'S unit bid price for Site Work. Additionally, maintenance of the erosion control measures, as required by the NPDES permit and outlined in the SWPPP will be incidental to the total contract price.

If, in the opinion of the OWNER or ENGINEER, excessive soil erosion is occurring due to construction methods or other factors that are controllable by the CONTRACTOR, the CONTRACTOR shall immediately remedy the problem under the ENGINEER's direction; remedial measures may include, but not be limited to the following: installation of straw bale drainage ditch checks, silt retention fences, construction of temporary sediment ponds, reseeding, intermediate mulching, regrading, and removal of earth stockpiles. In such instances, all remedial measures required to prevent soil erosion and the associated maintenance of such measures shall be incidental to the total contract price.

#### A. Trench Stabilization

When slopes exhibit excessive erosion, and as directed by the ENGINEER or OWNER or as shown on the Drawings, and described in the SWPPP, erosion checks shall be installed at necessary intervals to prevent ditch washout.

Erosion checks shall be of the following types and ~~payment will be as indicated~~ incidental to contract price:

1. Planks, 8 inches to 10 inches wide, shall be placed with 2 inches to 4 inches exposed. Planks shall be approximately 3 feet wider than the trench or ditch and shall be staked into solid ground at both ends. A sufficient number of plank, shall be supplied to serve as a sediment barrier for the entire width of the trench or ditch. ~~The CONTRACTOR will be paid the unit bid price for each ditch check regardless of the number of planks needed.~~
2. Crushed gravel shall be placed in the top 15 inches of the trench for sufficient trench length to prevent washout and ~~shall be paid for at the CONTRACTOR's unit bid price per lineal foot.~~
3. Rip rap berm, 6 inches in depth (sized and placed as described in Section 31.05.B), covering the entire slope. Where a rip-rap berm is shown on the Drawings for ditch crossings, either with other erosion control measures or as a standalone measure, the CONTRACTOR shall bid a price for EACH berm. The CONTRACTOR shall visit each site as necessary to determine the amount of material and labor required. ~~The CONTRACTOR'S bid price for each berm shall hold true if additional berms are added at ditch crossings during construction. Where rip rap berms are required due to large slopes in pastures and/or timbers, the rip rap berms shall be paid for at the CONTRACTOR'S unit bid price per square foot. Rip rap berms that are paid per square foot must be approved by the ENGINEER.~~
4. Mulch, straw, or some other material approved by the ENGINEER shall be spread along trench surface to provide protection for uncompacted earth, ~~and shall be paid for at the CONTRACTOR'S unit bid price per lineal foot.~~
5. Pre-manufactured Check Dams shall be installed perpendicular to the trench or ditch as per the manufacturers recommendations straw bales can be used in lieu of the pre-manufactured check dams. A sufficient number of check dams or bales shall be supplied to serve as a sediment barrier for the entire width of the trench or ditch. ~~The CONTRACTOR will be paid the unit bid price for each ditch check regardless of the number of check dams or straw bales needed.~~
6. Temporary seeding of the trench lines may be used to control erosion provided the temporary seeding activity corresponds with effective seeding/germination time periods. Where temporary seeding is shown on the Drawings for ditch crossings, either with other erosion control measures or as a standalone measure, the CONTRACTOR shall bid a price for EACH site. The CONTRACTOR shall visit each site as necessary to determine the amount of material and labor required. ~~The CONTRACTOR'S bid price for each site shall hold true if additional sites are added during construction. Where temporary seeding is required due to slopes in pastures and timbers, the temporary seeding shall be paid for at the CONTRACTOR'S unit bid price per lineal foot. Temporary seeding that is paid per lineal foot must be approved by the ENGINEER.~~

Should erosion checks installed not be adequate, additional erosion checks shall be installed until the trench is stabilized. ~~All NECESSARY erosion checks will be paid for as set forth in the CONTRACTOR'S unit bid prices.~~

## B. Slope Stabilization

Where slope stabilization cannot be maintained due to steepness of the grade and/or physical limitations encountered (flowing water at ditch crossing), erosion controls shall be installed as directed by the ENGINEER and/or as shown on the Drawings and described in the SWPPP and shall be incidental to contract price:

1. Rip rap berm, 6 inches in depth (sized and placed as described in Section 31.04 B.), covering the entire slope. Where a rip-rap berm is shown on the Drawings for ditch crossings, either with other erosion control measures or as a standalone measure, the CONTRACTOR shall bid a price for EACH berm. The CONTRACTOR shall visit each site as necessary to determine the amount of material and labor required. ~~The CONTRACTOR'S bid price for each berm shall hold true if additional berms are added at ditch crossings during construction. Where rip rap berms are required due to large slopes in pastures and/or timbers, the rip rap berms shall be paid for at the CONTRACTOR'S unit bid price per square foot. Rip rap berms that are paid per square foot must be approved by the ENGINEER.~~
2. Erosion control blanket constructed of 70% agricultural straw, 30% coconut fiber, encased between two natural fiber, biodegradable nets, installed per the manufacturer's recommendation. This blanket is to be used where rip rap is not an option. Erosion blanket is to be North American Green SC 150 BN, or equal. ~~Placement of erosion blanket will be paid at the CONTRACTOR's unit bid price per lineal foot.~~
3. Silt fence shall be installed as per the NRCS specifications and shall be placed along slopes as necessary to prevent loss of sediment. ~~Silt fence shall be paid at the CONTRACTORS unit bid price per lineal foot.~~
4. Temporary seeding of the trench lines may be used to control erosion provided the temporary seeding activity corresponds with effective seeding/germination time periods. ~~Where temporary seeding is required due to slopes in pastures and timbers, the temporary seeding shall be paid for at the CONTRACTOR'S unit bid price per lineal foot. Temporary seeding that is paid per lineal foot must be approved by the ENGINEER.~~

## C. Perimeter Protection

Where required by the site and/or construction practices, and as shown on the Drawings and described in the SWPPP, perimeter protection measures shall be implemented to prevent the migration of sediment off site and shall be incidental to contract price.

1. Silt fence shall be installed as per the NRCS specifications and shall be placed along slopes or the perimeter of the property as necessary to prevent loss of sediment. ~~Silt fence shall be paid at the CONTRACTORS unit bid price per lineal foot.~~
2. Temporary sediment basins shall be constructed as shown on the drawings or as directed by the ENGINEER ~~and shall be paid at the CONTRACTOR'S lump sum bid price.~~

Additional erosion control practices may be used with prior approval from the ENGINEER and OWNER. ~~Payment for additional erosion control practices will be negotiated as necessary.~~ Maintenance of all erosion control structures must be in accordance with the NPDES permit and the SWPPP (See Section 11.20).

### **31.10. ROCK EXCAVATION**

Rock excavation includes removal and disposal of rock material encountered that cannot be removed by conventional methods. Rock material includes boulders 1/2 Cu. Yd. or more in volume, and rock in beds, ledges, unstratified masses, and conglomerate deposits. When excavation of the rock material requires systematic use of pneumatic or hydraulic tools or a rock trencher, rock excavation shall be allowed under guidelines of this section of Specifications and Section 20-2.05 of the Standard Specifications, and paid for at the rate specified in the Bid Schedule. Shale, boulders (less than 1/2 Cu.Yd. in size), sandstone, gravel, and similar rocky material that can be removed by conventional methods **WILL NOT** be considered as rock excavation nor allowed for payment. Where blasts are made, the excavation shall be covered with brush, timber, or matting to prevent danger to life and property, and the CONTRACTOR shall secure a special permit from the local governmental authorities for blasting when required. Care shall be taken not to damage adjacent structures, property, or site improvements; or weaken the bearing capacity of rock subgrade when using explosives. Before starting work in areas where rock excavation will be required, the existing condition of adjoining properties shall be verified. Photographs shall be taken to record any existing settlement or cracking of structures, pavements, and other improvements. A list of such damages shall be prepared, verified by dated videos and signed by the CONTRACTOR and others conducting the investigation.

For water main excavations for PVC pipe up to 12 inches in diameter, rock shall be excavated to a width of at least 18 inches more than the inside diameter for PVC pipe, for the entire depth of the excavation. Rock excavation for pipe will be at least 6 inches below the bottom of the pipe and at least 3 inches below the bottom of the bell of a joint. For water main excavations for PVC pipe 14 inches in diameter and greater, rock shall be excavated to a width of at least 24 inches more than the inside diameter for PVC pipe, for the entire depth of the excavation. Rock excavation for pipe will be at least 9 inches below the bottom of the pipe and at least 6 inches below the bottom of the bell of a joint. Before the pipe is laid, the base of the excavation shall be replaced with a cushion of SELECT GRANULAR BACKFILL. All irregularities of the rock are to be filled with compacted granular backfill as well. In addition, "soft" rock (i.e., rock not allowed for payment as rock excavation, but that can be removed by conventional methods) shall be properly bedded with a cushion of SELECT GRANULAR BACKFILL, to avoid rough edges or other irregularities from damaging the water pipe.

The CONTRACTOR, on encountering rock via the trenching/open cut method, shall sufficiently uncover various spot locations to assure the overall extent of rock in that particular location. The CONTRACTOR, on encountering rock via the directional boring method, shall sufficiently prove the overall extent of rock in that particular location by either accurate records of the pressure at the bore head or uncovering spot locations as directed by the ENGINEER/OWNER. In either case he shall immediately notify the ENGINEER/OWNER, who either (1) will approve rock excavation in that area as necessary, or (2) will provide the CONTRACTOR with an alternate water line routing which could produce a location that eliminates the necessity of all/part of the rock excavation.

The CONTRACTOR must understand that if it is the ENGINEER'S/OWNER'S decision to relocate the water main to avoid the encountered rock, a reasonable time lapse to obtain alternate routing would be necessary. All direct costs involved in re-routing of the water line to a different location to avoid rock excavation will be borne by the OWNER.

It shall be the CONTRACTOR's responsibility to dispose of all excavated rock off site, to clean up debris, and to provide earthen or granular backfill to replace that rock material removed. This work is included in the unit price for Rock Excavation. The CONTRACTOR has five working days from original excavation to remove the rock off site. If after this period of time the rock is not removed from

the site, the OWNER has the right to hire an outside agency to remove the rock in a timely manner and these costs shall be withheld from the final Clean-Up/Seeding retainage funds.

Rock excavation by the trenching/open cut method shall be paid for at the contract unit price per cubic yard determined by measuring the average length, width, and depth of the area of rock removal. However, the OWNER will pay for no more than 18 inches plus the I.D. of the water main for trench width and 48 inches plus the ID of the water main for trench depth, for water main up to 12 inches; or 24 inches plus the I.D. of the water main for trench width and 60 inches plus the I.D. of the water main for trench depth for water main 14 inches in diameter and greater; whether in rock or in a combination of rock and earth. In addition, only Rock Excavation as defined above will be included in the measurement for a particular vertical and/or horizontal profile (i.e., soil or soil/rock material overlaying, intermixed with, or underlaying solid rock will not be included), even if a rock trencher is utilized for the area of removal in question.

Rock Excavation by the directional boring method shall be paid for at the contract unit price per cubic yard determined by measuring/estimating the average volume (diameter of rock cutter & estimated length of rock) of the rock removal. However, the OWNER will pay for no more than 1.3 times the diameter of the pipe. In addition, only Rock Excavation as defined above will be included in the measurement for a particular vertical and/or horizontal profile (i.e., soil or soil/rock material overlaying, intermixed with, or underlaying solid rock will not be included), even if a rock cutter is utilized for the area of removal in question. Once the quantity for rock excavation for a particular area has been measured in the field and submitted by the CONTRACTOR and approved for payment by the OWNER, the CONTRACTOR waives any and all rights to request a change in the quantity in the future.

### **31.11. UNSUITABLE BACKFILL MATERIAL**

All backfill material up to a height of 16 inches above the pipe shall be free from rocks greater than 3 inches in diameter and 5 inches in length, frozen material, clubs, stumps, debris, etc.

Where there is a deficiency of suitable backfill material due to a rejection of part or all of the excavated material as unsatisfactory for backfill purposes, the CONTRACTOR shall furnish satisfactory backfill material wasted from trench excavation in other locations or from other sources furnished by the CONTRACTOR.

Where creek gravel, shelf rock, boulders, etc., removed by conventional methods, are encountered in the pipe installation process, all loose rock shall be removed from the bottom of the trench before the pipe is laid. The pipe shall be bedded in 6 inches of suitable backfill material. The initial backfill up to a depth of 16 inches above the pipe shall consist of suitable backfill.

The CONTRACTOR shall be responsible for disposal (hauling away) of any/all unsuitable backfill material that may not be utilized on the job site. The CONTRACTOR has 5 working days from original excavation to remove the unsuitable backfill material off site. If after this period of time the unsuitable backfill material is not removed from the site, the OWNER has the right to hire an outside agency to remove the unsuitable backfill material in a timely manner and these costs shall be withheld from the final Clean-Up/Seeding retainage funds.

Backfill furnished and work performed (including disposal operations) under these circumstances shall be paid for at the contract unit price per linear foot for "Unsuitable Backfill Material", as determined by measurement in the field.



# **INSTALLATION OF WATER MAIN AND APPURTENANCES**

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# **INSTALLATION OF WATER MAIN AND APPURTENANCES**

## **Section 41**

### **41.01. SCOPE OF WORK**

The work to be performed under this section shall include all materials, labor, equipment, and all other facilities necessary for the installation of the water mains by the trench method and for the installation of appurtenances as shown on the drawings and/or herein specified.

### **41.02. CONSTRUCTION METHODS**

Construction methods recommended in the current edition of the Standard Specifications for Water and Sewer Main Construction in Illinois, as far as applicable, shall be followed. In case of conflict with the Standard Water and Sewer Specifications, these Technical Provisions shall govern. Installation methods shall also conform to the manufacturer's recommendations for the type of pipe being installed, unless specified differently in this Section. All construction and installation shall also comply with the most recent version of the Illinois State Plumbing Code.

For installation criteria specific to the material type of water main to be utilized, refer to Section 67 "Water Main, Fittings, and Appurtenances" of these Specifications.

### **41.03. EXCAVATION (TRENCH METHOD)**

The trench shall be excavated so that the water main will have a minimum of 42 inches of cover, unless a road or railroad permit, or private easement requires a greater depth. Where a firm foundation is not encountered at the grade established, due to soft, spongy or other unsuitable soil, all such unsuitable soil under the pipe and for the width of the trench shall be removed and replaced with well compacted select granular backfill, hereafter referred to as "trench backfill".

The cost of furnishing and placing trench backfill for the purpose as described above, will be considered as incidental work and no additional compensation will be allowed.

### **41.04. BACKFILLING (TRENCH METHOD)**

Where water mains are crossing open areas where early settlement is not critical, backfill shall be made by any acceptable method which will not dislodge or damage the pipe or cause bridging action in the trench. Excavated material or material from other sources furnished by the CONTRACTOR free from clods (larger than 3 inches) or rock/stones shall be used in backfilling up to 12 inches above the top of the pipe (initial backfill). Excess material shall be neatly rounded over the top of the trench as directed by the ENGINEER to allow for settlement of the trench. In final cleanup operations, the CONTRACTOR shall reshape the surface to level out any uneven settlement that has occurred.

For backfilling under rigid and non-rigid surfaces, including sidewalks, streets, roadways, gravel driveways, and gravel field entrances, initial backfill shall be with the material described above. The initial backfill material shall be worked around and beneath the water pipe and properly compacted

in suitable quantities until the pipe is completely covered and stabilized, before the final backfill is permitted. The final backfill shall be SELECT GRANULAR BACKFILL (CA-6 or equal) deposited for the remaining depth of the trench/excavation and compacted to the satisfaction of the ENGINEER.

Backfilling shall not be done in freezing weather without the permission of the ENGINEER, and it shall not be made with frozen materials. No backfill shall be made where the materials already in the trench are frozen.

Backfilling operations at fittings, gate valves, and hydrant locations shall not occur until all materials and work have been viewed by the OWNER, ENGINEER, or the Resident Project Representative.

No wood shall be allowed in the trench to shim or block out the water main, control the bend of a pipe, or discarded in the trench.

Compacted Rock Backfill - Longitudinal Installation: Where water main installation is performed longitudinally within 2 feet of the edge of roadway surfaces (excluding driveways unless called out on plans), initial and final backfill in the trench shall be as specified in the above paragraph, but the top 6 inches of the trench shall be filled with compacted earth backfill. If the trench is under the roadway, then the initial and final backfill in the trench shall be as specified in the above paragraph. This work will be paid for at the contract unit price per lineal foot for Compacted Rock Backfill – Longitudinal Installation, measured in place. The price shall include all excavation, equipment, labor, materials, traffic safety control, placement and compaction of granular backfill, placement and compaction of earth backfill, loading and disposing of unsuitable material or earth, and other miscellaneous work as necessary.

#### **41.05. DRAINAGE DITCH / CREEK CROSSINGS**

Where water mains cross drainage ditches or creeks, the main shall be installed within the easement under the drainage ditch bed or creek bed avoiding obstructions such as culverts, concrete wingwalls, paved ditches, etc. Where restrained-joint (RJ) PVC pipe for drainage ditch or creek crossings is NOT specified, the CONTRACTOR shall excavate across all drainage ditches or creeks called for in the plans to a sufficient depth to still maintain a minimum of forty-eight inches (48”) of cover between the top of the pipe and the bed of the drainage ditch or streambed of the creek. The PVC pipe shall then be laid in the trench and weighted down with sufficient numbers of sandbags filled with sand to keep the pipe from springing (or floating) upward. The trench shall then be backfilled per the specification. This method of drainage ditch or creek crossing work shall be incidental to the contract price.

Where restrained-joint (RJ) PVC pipe for drainage ditch or creek crossings IS specified on the plans, the CONTRACTOR shall install the pipe according to Section 67 of these Specifications. A minimum of sixty (60) lineal feet of RJ PVC pipe with expansion couplings at both ends (see also Section 67 of these Specifications) shall be required at each drainage ditch crossing. If field conditions warrant it, the length of RJ PVC pipe may be increased with ENGINEER approval. This method of drainage ditch crossing work shall be paid in a twofold manner according to the appropriate bid item. First, the amount of RJ PVC pipe required for the drainage ditch crossing, as measured in the field, shall be paid per lineal foot. Second, a lump sum fee reflecting set up time to lay out and cut pipe to ensure the RJ PVC is centered, mobilization, etc., shall be paid for each drainage ditch crossing requiring RJ PVC pipe. The lump sum fee will not be allowed if the RJ PVC is not centered to the ditch/creek and/or installed by trenching.

Where indicated on the Drawings for the larger creeks, the CONTRACTOR shall install a meter and valve set to allow any leaks under the creek to be metered, as required by the "10-State Standards". The CONTRACTOR's bid price for installing the creek crossing meter and valve set of the specified size shall include 2 gate valves with boxes, 2 saddles, 1 residential service meter and pit, other associated connection details as shown on the Drawings, and other appurtenances necessary for complete connection; pressure testing and disinfection as appropriate; and all other associated tasks.

Where a directional bore is specified on the Drawings, all RJ PVC pipe, tracer wire, set-up time, mobilization, etc. shall be incidental to the lump sum cost of the specific bore.

#### **41.06. WATER MAINS AND WATER SERVICE LINES NEAR SEWERS**

See Standard Specifications for Water and Sewer Construction

#### **41.07. PRESSURE TESTING OF WATER MAIN AND EQUIPMENT**

All tests and testing equipment, including a pressure gauge with maximum graduations of 5 psi and approved by the RPR, shall be provided by the CONTRACTOR at no cost to the OWNER. Prior to performance of the test all air shall be expelled from the pipeline to the satisfaction of the ENGINEER. This may be accomplished by means of hydrants or other means. If required, taps shall be made at high points where air relief valves are not called for on the drawings. Such taps shall be plugged at the corporation stop after testing is complete. Pressure test procedures should comply with the Standard Specifications, Section 41-2.14, except for the following "A key criterion for the pressure test is that the measured water pressure within the main(after reaching the required test pressure) should not vary by more than 5 psi during the duration of the test." shall be replaced with the following: "A key criterion for the pressure test is that the measured water pressure within the main(after reaching the required test pressure) should not vary from starting pressure during the duration of the test.". The leakage test is not an acceptable formal test for passing a water main, only the pressure test with 0psi loss is allowable.

Pressure 50% in excess of working pressure, as measured at the point of lowest elevation, shall be applied for not less than 1 hour, and all pipe, fittings, valves, hydrants, and joints shall be carefully examined for defects. Leaking joints shall be remade and then retested.

The CONTRACTOR shall have the full test pressure applied to the water main segment, and verify that the water main segment is holding pressure, prior to notifying the Resident Project Representative to observe the formal 1hour pressure test. Pressure test observation requests after 3:30 P.M. will be performed the next working day. The gage utilized for pressure testing shall have a face large enough and be graduated to the satisfaction of the RPR.

In the event air is admitted to the pipeline after being expelled for the hydrostatic tests, such air shall be removed prior to completion of the system and acceptance by the OWNER. The air may be removed by the methods described in above. In no case shall the system be placed in operation prior to the removal of the air.

#### **41.08. DISINFECTION OF WATER MAIN AND EQUIPMENT**

##### **A. Preliminary Flushing -**

Per Section 41 of the Standard Specifications, disinfection of all water mains shall be carried out in accordance with AWWA C651. The main shall be flushed as thoroughly as possible with the water pressure and outlets available. The CONTRACTOR shall remove all of the internals of any hydrant during initial flushing of the water main, in order to prevent rocks, dirt, etc., from damaging the working parts of the hydrants. Flushing shall be done after the pressure test has been made. Even with utilizing these flushing procedures, care should be used in laying the pipe to keep heavier solids and foreign material out of the pipe. All flushing operations shall be coordinated with the OWNER's licensed operator and may be regulated by the OWNERS licensed operator to prevent water loss/pressure to their customers. The CONTRACTOR may not be able to flush multiple hydrants simultaneously, and should bid this portion of the work accordingly.

During flushing operations, the CONTRACTOR shall use fire hose(s) to direct the flush water to the nearest natural drainage ditch or waterway. Dissipaters, splash blocks, and/or other appropriate measures shall be incorporated in the flushing procedure to prevent excessive soil erosion as required by the NPDES permit for construction site activities (See Section 11.21). The CONTRACTOR will not be permitted to flush without the use of fire hose and shall bid this portion of the work accordingly.

##### **B. Bio-Penetrant Application**

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##### **C. Requirements of Chlorination –**

Before being placed in service, all new mains or extensions to existing mains, shall be chlorinated, so that a chlorine residual of not less than 25 ppm remains in the water after 24 hours of standing in the pipe.

##### **D. Point of Application –**

The preferred point of application of the chlorinating agent is at the beginning of the pipeline extension, or any valve section of it, and through a corporation stop inserted in the top of the newly laid pipe.

##### **E. Rate of Application –**

Water from the existing distribution system or other source of supply, shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall meet the requirements listed in Section 41.08.C above. This may be expected with an application of 50 ppm, although some conditions may require more.

##### **F. Preventing Reverse Flow –**

Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water.

G. Disinfection of Valves and Hydrants –

In the process of disinfecting newly laid pipe, all valves, or other appurtenances, shall be operated while the pipeline is filled with the chlorinating agent.

H. Disinfection of Booster Pumps, Pressure Reducing Valves, etc. –

In the process of disinfecting newly laid pipe, all booster pumps, pressure reducing valves, or other equipment or appurtenances, shall be operated while the pipeline is filled with the chlorinating agent.

I. Final Flushing and Testing –

Following disinfection, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water throughout its length shall, upon test, be proved comparable in quality to the water served the public from the existing water supply system. All flushing operations shall be coordinated with the OWNER's licensed operator and may be regulated by the OWNERS licensed operator to prevent water loss/pressure to their customers.

After flushing, water samples collected on 2 separate days, at least 48 hours apart, from the treated piping systems at the designated testing points (indicated on the Sampling Plan included with the plan sheets), shall show satisfactory bacteriological results. The OWNER shall be present to witness the collection of all samples. Continuous flushing between the two samples shall not be allowed. Bacteriological analysis must be performed by a laboratory approved by the Illinois Environmental Protection Agency. The CONTRACTOR shall perform all testing and provide all bacteriological analysis results to the ENGINEER.

Once the CONTRACTOR has successfully obtained the 2 required new construction bacteriological samples, the OWNER, at their discretion and within 48 hours, will collect routine bacteriological samples from the same sample point for analysis. If the OWNER's test fails, then the CONTRACTOR shall repeat the new construction sample testing process for that specific location until both the CONTRACTOR's and the OWNER's samples pass. Any re-testing work by the CONTRACTOR shall be incidental to the Contract price.

All disinfection work and bacteriological sampling work shall be performed in the presence of the Resident Project Representative. Payment for bacteriological sampling will be made to the CONTRACTOR based on his line item bid price for each sample location. The CONTRACTOR's bid price for each sampling location shall include all necessary materials and labor to obtain 2 consecutive passing samples as described above.

#### **41.09. THRUST BLOCKS**

All bends of 11-1/4 degrees or greater, and all tees, plugs, reducers, fire hydrants, and flushing hydrants shall be thrust protected to prevent movement of the lines under pressure. Blocking shall be Portland Cement Concrete poured in accordance with Section 41.-2.09 of the Standard Specifications, or precast, solid blocking for small diameter pipe where the undisturbed soil is extremely firm and stable. Thrust blocking shall extend from the fitting to the undisturbed soil. Pipe and fitting joints shall remain accessible for repairs. Where unstable soil conditions exist, all deflections in the pipe from a straight line shall be provided thrust blocking in accordance with the manufacturer's recommendations. Concrete for reaction or thrust blocks shall have a 28-day compressive strength of not less than 3,000 psi. **No wooden wedges**, treated or otherwise, shall be allowed for shims for the blocking in any circumstance. PVC pipe may not be used in lieu of

concrete blocks. Where a fitting is used to make a vertical bend, the fitting shall be anchored to a thrust block braced against undisturbed soil. The thrust block should have enough resistance to withstand upward thrusts at fitting.

#### **41.10. DEWATERING**

The CONTRACTOR shall at all times during construction provide and maintain ample means and devices with which to promptly remove and properly dispose of all water entering the trenches or excavation. All trenches or excavation shall be kept dry until construction is complete. No foreign water shall be allowed to enter any pipe which has been laid. No water shall be allowed to stand over concrete until the concrete has set for at least 24 hours. This refers to thrust blocks, anchorages, foundations, etc.

If well pointing or the installation of temporary drains are required to complete the work, they shall be provided by the CONTRACTOR.

No additional compensation shall be made to the CONTRACTOR for any dewatering techniques, equipment or labor.

#### **41.11. ADJUSTING UTILITIES**

All utilities, including wiring, light standards, signal lights, sewers, private water lines, buried telephone cable, underground gas lines, etc., affecting the construction of the proposed improvement shall be adjusted at the CONTRACTOR's expense. It shall be the CONTRACTOR's responsibility to determine the exact location of all utilities. All adjustments shall be done as specified by the OWNER of the utility. If the CONTRACTOR damages any utility not requiring adjustment, he shall replace or repair it as required by the OWNER and no additional compensation will be allowed. No attempt has been made on the drawings to show all utilities or their exact locations. (See Section 14 of these specifications.)

#### **41.12. REMOVING FIRE/FLUSHING HYDRANTS**

Where indicated on the drawings or requested by the OWNER or ENGINEER, existing fire/flushing hydrants shall be removed where an existing water main is to be extended/connected. The CONTRACTOR shall remove and dispose of the existing fire/flush hydrant, unless it is to be salvaged and the contractor shall leave it in a convenient location for pick up by the water system's operator. This work shall be incidental to the Contract Price.

#### **41.13. CUTTING-IN TEES, VALVES, AND CAPS**

Where indicated on the drawings or requested by the OWNER or ENGINEER, tees, gate valves and/or caps of the appropriate size shall be cut-in to the existing water main. The CONTRACTOR's bid price for "Connections/Caps with Line Stops" shall include locating the existing water main (and other appropriate utilities); shutting off the flow of water at nearby valves or with line stops as necessary, and as indicated on the Drawings; installation at the new location complete with all necessary appurtenances; pressure testing and disinfection as appropriate; and all other associated



tasks. CONTRACTOR shall coordinate the schedule of each line stop with the OWNER/ENGINEER.

#### **41.14. INSTALLING OFFSET FIRE/FLUSHING HYDRANTS WITH GATE VALVE**

Where indicated on the Drawings or requested by the OWNER or ENGINEER, fire/flushing hydrants shall be installed “offset” from the main line. As shown in detail on the Drawings, a tee or cross with anchor coupling, gate valve, and blind flange shall be utilized at the end of the water main “run” and/or second “branch” unless continuing with water main. From the branch, the CONTRACTOR shall install an anchor coupling(s), with lengths as shown on the general fitting detail in the plans, gate valve, and hydrant. In general, the offset is requested in areas likely to be extended in the future, for ease of construction, or in areas for future ease of maintenance. The CONTRACTOR’S bid price for installing offset fire/flushing hydrants shall include the tee, blind flange, gate valve(s), anchor couplings, and fire/flushing hydrant (with locking mechanism when specified or indicated on drawings); complete with blocking, gravel, all necessary reducers and/or enlargers, and other appurtenances necessary for complete connection; pressure testing and disinfection as appropriate; and all other associated tasks.

#### **41.15. WATER MAIN CONNECTION TO STRUCTURES**

Intentionally Blank

#### **41.16. DRAIN TILE REPAIR**

The CONTRACTOR shall fix the tile and no payment will be allowed. In addition, no payment will be allowed for CONTRACTOR down time to hand dig or otherwise search for a marked field tile, whether accurately located or not.

The shall include all necessary gravel backfill/support as shown on the Drawings and as defined in IDOA’s requirements, included in the General Conditions of these project specifications.

#### **41.17. OPEN-CUT STEEL CASING**

Intentionally Blank

#### **41.18. OPEN-CUT PVC CASING**

Intentionally Blank

#### **41.19. OPEN-CUT SEPTIC ENCASEMENT.**

Where called for on the Drawings, the water main shall be installed in PVC casing (see Section 67 for material requirements) of the size shown on the Construction Drawings. As there are currently no known structures or other limiting factors in these areas, the PVC casing may be installed in an open trench. Backfill for Open-Cut PVC Casing Pipe shall be as specified in Section 41.04 and will

be incidental to the unit price of the PVC casing pipe installation and no additional compensation will be allowed. Measurement in lineal feet shall be made along the centerline of the PVC casing as installed.

The Water main installed through the casing pipe shall be RJ PVC pipe as specified in Section 67 of these specifications and sized as shown on the Drawings. Payment for the RJ PVC installed in the casing shall be based on the unit price of the bid schedule line item "RJ PVC within Casing Pipe" for the appropriate size and pressure classification of RJ pipe utilized. Casing spacers shall be used for the full length of the casing. Also, either end seals or a method approved by the OWNER shall be used to seal the end of the casing. All RJ pipe placed in PVC casing pipe shall utilize casing spacers as specified in Section 67. **INSTALL BLIND FLANGE ON EXISTING GATE VALVE**

Where indicated on plans or directed by OWNER the CONTRACTOR shall install a blind flange onto an existing gate valve. The CONTRACTOR shall include all labor, equipment and material to fully complete the installation of the blind flange. Any surface replacement or compact rock backfill will be paid separately.

#### **41.20. INSTALL BLIND FLANGE ON EXISTING GATE VALVE**

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## **Booster Pump Station**

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## **Booster Pump Station**

### **Section 61**

#### **61.01. SCOPE OF WORK**

The CONTRACTOR shall construct an above-ground water booster pump station, with all the necessary building structure and foundation components, internal and external piping, pumps, motors, valves, electrical, controls, and other necessary appurtenances, as shown on the Drawings and as specified herein.

The electrical equipment, telemetry equipment, and variable speed drive shall be supplied by one manufacturer so as to ensure proper coordination during construction and one-call servicing during long-term operation, the CONTRACTOR shall verify the installed and proposed system is compatible and meets the requirements of GCRWD's current system. In addition, the manufacturer(s) of the major station components shall have a factory or a factory authorized representative / service technician within 100 miles of the project site, to allow for fast and economical maintenance service. The pump manufacturer's representative and/or the CONTRACTOR shall also coordinate the overall system with the Electric Controls/Telemetry Manufacturers.

Refer to Section 14 of the Specifications regarding equipment, shop drawings, operation and maintenance manuals, start-up, and coordination criteria. Refer to Section 84 of the Specifications for details regarding the telemetry system.

The equipment furnished shall be designed, constructed, and installed in accordance with current practices and methods and shall operate satisfactorily when installed as shown on the Drawings and operated according to manufacturer's recommendations. The CONTRACTOR shall verify all dimensions and quantities shown on the Drawings for proper fit and function prior to bidding, ordering materials, and constructing the building or station components. Any discrepancies in fit or function shall be brought to the attention of the ENGINEER prior to bid, construction, or installation. In case of conflict between the Drawings and project specifications, the CONTRACTOR shall notify the ENGINEER prior to bidding, to clarify the discrepancy and obtain a decision on which document governs. If the CONTRACTOR or any of his Subcontractors fail to notify the ENGINEER prior to bidding regarding either of the above items, then the CONTRACTOR shall provide and install the intended material or equipment at no additional cost to the Contract price.

**Prior to bidding, shop drawing submittal, and again prior to the start of construction, the CONTRACTOR and all necessary representatives of the equipment manufacturers (pumps, meters, scales, etc.) and the Electric Controls/Telemetry Manufacturers shall meet, to coordinate the equipment to be used and the location requirement of all electrical/telemetry equipment. The ENGINEER and OWNER shall be notified of meeting date. Meeting minutes and attendance records of all meetings shall be supplied to the OWNER and ENGINEER. The Electric Controls/Telemetry shall meet the requirements listed in the plans, Section 82 and Section 84.**

The CONTRACTOR's prices for the major pump station components shall be categorized according to the Bid Schedule. All electrical, control, and telemetry equipment and labor necessary for a complete and working system shall be included by the CONTRACTOR among the various Bid Items listed in the Bid Schedule. Moreover, the CONTRACTOR shall include all costs associated with coordinating the electric controls and Telemetry equipment and installation with the Electric Controls/Telemetry Manufacturers to insure a complete and working system.

## **61.02. BUILDING AND FOUNDATIONS**

### **A. General Requirements:**

The CONTRACTOR shall field-erect an above-ground concrete block structure with a spread footing foundation, and a concrete slab floor, as shown on the Drawings. The CONTRACTOR is responsible for coordination of the plan dimensions of the foundations to match the plan dimensions of the building walls.

All color schemes, both interior and exterior, shall be as decided by the OWNER. The OWNER may select different colors for the interior, exterior walls, floors, pump bases, piping, piping components, pipe supports, fittings, floor grates, doors and door hardware, shingles, soffit, gutters, downspouts, siding, fascia, vents, block, mortar, etc.

### **B. Structural Design:**

1. Framing information shown is minimum requirements. Additional bracing for gravity and lateral loads, not shown, may be required based on manufacturer's calculation and standard details.

#### **2. Design Requirements:**

Roof Live Load top chord: 30 psf

Roof Dead Load:

Top chord: weight of indicated construction (minimum 10 psf)

Bottom chord: weight of indicated construction (minimum 10 psf)

Ground Snow Load (Pg): 20 psf

Basic Wind Speed (3-second gust): 90 mph

Wind Exposure: B

Seismic Design Category: D

Site Class: D

Flat Roof snow Load (Pf): 20 psf

Snow Exposure Factor (Ce): 1.0

Snow Load Importance Factor (Is): 1.0

Thermal factor (Ct): 1.1

Wind Importance Factor (I<sub>w</sub>): 1.0

Wind pressures for components and cladding:

Roof overhang Zone 2 -27.2 psf (uplift)

Roof overhang Zone 3 -45.7 psf (uplift)

Other components & cladding: IBC 2003, Table 1609.6.2.1(2) – Roof >7 to 27 degrees, 90 mph basic wind speed.

Seismic Importance factor (IE):	1.0
Mapped Spectral response accelerations	
	$S_s = 0.48$
	$S_1 = 0.17$
Spectral Response coefficients	
	$SDS = 0.448$
	$SD_1 = 0.238$
Basic Seismic-force-resisting system:	Bearing Wall System, Special reinforced masonry shear walls
Design Base Shear:	5,400 pounds
Seismic Response Coefficient ( $C_s$ ):	0.09
Response modification factor ( $R$ ):	5
Analysis procedure:	Simplified analysis procedure

## C. Foundation and Walls

### 1. General Information

- a. Design Soil Pressure for Foundations:  
2,000 PSF Continuous Footings (Assumed, Contractor to verify).
- b. The CONTRACTOR shall have an independent soils consultant verify the foundations subgrade and shall be incidental to the contract price. Refer to Section 21 of the specifications regarding concrete test requirements.
- c. All piping passing through the floor or walls of the pump station building shall utilize both a wall sleeve and a pipe linx manufactured by Calpico, Inc, or equal.
- d. The buildings shall have floor drains (minimum 8-inch floor drain inlet size, and minimum 8-inch drain piping size, as shown on the Drawings) with traps and vents, as necessary, and be routed to the french drain type pit, as shown on the Drawings.
- e. The CONTRACTOR shall verify that building foundations and below-ground piping locations will not be in conflict, prior to construction. Any conflicts shall be brought to the attention of the OWNER and ENGINEER prior to construction or installation.
- f. The foundation shall be notched for the door and the floor slab shall be continuous under the door opening.

### 2. Concrete:

- a. Applicable Code - Concrete construction shall conform to the current edition of the ACI Building Code (ACI 318); form work shall conform to ACI-347.
- b. Reinforcing Steel Details - All detailing, fabrication and erection of reinforcing bars, unless otherwise noted, shall be in accordance with "Manual of Standard Practice of Detailing Reinforced Concrete Structures" ACI 315, current edition.

c. Design Stresses:

(1) Cast in Place Concrete:

- (a) Footings, Foundation walls, & others:  $F'_c = 3,500$  psi at 28 days.
- (b) Slabs  $F'_c = 4,000$  psi at 28 days.

(2) Reinforcing Steel:

Reinforcing steel shall be in accordance with ASTM A615 Grade 60. Welded wire fabric shall be in accordance with ASTM A185 Smooth Wire, 60 KSI minimum yield.

- d. Splices of reinforcing steel bar shall be in accordance with ACI-318. The length of lap splice of bars of different diameter shall be based on the smaller diameter. Lap wire fabric a minimum of one full wire space plus two inches (2") at ends and sides, unless shown or noted otherwise.
- e. Reinforcing steel protection (to main reinforcing): Bottom of footings (three inches), beams, columns, & walls (1-1/2 inches), slabs (3/4 inch), unless noted.
- f. Chamfers - Except as otherwise required, exposed concrete corners and edges shall have 3/4" chamfers. Re-entrant corners shall not have fillets.
- g. Weakened plane control joints shall be placed at fifteen feet (15') maximum spacing in exterior slabs. Location of all construction joints other than shown on the Drawings shall have the approval of the ENGINEER.
- h. Anchor bolts for securing wood-framed walls to concrete foundation shall be 1/2-inch diameter minimum, mild steel with a 2-inch minimum right angle hook. Length shall be as shown on drawings. Anchor bolts shall be supplied with hex nuts and flat washers. Anchor bolts shall be set accurately in position while concrete is still wet. Care shall be taken to work the anchor bolt into the concrete to ensure a good bond between the concrete and the anchor bolt.

3. Reinforced Concrete Masonry

- a. Design Code - Reinforced concrete masonry construction shall conform to the 1999 edition of the Building Code Requirements For Masonry Structures ACI 530/ASCE 5 and Specification for Masonry Structures ACI 530.1/ASCE 6.
- b. Masonry units shall conform to ASTM C90, Type 1, Grade N. All same size concrete masonry units (CMU) shall be of same weight.  $F'_m = 2000$  psi net area for all load bearing masonry walls.
- c. Mortar shall conform to the requirements of ASTM C270, Type S; grout for filling cores of CMU shall conform to ASTM C476 (2,500 psi at 28 days).
- d. Exterior joint reinforcing and exterior anchoring devices shall be hot-dipped galvanized. **Prefabricated corner and T-Wall Reinforcing shall be used. Cutting and/or bending of prefabricated horizontal joint reinforcing and exterior anchoring devices shall not be allowed.**
- e. Horizontal joint reinforcing shall be continuous around all corners and intersections and shall lap enough to achieve equivalent strength or six inches (6") minimum at splices whichever is greater. All details shall conform with manufacturer's recommendations.



- f. Core fill masonry wall block units below grade. Vertical reinforcing per notes, details and schedules. Vertical bars to extend seven inches (7") into bond beams. Dowel to foundation wall, to match verticals.
- g. Unless shown otherwise, all steel and masonry lintels shall bear eight inches (8") minimum at each end on solid grouted cores.
- h. All eight inch (8") masonry bond beams to have two #4 bars horizontal unless noted otherwise. Bars to be placed near bottom and be completely embedded in grout. Anchor bolts to hook around horizontal bond beam reinforcing.
- i. The CONTRACTOR shall provide batch tickets for all CMU blocks. CMU blocks that are left over from another job shall not be allowed. The CONTRACTOR shall check for plumb, squareness, and levelness of the blocks/row at minimum every three rows.

#### D. Architectural

##### 1. Wood Trusses

- a. Roof truss top and bottom chords shall be #1 Southern Pine or better. Webs shall be #2 Southern Pine or better.
- b. Wood trusses shall meet the design requirements with no reduction in live, snow or wind load allowed.
- c. Roof truss design shall be by a structural engineer licensed in the State of Illinois. Use metal plate type connections. Comply with the loads given in "1. Structural Design" above. Combine loads per ASCE 7.
- d. CONTRACTOR shall submit individual truss design sheets and dimensioned plan view drawing showing truss layout. Each submittal sheet shall be sealed by a structural engineer licensed in the State of Illinois.
- e. Verify existing roof slopes and dimensions prior to fabricating trusses.
- f. Install in strict compliance with HIB-91 by the Truss Plate Institute.

##### 2. Wood

- a. Plywood roof sheathing shall be 5/8" structural II CDX (bonded with exterior glue).
- b. Plywood wall sheathing shall be 1/2" minimum structural II CDX (bonded with exterior glue).
- c. Roof and wall sheathing shall be nailed with 8d nails at six inches (6") O.C. at boundaries and panel edges and twelve inches (12") at intermediate supports.
- d. All dimension lumber shall be kiln dried and bear the grade mark of the grading authority.
  - (1) Studs and blocking shall be #2 Southern Pine, #2 Douglas Fir-Larch, #2 Spruce-Pine-Fir or better and shall meet the following requirements:

Fb MIN: = 850 psi

Fc MIN. = 725 psi (parallel to grain)

E (MIN.) = 1.3x10<sup>6</sup> psi.

- (2) Perimeter plates and all members in contact with concrete or masonry shall be pressure treated, #2 Southern Pine, #2 Douglas Fir-Larch or better and shall meet the following requirements:

FB = 1,250 psi (single member)

FB = 1,450 psi min. (repetitive member)

Fv = 95 psi

Fc = 565 psi (perpendicular to grain)

Fc = 1,050 psi (parallel to grain)

E = 1,600,000 psi

3. Ceiling Board:

Fiberglass reinforced plastic (FRP) board shall be installed as the finished ceiling surface where indicated. The FRP panel shall have ½-inch thick plywood backing, and the plastic shall be 0.090-inches thick. These panels shall be butted together and installed using FRP moldings and fasteners (no metal fasteners, screws, or nails allowed). Likewise, where the panels intersect a wall, FRP moldings shall be employed.

4. Door and Door Hardware:

Doors shall be as shown on the plans. Door hardware shall be completely of aluminum or stainless steel including panic hardware, hinges, hinge pins, door closers, thresholds, and screws and fasteners. Doors shall be supplied with weatherstripping and a wiper gasket.

5. Insulation, Air Baffles, and Windblock

The CONTRACTOR is responsible for installing the air baffles and windblock as manufactured by AdoProducts, Inc. or equal. Also, the CONTRACTOR shall install twelve inches (12") of batt insulation above the ceiling. The insulation air baffles, and the windblock shall be generally installed as shown on the Drawings and per manufacturer's recommendations.

E. Plumbing

Each room shall have run within it, a potable water source for wash down water. The water piping shall be Schedule 80 PVC (minimum 1" diameter) and be equipped with a backflow preventer and pressure regulator. See Section 61.03.N

F. Exterior

1. Drain Pit

The drain pit, for each drain line, shall be a minimum of twenty-four inches (24") wide by thirty inches (30") deep, filled with two inch (2") gravel and covered with geotextile fabric and a twelve (12) inch soil cap, and span the last ten feet from the end of the drain pipe. The CONTRACTOR shall maintain all necessary clearances between the drain lines and the potable water lines, and use the appropriate classification of water and drain piping, including any necessary dual encasement piping methods, as required by IEPA. The building floor shall be adequately sloped to drain towards the floor drain inlets. All vent and drain piping shall adhere to Illinois State Plumbing Code.

#### G. Safety

Anti-slip safety matting shall be provided on the floor just inside the entry door area, for the areas surrounding the pumps, for the floor area near the main piping runs, and for the floor area near the electrical/telemetry panels. Floor matting locations and sizes shall be coordinated with the OWNER prior to bidding, and all costs for matting shall be included in the Bid price (Bidders shall plan for at least 300 sq. ft. of matting to be utilized when figuring bids). The matting shall have a textured grip tread on the top surface to prevent slipping, studded surface on the bottom to allow for drainage and prevent creeping, open grid design to allow for drainage and air circulation, and beveled edges to prevent trips. The matting shall be a minimum 7/16-inch thick by twenty-four inch (24") wide roll, cut to fit and fill the areas, and shall be NoTrax Slip Resistant Drainage Mat Grainger Model 4DB98, 4DB96, or 4DE10, or equal.

### **61.03. INTERIOR WATER TRANSMISSION COMPONENTS**

#### A. General

The booster pump system shall consist of booster pump(s); various piping, valves, and fittings; electrical apparatus; radio telemetry controls; and other appurtenances as shown on the Drawings, and as specified herein, to provide a complete and working water booster system.

For components installed below the foundation of the booster pump station and external to the booster pump station, see Section 67.

#### B. Pumps

The booster pumps shall consist of two pumps and alternating simplex controls that will pump potable water directly from the existing ground storage tank into the existing 150,000 gallon "West" elevated water storage tank, and the distribution system. Each pump shall be a centrifugal, frame-mounted, horizontal end suction, bronze-fitted pump capable of pumping 225 gpm at 307 feet total dynamic head. The motors shall be a minimum 60 Hp, 3600 rpm, Total Enclosed Fan Cooled rating, and suitable for 3-phase, 60 cycle, 480 volt electrical service. Minimum pump efficiency at the design point shall be 60 percent. The controls for the pumps shall be as described in Sections 61.06, 82, and 84 of these Specifications.

The pump casing shall be cast iron with a single suction, enclosed, bronze impeller and top centerline discharge. The casing shall be designed to permit disassembly from the rear to remove pump internals without disturbing the system piping. Easily replaceable casing wearing rings shall be provided. The pump shaft shall be steel with the shaft sleeve bronze. A mechanical shaft seal (John Crane Type 1, stainless steel) shall be provided for leakless operation. The coupling shall be flexible (spacer) type to allow removal of pump internals without disconnecting motor leads or system piping. The bearing frame shall be one-piece cast iron. The motor and the pump shall be mounted on the baseplate at the pump manufacturer's plant, and shipped as one unit. Pumps shall be compatible with the 60 Hp variable frequency drives that are being supplied/installed by the Electrical Controls/Telemetry Contractors.

Motor sizing shall provide completely non-overloading characteristics throughout the entire operating range of the pump. Inverter-duty motors shall be provided, with insulators designed specifically to run on variable frequency drives. All motor windings, wiring, etc., shall also be compatible with variable frequency drives, and be able to withstand excessive heat or other adverse effects of the

variable frequency drives. Motor shall include thermal overload on motor windings. Temperature switch 3 in series labeled P1 and P2.

Pumps shall have testing and certification to insure that they meet the Hydraulic Institute certification standards. Certified pump curves shall be supplied documenting actual pump performance in the factory for both pumps, to the OWNER and the ENGINEER, prior to shipping and installation.

The pumps, motors, piping, fittings, pipe supports, and base anchor bolts shall be arranged such that the pumps and/or motors can be easily removed for maintenance without removing any piping, fittings, pipe supports, or anchor bolts. Anchoring and support of pump/motor base shall be approved by pump manufacturer prior to pouring concrete pump base. Pump base shall be grouted with grout between concrete base and pump base.

Pumps shall be Ingersoll-Dresser, Model D814-3X2X9F, or equal.

If the CONTRACTOR provides pump motors larger than the minimum Hp previously specified, he shall be solely responsible for any/all costs to upgrade all necessary electrical supply and electrical or other equipment.

The bearings shall be double-row, deep-groove type ball bearings. They shall be designed and sized for at least 100,000 hours calculated minimum L10 rating bearing life at 25 percent BEP, per ANSI B 3.15. Each bearing shall be capable of carrying both line and thrust type loads. The thrust bearings shall be securely held to the shaft.

The bearing brackets shall be separate from the pump casing and accurately machined and doweled to the casing. Grease lubrication shall be provided. Pump design shall allow bearings to be removed without disturbing upper casing, for inspection and replacement of bearings.

Pumps shall have John Crane Type 1 (stainless steel) mechanical seals. Two sets of replacement seals shall be provided to the OWNER for his spare parts inventory and all associated costs shall be included in the CONTRACTOR's bid price.

The alignment of the pump and motor is critical. The alignment shall be completed 3 times, all with laser method and RPR or ENGINEER present. The first time is before the pumps are installed in the pump station, the second is after all piping is complete, connected to the pumps, and before startup, and the third is within the last month of the one year warranty. Alignments shall be completed when the motor is cold and again when it is warm, and this shall apply to the alignments before startup and at the end of the warranty period.

A base vibration analysis shall also be completed at the same time as the alignment before startup and within one month of the end of the warranty. The base vibration analysis shall include the results of a pass/fail of the pump based on pump manufacture's requirements. The report shall include the data collected from the pump/motor with the results compared to manufacture's requirements. The CONTRACTOR shall complete a baseline vibration analysis completed on the pump/motor. The CONTRACTOR shall provide all raw data collected, report, and analysis to the ENGINEER, both in an electronic format for future comparison and also in a paper hard copy.

#### C. Piping

See Sections 67.02 and 67.04 of the Specifications.

#### D. Elastomer Pipe Connector

The inlet and outlet side of each booster pump shall include an elastomer pipe connector (EPC) to help isolate vibration and noise in the piping system. The elastomer connector shall pass through the

ductile iron flanges designed to grip the connector so the connector seals without gaskets when the flange bolts are drawn up.

E. Service Connections on Internal Piping

All plumbed devices within the station eventually requiring service, such as meters, control valves, pumps, and like equipment, shall be easily removed from the piping by the presence of appropriately placed and sufficient quantity of adaptors and couplings. The booster pump station piping shall include compression type, flexible couplings to prevent binding and facilitate removal of associated equipment. In lieu of compression couplings, a Uni-Flange or a flanged coupling adapter (FCA) may be used. All compression couplings, Uni-Flanges, flanged coupling adapters (FCA), and flexible connectors / expansion joints shall include a minimum of two (2) control joint rods with gusset plates.

F. Combination Pressure Gauges

Combination pressure gauges shall be glycerine-filled with a built-in pressure snubber and have 6-inch minimum diameter, clear glass faces. Combination pressure gauges shall be sub-panel mounted in the pump room, and tapped on the suction side and the discharge side of each pump, as shown on the Drawings. All gauges shall read in both psi and feet of water, with a reading range as shown on the Drawings.

The Contractor shall install all tapping points and sensing lines for the pressure gauges. All tapping points for both wall-mounted gauges and pipe-mounted gauges shall include an isolation valve (ball valve) in their design to facilitate maintenance of the sensing line/gauge.

The tapping point for the low suction sensing line shall be outside of the booster pump station on the pump station side of the 6" X 6" Tapping Sleeve gate valve between the booster pump station and the ground storage tank, as shown on the Drawings. It shall consist of an eight (8) inch saddle, one inch corporation stop (ball valve type design), and curb box. All fittings shall be manufactured by Ford Meter Co, or equal.

All wall-mounted gauges shall be grouped together on a subpanel for ease of operation and monitoring. They shall be connected with flexible 1/4-inch diameter clear tubing to their respective sensing point (the sensor line from the suction piping shall be 1 inch diameter outside of the building and reduced to 1/4 inch diameter inside the pump room with an isolation valve at the point of reduction), and include a pressure limiting switch in their design. The tubing shall be carried in 1-inch diameter PVC slotted pipe and shall include both isolating and vent valves, and be arranged so as to easily vent air and facilitate gauge removal. The gauge panel layout shall be as shown on the Drawings, and a proposed layout sketch shall be provided by the CONTRACTOR to the OWNER and ENGINEER prior to construction, for approval. The sub panel, including gauges and pressure limiting switches, shall be supplied and installed by the CONTRACTOR's Electric Controls/Telemetry Manufacturer.

G. Sample Tap

A right angle outlet, smooth nose, brass sample tap shall be affixed to the piping where indicated on the Drawings. The sample tap shall contain a brass ball valve (shut-off valve) between the main line and the sample tap, as shown on the Drawings. The sample tap assembly includes a saddle, ball valve, hose bibb, and smooth nosed sample tap.

## H. Butterfly Valves

Butterfly valves 3"-20" shall be manufactured by DeZurick, Henry Pratt Co., or equal, and conform to AWWA specification C504 except as modified or supplemented herein. Milliken valves will not be allowed.

"Bolt-through" style valves will not be allowed. Valves must be flanged, for bolting from both sides, to allow the valve to remain in place when removing piping either upstream or downstream of the valve for maintenance. One piece bodies shall be composed of materials meeting the requirements of ASTM A 126, Class B, with added nickel and chromium ("semi-steel"). Valves shall be rated at 200 psi and provide bubbletight shutoff at differentials up to 200 psi. The rubber seal shall be integral to the valve body, not located on the disk itself. The disk shall have a stainless-steel edge.

Valves sized six inches (6") and smaller shall be equipped with a lever operator. Valves sized eight inches (8") and larger shall be equipped with a weather-proof, heavy-duty, gear operator complete with a position indicator.

## I. Non-Slam Check Valves

The valve shall be a Surgebuster Swing Check Valve as manufactured by Val-Matic or equal. The valve shall be suitable for 250 psi and shall be provided with flanges in accordance with ANSI B16.1, Class 125. The check valve shall be of the full body type with a domed access cover and only two moving parts, the flexible disc and the disc accelerator.

The valve shall be manufactured in accordance with AWWA C508 and certified to NSF 61.

The valve body shall be full flow equal to the nominal pipe diameter at all points through the valve. The seating surface shall be on a 45 degree angle to minimize travel of the disc. Access to replace the disc shall be provided without removing valve from line. The disc shall be a one piece construction, precision molded with an integral o-ring type sealing surface. The flex portion of the disc shall be warranted for 25-years. Non-Slam closing characteristics shall be provided through a short 35 degree disc stroke and a disc accelerator to provide a cracking pressure of 0.3 psig.

The valve body and cover shall be constructed of ASTM A536 Grade 65-45-12 ductile iron or ASTM A126 Class B for 30 in. and larger.

The disc shall be precision molded Buna-N (NBR), ASTM D2000-BG.

The disc accelerator shall be Type 302 stainless steel.

A mechanical indicator shall be provided to provide disc position indication on valves 3" (80 mm) and larger. The indicator shall have continuous contact with the disc under all operating conditions to assure accurate disc position indication.

## J. Control Valves

### 1. Pressure Relief Valve

The relief valve shall be pilot controlled, hydraulically operated, control valve. The main valve shall be furnished with a resilient, replaceable seat. The pilot control shall be a direct-acting, adjustable, spring loaded, normally closed pilot designed to close the main valve whenever the sensed pressure is below the pilot spring setting. The relief valve shall function to limit the discharge header pressure to the value set into the control pilot. The valve shall be two inches (2") in size, globe pattern, a maximum pressure rating of 250 PSI, and meet ANSI Class 150. The valve shall be a CLA-VAL Model 50-01, or equal. It shall be installed as shown on the drawings, between the four inch (4") ductile iron pipe on the discharge side of the booster pumps and the

four inch (4") ductile iron pipe on the suction side of the booster pumps, to allow recirculation of water in the event that the pumps experience an unusually high pump head.

2. On/Off Control / Altitude Control / Shut-Off Valve

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K. Gate Valve

Where indicated on the Drawings, gate valves shall be nonrising stem conforming to all the requirements of "Gate Valves - 3 in. through 48 in. - for Water and Other Liquids", AWWA C-500, and as specified in Division IV, Section 42 of the Illinois Standard Water and Sewer Specifications. The valve shall be flanged pattern, with handwheel operator; maximum working pressure 200 psi. Valves shall be manufactured by Mueller Co.

L. Water Meter & Strainer

The booster pump station shall include one meter, as shown on the Drawings. The meter shall be flanged. The meter and miscellaneous appurtenances in the pump room shall be supplied by Neptune Technology Group. No other suppliers will be allowed. The meter shall be equipped to display the flow rate and totalization information digitally on the specified Meter Interface Panels and read in U.S. Gallons. The meter shall be supplied with integral test ports to allow the meters to be tested for accuracy, as needed.

Pump Room Flow Meter: Neptune High Performance Turbine Meter, 4-inch

Transmitting Register (Quantity=1): Telemetry compatible Register

Registers to be factory pre-programmed to provide the RTU with all eight (8) wheel positions. The registers must conform to AWWA Standard C-707.

The Neptune meters are to be factory calibrated for 10-1,200 gpm

The meter upstream of the pumps shall be used for measuring the totalized pumpage, as well as the flow-rate. Each of these signals shall be available to the telemetry computer. The flow-rate signal shall also be interfaced to the dosage control input of the chemical feed pumps. Wiring shall be Belden #8770, .235 OD, or equal. The Contractor/meter supplier shall supply any necessary calibration input to provide a complete and fully functioning system, and shall include all costs in the bid for such.

M. Air Release Valve

The valve shall be installed as shown on the Drawings, designed to vent air prior to the water entering the distribution system piping. The valve inlet shall be one-inch (1") in size, float operated, lever design, maximum pressure rating of 300 psi. The float and valve internals shall be stainless steel; the valve body and cover shall be cast iron. The valve shall be a Val-Matic Model VM-22, or equal. Keystone and CLA-VAL valves will not be allowed.

A one-inch (1") quarter turn isolation valve shall be installed below the air release valve, to easily facilitate air release valve removal in the event that servicing is required.

N. Potable Water Service for Building

Each room shall have run within it, a potable water source for wash down water. The water piping shall be Schedule 80 PVC (minimum 1" diameter) and be equipped with a backflow preventer and pressure regulator. The tap for the potable water source in the pump room shall be made on the discharge side of the high service pumps. The backflow preventer shall be a WATTS Series 909QT-S, or equal.

O. Sump Pump

The CONTRACTOR shall provide a sump pump manufactured by Zoeller Pump Company, model shall be Aqua-Mate 72. The pump is a 0.3 HP 115 volts single phase. The pump and motor shall be recommended by the manufacturers for being portable and shall be able to be submerged continuously. The CONTRACTOR shall also provide two (2) twenty-five (25) foot flexible hoses that shall utilize a quick coupler for connecting the hose to the pump or hose to hose.

The pump shall include a 2 pole float operated mechanical switch and shall be an automatic style. The impeller shall be statically and dynamically balanced and designed to be non-clog. The discharge shall be 1-1/2 inch NPT. All exposed bolts and nuts shall be stainless steel

P. Static Mixer

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Q. Total Chlorine Analyzer

The total chlorine analyzers shall be purchased by the CONTRACTOR and shall be installed in a location as shown on the plans in Carrollton BPS and per OWNER at the White Hall BPS. The analyzer shall be a Prominent D1C Total Chlorine Analyzer.

R. Service Saddles and Corporation Stops

For chemical injectors, when applicable, the service saddles shall be brass, strap-type as required for the size of corporation stop specified, and shall be Ford 202B-962-CC4, or equal. The tap location should be between 7 and 8 O'clock.

The service saddles for the air release valve shall be mounted on the pipe such that the tap location is at 12 O'clock. Service saddles for the ground storage tank suction pressure sensing line, when applicable, shall be mounted on the pipe such that the tap location is between 8 and 10 O'clock or between 2 and 4 O'clock. The service saddle for the high pressure wash-down water line shall be mounted on the pipe such that the tap location is between 7 and 8 O'clock to get the 1 inch water piping to the back wall for mounting. The service saddle for the sample tap shall be mounted on the pipe such that the tap location is at 3 or 9 O'clock away from back wall. The service saddle shall be a Ford 202B-962-IP4, or equal. The quarter turn ball valve shall be brass.

#### **61.04. CHEMICAL FEED EQUIPMENT**

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#### **61.05. PRESSURE TESTING**

When the station plumbing is completed, the pressure piping within the station (including valves, pumps, control valves, fittings, and connections, as make up the entire system) shall be hydrostatically tested as described in the following paragraphs.

All tests and testing equipment shall be provided by the CONTRACTOR at no cost to the OWNER. Prior to performance of the test all air shall be expelled from the pipeline to the satisfaction of the ENGINEER. This may be accomplished by means of hydrants or other means. If required, taps shall be made at high points where air relief valves are not called for on the drawings. Such taps shall be plugged after testing is complete. Pressure test and leakage test procedures should comply with the Standard Specifications,



Section 41-2.13. The leakage test is not an acceptable formal test for passing a water main, only the pressure test is allowable.

Pressure fifty percent (50%) in excess of working pressure, as measured at the point of lowest elevation, shall be applied for not less than one (1) hour, and all pipe, fittings, valves, hydrants, and joints shall be carefully examined for defects. Leaking joints shall be remade and then retested.

The CONTRACTOR shall have the full test pressure applied to the water main segment, and verify that the water main segment is holding pressure, prior to notifying the resident project representative to observe the formal one (1) hour pressure test. Pressure test observation requests after 3:30 P.M. will be performed the next working day.

Removal of Air: In the event air is admitted to the pipeline after being expelled for the hydrostatic tests, such air shall be removed prior to completion of the system and acceptance by the OWNER. The air may be removed by the methods described in paragraph E. In no case shall the system be placed in operation prior to the removal of the air.

#### **61.06. ELECTRICAL / TELEMETRY WORK**

##### **A. General**

1. The electrical design and equipment for the station shall be as described in this section and in Section 82 of the Specifications. The radio telemetry controls for the project shall be as described in Section 84. As noted previously, the electrical equipment shall be supplied and installed by the Electric Controls/Telemetry Manufacturers. Refer to Sections 14, 82, and 84 of the Specifications regarding coordination with the local electric company.
2. New service requirements for the booster station shall be: 480Vac, 800 Amps, 3 phase and 60 Hz. The service main and meter is to be located on a "power rack" and steel pipe and uni-strut support structure external to the station. New service from the power pole (installed by Ameren) is to be brought underground into the "power rack" and then underground to the new station and landed in the motor control center.

##### **B. Control System Overview**

See Section 84.

#### **61.07. OPERATION EQUIPMENT**

##### **A. Heater/s -**

1. Ceiling mounted, and quantity as shown on the Drawings.
2. Rating – 11,200 BTU/HR – 5,000 watts, 208 volt.
3. Adjustable height mounting bracket shall be provided.
4. Control - off/heat/constant.
5. UL listed unit, direct-wired.
6. Unit heater shall be Dayton, model number 2YU65, Heavy Duty, Suspended Unit Heater, or equal.

B. Air Conditioner/s

1. One sleeve mounted through-the-wall, as shown on the Drawings.
2. Washable Filter.
3. Built-in Adjustable thermostat.
4. Safety recessed controls.
5. Three-speed fan with adjustable air flow direction.
6. Rating – 10,000 BtuH at 120 Volts.
7. UL listed rubber cord.
8. Air conditioner shall be Friedrich Model No. WS10 or equal.

C. Exhaust Fans - Pump Room and Chemical-Feed Room

1. Installed as shown on the Drawings.
2. Capacity 825 cfm at 1/8 inch static pressure.
3. Shaded pole blower.
4. 120 volt A.C. operation.
5. UL listed rubber cord.
6. #24 mesh aluminum bug screen incorporated into frame
7. Exhaust fan shall be TPI No. CE12DS, or equal.

The exhaust fans shall have dual control capabilities. Each fan shall have a thermostat controlled switch which will turn the fan either ON or OFF, dependent on a pre-determined set point. In the chemical rooms each fan shall also be capable of operating by a HAND/OFF/AUTO remote fan switch. The fan shall automatically operate if the door is opened, and remain on until it is manually turned off by the switch (i.e., the door closing shall not automatically turn off the exhaust fan), or the fan may be operated manually from outside of the room. The fan switch shall be placed next to the light switch on the building exterior with clear identification marking and be the same as the light switch. Both switches shall be in a weather proof enclosure of the toggle type.

D. Dehumidifier - Pump Room and Chemical-Feed Room

1. Installed as shown on the Drawings.
2. Minimum capacity 25 pints per 24 hours (AHAM Standard DH-1).
3. Unit shall be mounted on a free-standing rack constructed of steel angle, primed and painted, with the same primer and paint used on pipe (color to be specified by OWNER) or made of aluminum or stainless steel, 1 ft above finished floor level.
4. Condensate piped direct to pipe stubbed through the floor.
5. 120 volt A.C. operation by dial-controlled adjustable humidistat.
6. UL listed rubber cord.
7. Dehumidifier shall be Dayton Model 39K869, or equal.

E. Louver - Screened and Electrically Actuated

1. Installed as indicated on the drawings.
2. Louver shall be powered open and closed with a 120V AC actuator.
3. Blades shall be extruded aluminum with drainable blades.
4. Louver operation controlled in parallel with the exhaust fan.
5. #24 mesh aluminum screen shall be provided for bug control. Frame of louver shall be 18" x 18".
6. Provide an expanded aluminum bird and rodent screen.

Activation or deactivation of the exhaust fan shall control the operation of the louver. When the fan is called upon to run then the louver shall open. Likewise, when the fan is deactivated then the louver shall be closed. The louvers shall be manufactured by Cal-Air, Model EAD-6C, w/flange. The actuator motor shall be LF-120, 120-volt motor.

## **61.08. PROTECTIVE COATINGS**

The CONTRACTOR shall paint all piping, valves, and fittings; various architectural items; pipe bollards, walls, pump bases, sump grates, and the floor, as shown on the Drawings and described below.

The CONTRACTOR and painting subcontractor shall meet with the ENGINEER and OWNER to discuss surface preparation requirements, and the protective coating schedule. Any items that do not require surface preparation shall be adequately protected. Similarly items not to be painted shall be adequately protected during both the blast and protective coating process. The CONTRACTOR will be responsible for removing paint from items not to be painted and for repairing/replacing all items not to be blasted. The CONTRACTOR shall also take adequate time to remove, mask, or otherwise protect items to be painted a different color prior to painting operations. All walls shall be painted prior to conduits being installed and the CONTRACTOR shall be responsible for touch-up of ALL protective coatings nicked or otherwise damaged, regardless of whether said coating were provided by the CONTRACTOR or material manufacturer.

The protective coating for all exposed piping, fittings, etc., shall take place immediately after proper preparation of SSPC-SP6 Commercial Blast Cleaning, on all sides of the pipe, bolts, fittings, flanges, flange adapters, etc. Prime coat shall be Tnemec Series 1, followed by Tnemec Series N69, or equal, consisting of a two-component, high solids, amide-cured epoxy system formulated for high build application having excellent chemical and corrosion resistant properties. The protective coating shall provide in two (2) applications a minimum total dry mil thickness of 8.0 mils. The OWNER shall select the color scheme, which may consist of different colors for the piping, valves, pipe supports, grates, hand wheels, etc.

The protective coating for metal doors, door frames, and lintels shall have a tie-coat of Tnemec Series 27 F.C. Typoxy at 2.0 – 3.0 mils, followed by a coat of Tnemec Series 1095 Endura-Shield Acrylic Urethane (Semi-Gloss), or equal, applied with a minimum total dry mil thickness of 5.0 mils. The OWNER shall select the color.

The protective coating for the concrete floor of the pump station and the pump base shall be a two-part epoxy coating. The concrete floor/pump bases shall first be prepared by acid etching, whip blasting, or mechanical shot blasting in accordance with the manufacturer's recommended procedure. The first coat shall be Tnemec Series N69 Hi-Build Epoxoline, or equal, at 2 to 3 mils dry mil thickness. This sealer coat shall be applied as soon as possible before any installation of the piping, valves, etc. After the

installation of the piping, pumps, etc., the floor/pump base shall be cleaned per the manufacturer's recommendation and the final two coats applied. The intermediate coat shall be Tnemec Series N69 Hi-Build Epoxoline, or equal, at 4 to 6 mils dry mil thickness. The final floor/pump base coat shall be Tnemec Series 291, or equal, with the addition of a polypropylene additive to provide a non-skid surface as required by the OWNER, applied at 2 to 3 mils dry mil thickness. The OWNER shall select the color.

The interior block walls shall receive a three part protective coating. The surfaces shall be cleaned and dry per the manufacturer's recommendation. The first coat shall be Tnemec Series 130 Envirofill, or equal, applied at 85-115 sq.ft/gal. The intermediate and final coats shall be Tnemec Series N69 Hi-Build Epoxoline, or equal, with each coat at 4 to 6 mils dry mil thickness. The OWNER shall select the color or colors for different areas.

Machined surfaces, plates, lighting fixtures, and similar items in contact with surfaces to be painted shall be removed, masked, or otherwise protected prior to surface preparation and painting operations. Nearby surfaces and other items shall also be adequately protected by covering or removing them. In general, any damage caused by the painting operation shall be the responsibility of the CONTRACTOR and he shall properly repair/replace any such damaged items.

#### **61.09. DISINFECTION**

The disinfection of the water booster pump station facilities shall be in accordance with the American Water Works Standards C652 and C653. Disinfection procedure Method 3 of AWWA C652 is not recommended. The CONTRACTOR shall be responsible for disinfecting the facilities and obtaining Illinois Environmental Protection Agency (IEPA) bacteriologic samples clearance. A minimum of two (2) consecutive samples collected from the finished project at least 48 hours apart shall be analyzed and approved by IEPA before placing the pump station into service. The OWNER shall be present to witness the collection of all samples.

#### **61.10. START-UP**

At least one full day of start-up service and training shall be provided at the job site by the CONTRACTOR and the Electric Controls/Telemetry Manufacturers for the OWNER, the OWNER's system operator, and the ENGINEER. The OWNER, Operator, and ENGINEER shall be notified of this proposed date at least five working days prior. The entire system shall be totally operational and free of problems on the start-up / training day. The CONTRACTOR shall also have on site that day the pump supplier, and if necessary, technicians and/or equipment representatives for the various components that comprise the pump station (pumps, meters, valves, etc.), and any other persons necessary to properly train the OWNER's operations personnel in the complete and proper use, operation, and maintenance of all components of the station. The CONTRACTOR and all other appropriate equipment technicians or representatives shall provide written start-up service reports to the OWNER and ENGINEER regarding the above.

#### **61.11. WARRANTY**

The warranty is the responsibility of the CONTRACTOR and the Electric Controls/Telemetry Manufacturers and shall cover, at a minimum:

- A. A period of one (1) year commencing upon station acceptance (i.e., issuance of Substantial Completion for the entire project) by the OWNER and ENGINEER.
- B. The one (1) year period shall be in effect regardless of any component manufacturer's warranty for equipment and components within the station.
- C. The warranty shall cover all equipment, components and systems provided in or with the station.
- D. The warranty shall provide for replacement and/or repair of faulty or defective components by the CONTRACTOR and/or the Electric Controls/Telemetry Manufacturers at no cost to the OWNER during the warranty period.

Any and all other warranty criteria listed in other Sections of the Project Specifications shall also apply. Maintenance beyond the one (1) year basic warranty period shall be addressed by the pump and electrical / telemetry supplier in a timely manner.

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## **Piping**

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## **Piping**

### **Section 67**

#### **67.01. SCOPE OF WORK**

The work to be performed under this section of the Specifications shall include all labor, materials, equipment and transportation necessary for furnishing and installing piping and appurtenances shown on the Drawings and specified herein.

The CONTRACTOR shall be responsible for all materials furnished under this section, and storage of same, until the date of substantial completion. He shall replace at his expense all materials found to be defective or damaged in handling or storage. The CONTRACTOR shall, if requested by the ENGINEER, furnish certificates, affidavits of compliance, test reports or samples for any of the materials specified herein.

Specification references made herein for manufactured materials, such as pipe, fittings, and joints, refer to the designations for the American Water Works Association (AWWA), the American Standards Association (ASA), the American Society for Testing and Materials (ASTM), and the American National Standards Institute (ANSI).

These Specifications often refer to Standard Specifications for Water and Sewer Main Construction in Illinois ("Standard Water and Sewer Specs"), as a guide.

In case of conflict with the Standard Water Sewer Specifications, these Technical Provisions shall govern.

Although they may not be specifically shown on the Drawings or called for elsewhere in the Technical Provisions, the CONTRACTOR shall include in his bid price the cost of all fittings, piping supports, and miscellaneous appurtenances needed to provide a secure, workable pipe and valve system. Equipment suction and discharge piping and other exposed piping shall be supported by concrete pedestals, piers, adjustable pipe supports, thrust restraints, hangers, and tie rods as necessary to insure a stable installation. Adjustable pipe supports or piers shall be arranged to relieve attached equipment of all strain due to the weight of the pipe, fittings, valves, and the contents of the pipe. Pipe supports shall be stanchion saddle type and shall be mounted on a raised concrete curb or a solid concrete block (minimum 2" thick). Hangers shall be adjustable wrought clevis or adjustable wrought ring style.

Pipe shall be protected from truck exhaust during transportation. Pipe shall be protected from crop spraying while stored on-site, prior to installation. Pipe shall be protected during handling against impact shocks and free fall. Proper methods shall be used for handling and placing pipe to avoid damage or breaking and to avoid unnecessary disturbance of bedding surface in trench bottom. Pipe shall be kept clean at all times and no pipe shall be used in the work which does not conform to these specifications. At all times when work is not in progress, all open ends of pipe and fittings shall be securely closed with metal plugs or caps so that no trench water, earth, animal, or other substances may enter the pipe or fittings. Prior to installing a piece of pipe, the item shall be inspected for foreign materials and said materials removed. All below-ground piping shall be laid with a protective cover of at least forty-two inches (42").

## **67.02. PIPING SYSTEMS**

### **A. Gravity Pipe**

The following items shall be considered "gravity pipe": gravity mains, trunk lines, laterals, collectors, service lines, risers, and any other piping intended to carry wastewater or sludge by gravity flow or nonmechanically induced pressure.

Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used; otherwise, gravity pipe shall be one of the following, depending upon the application, unless otherwise shown on the Drawings:

1. Exposed or Unsupported Gravity Pipe - The pipe shall be considered exposed or unsupported whenever it is inside a structure, submerged above ground elevation, or any location where the pipe must be strong enough to span a distance between installed supports, unless otherwise shown on the Drawings or specified herein, exposed gravity pipe shall be the following:
  - Ductile Iron (D.I.) Pipe; Class 53, flanged or grooved joint.
2. Buried Gravity Pipe - The pipe shall be considered buried if placed below grade and fully supported by the earth. Unless otherwise shown on the Drawings or specified herein, buried gravity pipe shall be one of the following:
  - Ductile Iron (D.I.) Pipe; Class 53, push-on gasketed joint.
  - Polyvinyl Chloride (PVC) Pipe; minimum SDR of 35; solvent weld or push-on gasketed joint.
  - PVC; SDR 26; push-on gasketed joint. For use where gravity drain pipe intersects or parallels potable water main. Water quality pipe shall be used until a minimum of 10' clear distance can be maintained between the drain line and the water main.

### **B. Pressure Pipe**

The following items shall be considered "pressure pipe": force mains, pump intake lines, potable and nonpotable waterlines, air mains, and any other pipe which generally operates under mechanically induced pressure flow.

1. Supported Exposed Pressure Pipe - Pressure pipe shall be considered supported whenever it is inside a structure, in the walls of a structure, above ground elevation, or any location where the pipe must be supported at a maximum spacing of five (5') feet. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used; otherwise, the following materials are equally acceptable for supported exposed pipe:
  - PVC; SDR 21, Class 200; Solvent Weld or mechanical joint.
2. Unsupported Exposed Pressure Pipe - Pressure pipe shall be considered unsupported whenever it is inside a structure, in the walls of structure, above ground elevation, or any location where the pipe must be strong enough to span a distance greater than five (5') feet between supports. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used; otherwise, the following materials are equally acceptable for unsupported pressure pipe:

-Ductile Iron (D.I.) Pipe; see the below table for both flanged or grooved joint

Pipe Size (Nominal I.D.)	Minimum Thickness	Thickness Class	Pressure Class
3"	0.25"	53	250
4"	0.32"	53	350
6"	0.34"	53	350
8"	0.36"	53	350
10"	0.38"	53	350
12"	0.40"	53	350
14"	0.42"	53	350
16"	0.43"	53	350
18"	0.44"	53	350
20"	0.45"	53	350
24"	0.47"	53	350
30"	0.51"	53	250
36"	0.58"	53	250
42"	0.65"	53	250
48"	0.72"	53	250
54"	0.81"	53	250
60"	0.83"	53	250
64"	0.87"	53	250

-Steel or Carbon Steel Pipe; Schedule 40; welded, flanged, threaded, or grooved joint.

- Polyethylene encasement shall be used on all buried ductile iron pipes.

3. Buried Pressure Pipe - Any pressure pipe placed below grade and fully supported by the earth shall be considered buried pressure pipe. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used; otherwise, the following materials are equally acceptable for buried pressure pipe:

-PVC Pipe; SDR 21, Class 200; push-on gasketed, mechanical, or grooved joint.

-Ductile Iron (D.I.) Pipe, see the below table for flanged, restrained-joint, slip-joint, or grooved joint.

Pipe Size (Nominal I.D.)	Minimum Thickness	Thickness Class	Pressure Class
3"	0.25"		350
4"	0.25"		350
6"	0.25"		350

Pipe Size (Nominal I.D.)	Minimum Thickness	Thickness Class	Pressure Class
8"	0.25"	350	
10"	0.26"	350	
12"	0.28"	350	
14"	0.31"	350	
16"	0.34"	350	
18"	0.36"	350	
20"	0.38"	350	
24"	0.43"	350	
30"	0.49"	350	
36"	0.56"	350	
42"	0.63"	350	
48"	0.70"	350	
54"	0.79"	350	
60"	0.83"	350	
64"	0.87"	350	

### **67.03. PIPE EXCAVATION AND CLEANUP**

#### **A. Excavation and Backfill**

Pipe excavation and backfill shall be performed in accordance with Division II, Section 20 and Division III, of the Standard Water and Sewer Specifications, except as hereinafter supplemented or modified.

Backfill under proposed structures and driveways shall be "Selected Granular Backfill". Backfill for all other areas shall be with excavated material unless otherwise shown or noted.

Backfill and bedding shall be incidental to the unit price of water main installation.

#### **B. Restoration of Surfaces**

Restoration of surfaces shall be performed in accordance with Division II, Section 21 of the Standard Water and Sewer Specifications, except as hereinafter supplemented or modified.

All surfaces shall be restored to at least as good of condition or better than that which existed prior to construction.

All lawn areas disturbed shall be final graded, fertilized, seeded (Class 1), and mulched, See Section 31, (Method III) and shall be incidental to the contract price.

The use of CA6 for temporary surfaces and driveway repair shall be incidental to unit price of water main installation.

Oil and chip streets/driveways disturbed during construction operations shall be repaired with Bituminous Surface Treatment of Class A-2, and shall be constructed in accordance with Section 403 of the Illinois Standard Specifications for Road and Bridge Construction adopted January 1, 1997. Bituminous Surface Treatment shall be incidental to the unit price of water main installation.

C. Finishing and Cleanup

Finishing and cleanup shall be performed in accordance with Division II, Section 22, of the Standard Water and Sewer Specifications and Section 31 of these specifications.

**67.04. PIPE MATERIAL, FITTINGS, AND JOINTS**

A. Material and Fittings

1. Ductile Iron (D.I.) - Ductile iron pipe shall be as specified in the Standard Water and Sewer Specifications under Division III, Section 30 for gravity pipe and under Division IV, Section 40 for pressure pipe. All buried pipe shall be tar coated; all pipe, buried or above ground, shall be cement lined, unless the pipe is used for conveying air in which case interior lining is not required. Fittings shall conform to AWWA C 153 and AWWA C 111; coating and lining shall coincide with requirements for the pipe into which the fitting is installed. Compact mechanical joint or flanged fittings shall be allowed.

All interior piping and fittings greater than 2 inches (2") shall be ductile iron, Class 53, flanged, per AWWA C-104, C-153, and C-115, unless otherwise shown on the Drawings. Interior piping that is 2 inches (2") or smaller (such as the recirculation line) shall be brass. Threaded pipe may be used on connections for piping smaller than 2-inch. All exterior piping to at least 5 feet beyond the building perimeter or edge of concrete driveway shall be mechanical joint ductile iron restrained joint pipe, field lok gaskets are not allowed. The piping sizes shall be as shown on the Drawings. Fittings shall be Tyler/Union.

Although they may not be specifically shown on the Drawings or called for elsewhere in the Specifications, the CONTRACTOR shall include in his bid price the cost of all fittings, piping supports, and miscellaneous appurtenances needed to provide a secure, workable pipe and valve system. Equipment suction and discharge piping and other exposed piping shall be supported by concrete pedestals, piers, adjustable pipe supports, thrust restraints, hangers, and tie rods as necessary to insure a stable installation. Adjustable pipe supports or piers shall be arranged to relieve attached equipment of all strain due to the weight of the pipe, fittings, valves, and the contents of the pipe. Pipe supports shall provide lateral or transverse support as well. Pipe supports shall be stanchion saddle type. Hangers shall be adjustable wrought clevis or adjustable wrought ring style. The CONTRACTOR shall provide a pipe support plan to the Owner and Engineer for approval prior to construction.

2. Polyvinyl Chloride (PVC) - PVC pipe and fittings shall be as specified in the Standard Water and Sewer Specifications under Division III, Sec. 30 for gravity and drain pipe; the minimum wall thickness shall be based on SDR 35 for diameters up to 12", for greater than 12" the manufacturer shall make a recommendation to be approved by the ENGINEER. The drain pipe, only within the French drain, shall have four longitudinal rows of 1/4" diameter perforations separated and spaced as described for Vitrified Clay Pipe under ASTM C-700. PVC pipe for pressure pipe shall be as specified under Division IV, Section 40 of the Standard Sewer Specifications; SDR 21 shall be used unless otherwise noted; PVC pressure pipe fittings shall be as specified under Section 40 of the Standard Water and Sewer Specifications.

3. Polyethylene encasement shall conform to ANSI/AWWA C 105/A21.5 Standards. Polyethylene material will deteriorate rapidly when exposed to direct sunlight. Store all polyethylene encasement out of the sunlight. If during the installation period it is anticipated that the polyethylene encasement will be exposed to sunlight for more than two weeks (i.e. Open trench) Type C (black) polyethylene material must be used.

#### B. Joints

1. Ductile Iron (D.I.) Pipe
  - a. Push-on and Mechanical - These joints shall conform to all requirements of AWWA C-111; gaskets for mechanical joints on compressed air piping shall be asbestos impregnated rubber or equal, to withstand temperatures up to 250 degrees F. All exterior joints shall contain anchor couplings or Ford UFR-1400, mechanical joint restraining glands as called out on the Plans.
  - b. Flanged - These joints shall conform to all requirements of AWWA C-115; gaskets for flanged joints on air piping shall be of asbestos composition or equal, to withstand temperature up 250 degrees F.
  - c. Grooved - These joints shall conform to all requirements of AWWA C-606; gaskets for air piping shall be capable of withstanding temperatures up to 250 degrees F.
2. Polyvinyl Chloride (PVC) Pipe - For gravity pipe, solvent welded and push-on gasketed joints shall conform to ASTM D-2855 and ASTM D-3212, respectively. For pressure pipe, push-on gasketed joints shall conform to ASTM D-3139, and mechanical and grooved joints shall be as specified in Section 2.3.B.1.

### **67.05. PIPE APPURTENANCES**

#### A. Gravity and Drain Pipe

#### B. Pressure Pipe

1. Wall Sleeves and Wall Pipes – Wall Sleeves shall be PVC or Steel with intermediate flanges, and shall be used where all pipes 3" or larger pass through block walls, floors, or foundations. The wall sleeves and wall pipes shall be placed in position before the concrete is poured to insure a watertight connection. To allow for possible settlement of backfill adjacent to structures and to allow some rotation of the pipe joint without pipe rupture, a mechanical joint or other mechanical flexible connection approved by the ENGINEER will be required at all outside walls. A pipe linx shall be used to seal between the wall sleeve and the pipe. The joint shall be as close to the wall as possible but no further than 18" beyond the wall.

The type and size shall be compatible with the pipe and wall thickness. All piping passing through the floor or walls of the pump station building shall utilize both a wall sleeve and a pipe linx manufactured by Calpico, Inc, or equal. Stainless Steel hardware shall be used when going in or out of the Ammonia and Hypochlorite chemical feed rooms.
2. Valve Vaults and Boxes - Valve vaults and boxes, except as otherwise shown on the Drawings, shall conform to the requirements of Division IV, Section 44 of the Standard Water and Sewer Specifications.

#### C. Gate Valves - Exterior

Gate valves shall be designed for a minimum water working pressure of 250 psi. Valves shall be resilient wedge, non-rising stem type, and shall be used with the type of pipe and joint to be installed. Gate valves shall have a clear waterway equal to the full nominal diameter of the valve and shall be opened by turning counterclockwise. The operating nut shall have an arrow, cast in the metal, indicating the direction of opening. Each valve shall have the maker's initials, and pressure ratings cast on the body. Prior to shipment from the factory, each valve shall be tested by hydraulic pressure equal to twice the water working pressure.

2"-12" gate valves shall conform to AWWA Standards C509 & C550 and be Mueller A-2360-20, with 'O' ring seals or an equal American Flow Control. 14"-36" gate valves shall conform to AWWA Standards C550, & C515 and be Mueller A-2361-20, with 'O' ring seals and a 90° bevel gear actuator or an equal American Flow Control. Gate valves 14"-36" shall be installed so that all gate valves in a cluster are installed on with the bevel gear on the same side of the main. For example, the gate valves at a cross should both be installed on the north and west side of the mains.

Gate valves shall have mechanical joints. No "push-on" joints will be allowed. All bolts for the bonnet shall be stainless steel, or approved equal. All bolts for the retainer glands shall be corten. The valve, below the operating nut, shall be wrapped in 4 mil plastic. The plastic wrap shall cover the bonnet, the mechanical joint glands, bolts, and valve body.

The CONTRACTOR shall install a carsonite marker at each gate valve installed on the relocated water main and the installation of the carsonite marker shall be incidental to the installation of the gate valve.

#### D. Valve Boxes - Exterior

Valve boxes shall be ductile iron. Boxes shall be of the extension type with screw adjustment and flared base. The minimum thickness of metal shall be 3/16 inch. The word "WATER" shall be cast in the cover. Boxes shall be installed over each gate valve. The boxes shall be of such a length that will permit adjustment in length, without full extension, to the depth of cover required over the pipe at the valve location. The CONTRACTOR shall supply extension stems, as necessary, where the water main is installed deeper than normal due to utilities, convenience, etc. This work shall be incidental to the Contract.

Valves and valve boxes shall be installed at locations determined by the OWNER or his representative. Valves not set at that location shall be relocated by the CONTRACTOR at no cost to the OWNER. Tracer wire shall be brought up the outside of the valve box and doubled under the lid. Valves shall be set plumb. Valve boxes shall be centered on the valve. Earth fill shall be carefully tamped around each valve box to a distance of four feet (4') on all sides of the box or to the undisturbed trench face if less than four feet (4'). Valves shall not be located in tillable fields or areas where agricultural practices pose the possibility of damaging the valves and/or valve boxes. Valve boxes to be manufactured by Sigma or Tyler.

Approval of location must be given by Township Supervisors when valve boxes are located on public R.O.W. and the City of Carrollton when valve boxes are on their property.

All valve boxes for valves 4-inch to 12-inch shall be installed upon the valve with the use of a Gate Valve Adaptor as manufactured by Adaptor Inc., or equal, to stabilize the valve box, and shall be incidental to the contract price. All valve boxes for valves 14-inch to 24-inch shall be centered over the operating nut and installed upon a level surface of rock, compacted around the bevel gear and operating nut, to stabilize the valve box. The compacted rock shall be incidental to the Contract

Price. Substantial completion will not be issued to the CONTRACTOR until it has been verified by the OWNER that all gate valves can be accessed and operated with a standard valve wrench.

#### E. Hydrants - Exterior

The hydrant shall have male connections with National Standard hose coupling threads. The opening of all hydrants shall be counterclockwise. An arrow shall be cast or stamped on the top indicating the direction to open. The operating nut shall be National Standard. The main valve opening shall be designed so that removal of all working parts can be accomplished without excavating. Furthermore, the main valve assembly, drain ring, and drain ring housing shall be connected to the shoe by drain ring housing bolts, allowing easy maintenance, repair, or replacement of the entire barrel assembly without water shut-off. CONTRACTOR shall provide all necessary reducers and/or enlargers for complete connection, and shall be included in the bid price for flushing/fire hydrants.

Fire hydrants shall be set at such elevations that the connecting pipe will not have less cover than the main water main. Blocking shall be as shown on the drawings. Not less than seven (7) cubic feet of clean gravel shall be placed around the base of the hydrant to insure drainage. A woven, nylon, polypropylene fabric shall be placed over the gravel to prevent infiltration of soil into the drainage field. The backfill around the hydrant shall be thoroughly compacted to the grade line. Hydrants shall have the interior cleaned of all foreign matter before installation. Stuffing boxes shall be tightened and the hydrant shall be inspected in working condition. The CONTRACTOR shall remove all of the internals of the hydrant during initial flushing of the water main, in order to prevent rocks, dirt, etc., from damaging the working parts of the hydrants. All hydrants shall be set plumb and one hose connection shall face the road, or to the satisfaction of the OWNER or ENGINEER. Hydrants shall be painted with one (1) primer coat of red paint and two (2) red finish coats.

The hydrant must employ a compression type main valve which closes with pressure. The operating nut is to be made of bronze or cast iron. The operating threads and thrust collar shall be sealed from the waterway by one or more "O" rings and shall be lubricated from a sealed, self-contained lubricant reservoir. Upper and lower stems shall be jointed with a cast iron coupling with stainless steel pins.

There shall be a minimum of two (2) drain ports. These drains shall be of bronze. The drain valves shall be rubber or leather faced and shall work automatically with the main valve and permit draining of the barrel with the main valve closed. Springs must be bronze or stainless steel if springs are utilized in drain valve assembly.

The hydrant seat must be bronze with a machined seating surface. The main valve assembly shall be seated in a subseat of all bronze material so as to provide bronze to bronze engagement of the valve seat ring and to provide a drainage channel of non-ferrous material. This bushing must be locked in place mechanically to prevent rotation or accidental removal.

Where a hydrant is installed adjacent to a road bore or ditch crossing the depth of bury required may be greater than that listed below. In these instances, the CONTRACTOR shall provide the appropriate depth of bury at no additional cost to the OWNER.

##### 1. 2 ¼" Flushing Hydrants

Flushing hydrants shall be a post type suitable for forty-eight (48") bury by Mueller model A-411. The hydrant shall be designed for 150 lbs. working pressure and 300 lbs. hydrostatic test pressure. The hydrant must employ a compression type main valve which closes with pressure.



The operating nut is to be made of bronze or cast iron. The hydrant shall have a two and one-fourth (2-1/4") inch barrel, a single, two and one-half inch (2-1/2") hose nozzle with National Standard thread and a three inch (3") ring/fluid tight inlet connection, to adapt to any size PVC water main. The hydrant shall be joined to the water main by a mechanical joint shoe sized to match the water main and a Large End Mechanical Joint Reducer when necessary.

## 2. 4 1/2" Flushing Hydrants

4 1/2" Flushing Hydrants shall have a base connection as required for the type and size of pipe used in the water main construction. The hydrant shall be designed for 200 lbs. working pressure and 400 lbs. hydrostatic test pressure. Hydrants shall be of the dry barrel type, with breakable body traffic model, conforming to AWWA C502, and shall have a valve opening at least 4-1/2 inches in diameter. The flush hydrant shall be designed for a minimum of forty-two (42") inch bury. The hydrant shall have two 2-1/2 inch hose connections. The main valve opening shall not be less than 4-1/2 inches.

The safety flange shall be set approximately four inches (4") above ground level. All 4-1/2 flush hydrants shall be Mueller model A-420 Super Centurion 250 with 6" mechanical joint base shoe.

## 3. Fire Hydrants

Fire hydrants shall have a base connection as required for the type and size of pipe used in the water main construction. The hydrant shall be designed for 200 lbs. working pressure and 400 lbs. hydrostatic test pressure. Hydrants shall be of the dry barrel type, with breakable body traffic model, conforming to AWWA C502, and shall have a valve opening at least 5-1/4 inches in diameter. The fire hydrant shall be designed for a minimum of forty-eight (48") inch bury. The hydrant shall have two 2-1/2 inch hose connections, and one 5-1/4 inch pumper connection.

The main valve opening shall not be less than 5-1/4 inches.

The safety flange shall be set approximately four inches (4") above ground level. All fire hydrants shall be Mueller model A-420 Super Centurion 250.

### Anchor Couplings - Exterior

Anchor Couplings of the appropriate size and length shall be utilized between the gate valve and the fire hydrant, between the tee and the gate valve, between other fittings and fittings, valves and/or hydrants as shown on the detail sheets. Anchor coupling shall be designed to conform to the following provisions;

DI Pipe Barrel: ANSI/AWWA C151/A21.51 Class 53

Groove Depth: AWWA C606 Table 1

DI Retaining Ring: ANSI/AWWA C151/A21.51

DI Swivel Follower: ANSI/AWWA C110/A21.10 Compatible.

Wall thickness beneath the groove shall exceed the minimum referenced in ANSI/AWWA C150/A21.50 Table 50.13 "Thickness for Internal Pressure", for 350 psi rating plus a surge allowance of 100 psi. The pipe shall be furnished with a bituminous exterior coating per ANSI/AWWA C151/A21.51 and cement mortar lined and seal coated per ANSI/AWWA C104/A21.4.

#### F. Copper Tracer Wire

Copper tracer wire shall be installed with all PVC raw and finished water main, and service lines (up to the service meter). The wire shall be cooper-clad steel wire coated with HDPE and shall be connected to all valves and brought up into each valve box (on the exterior of the box, and doubled-over under the cover on the interior), and shall be connected to all hydrants and service meter pits, creating a continuous wire throughout all water main and appurtenances. All splices of tracer wire shall utilize either Copperhead Connector 3WB-01 manufactured by Copperhead Industries, Inc, Monticello, MN, direct bury splice kits. During installation of the 3WB-01, the CONTRACTOR shall tie the tracer wire into a knot and leave approximately four (4) inches to be inserted into the connector per manufacture's specifications. The CONTRACTOR shall install Copperhead Tracer Wire Model No. 1430HS manufactured by Copperhead Industries, Inc in Monticello, MN, for water main installed by trenching. The CONTRACTOR shall install 1245EHS manufactured by Copperhead Industries, Inc in Monticello, MN, for water main installed by directional boring. The Contractor shall include in his bid price for water main installation all costs associated with tracer wire installation.

Substantial completion will not be issued to the CONTRACTOR until it has been verified by the OWNER that all tracer wire is continuous and can be field located with the OWNER's locating equipment.

#### **67.06. THRUST BLOCKS**

All bends of 11-1/4 degrees or greater, and all tees, plugs, reducers, fire hydrants, and flushing hydrants shall be thrust protected to prevent movement of the lines under pressure. Blocking shall be Portland Cement Concrete poured in accordance with Division IV, Section 41-2.09 of the Standard Sewer and Water Specifications, or precast blocking for small diameter pipe where the undisturbed soil is extremely firm and stable. Thrust blocking shall extend from the fitting to the undisturbed soil. Pipe and fitting joints shall remain accessible for repairs. Where unstable soil conditions exist, all deflections in the pipe from a straight line shall be provided thrust blocking in accordance with the manufacturer's recommendations.

Concrete for reaction or thrust blocks shall have a twenty-eight (28) day compressive strength of not less than 3,000 psi.

No wooden wedges, treated or otherwise, short lengths of PVC or D.I. pipe, etc., shall be allowed for shims or spacers for the blocking in any circumstance.

## **Electrical**

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## **Electrical**

### **Section 82**

#### **82.01. SCOPE OF WORK**

Work Included: Furnish all equipment, machinery, labor, materials, apparatus and services necessary to complete the electrical and control system as shown on the drawings and as described in these specifications. Also included is all work, services, testing, adjusting, retesting and readjusting as required in order to place into approved satisfactory operation all of the systems shown on the Drawings, called for in the specifications, as directed by the ENGINEER, and as required by the job conditions.

The CONTRACTOR shall make a complete review of the Drawings and Specifications and bring to the attention of the ENGINEER prior to bidding any Work that he feels should be included.

The CONTRACTOR shall provide Record Drawings ("As-Built" Drawings) of schematics of all control panels and major electrical components and shall include the costs for such in his Bid Price.

#### **82.02. CODES AND FEES**

All electrical work shall conform to the National Electric Code of the National Board of Fire Underwriters as a minimum standard of quality and performance, as well as the National Electric Safety Code and all local codes.

All electrical materials shall bear the National Board of Fire Underwriters label whenever standards have been set and label service is regularly furnished by that agency.

All material shall be installed in accordance with manufacturer's directions. If Drawings or Specifications are contrary to manufacturer's directions, CONTRACTOR will bring this to the attention of the ENGINEER for final decision as to method of installation.

The CONTRACTOR shall obtain and pay for all permits required for the execution of the Work under this Contract. All tests and inspections required by the authorities having jurisdiction will be made by the CONTRACTOR at his expense. The CONTRACTOR shall deliver certificates of all such permits and inspections to the ENGINEER.

Equipment Grounding - Each electrical equipment item in the station shall be properly grounded per Section 250 of the National Electrical Code. Items to be grounded include, but are not limited to, pump motor frames, control panel, transformer, receptacles, lights, light switches, exhaust fans, and pressure switches. All ground wires from installed equipment shall be in conduit and shall lead back to the control panel to a copper ground buss specific for grounding purposes and so labeled. The ground buss shall be complete with a lug large enough to accept the installing electrician's bare copper earth ground wire. The bus shall serve as a bond between the earth ground and the equipment ground wires. In addition, site electric service grounding shall be done according to local electric utility requirements.

The CONTRACTOR shall complete Arc Flash study and verify no PPE will be required when opening electric panels. This study shall be in the form of a written report given to the ENGINEER.

### **82.03. TESTS**

The complete electrical system will be tested after completion of the Work and reports of the test will be given to the ENGINEER.

Tests will include:

- A. Tests for A Phase, B Phase, and C Phase shorts with a 1,000 volt Meggar.
- B. Tests for open circuits with a 1,000 volt Meggar.
- C. Voltage test at point furthest from electric service to determine that there is no excessive drop in potential with a 1,000 volt Meggar.
- D. Test the insulation resistance of the system to ground with a 1,000 volt Meggar.

The CONTRACTOR shall chart and record the results of the above test and give a copy to ENGINEER. The CONTRACTOR shall correct any abnormal condition found in the electrical system at his expense.

### **82.04. CONDUIT**

Conduit shall be sized to the N.E.C. Requirements for conduit fill, but in no case be less than ½" in diameter. The conduit shall also bear the Underwriters Laboratories inspection label.

Schedule 80 PVC conduit, sized by the Electric Controls/Telemetry Manufacturers to adequately accept the inbound service conductors, and/or telemetry or telephone cables, shall be installed from the main power or control panel through the floor and/or wall and terminate exterior to the building.

All wiring within the building and outside of the control panel or panels shall be run in Schedule 40 PVC conduit properly supported at a 36-inch maximum spacing, except for the watertight flexible conduit and fittings properly used to connect pump drivers, fan motors, solenoid valves, limit switches, etc., where flexible connections are best utilized. The dehumidifier(s), exhaust fan(s), and air conditioner(s), where furnished by the original manufacturer with a UL approved rubber cord and plug, may all be plugged into their associated receptacles. The heater(s) shall be direct-wired.

Unless otherwise noted, conduit shall be Schedule 40 PVC conduit adequately sized by the Electric Controls/Telemetry Manufacturers to handle the type, number and size of equipment conductors to be carried - in compliance with Article 347 of the National Electrical Code (NEC) and NEMA TC-2, Federal WC-1094A and UL-651 Underwriters Laboratories Specifications.

In chemical feed rooms conduit shall be rigid, heavy wall, Schedule 40 PVC with solvent weld moisture-proof connections adequately sized to handle the type, number and size of equipment conductors to be carried, in compliance with Article 347 of the National Electrical Code and NEMA TC-2, Federal WC-1094A and UL-651 Underwriters Laboratory Specifications. The conduit shall be properly supported @ 36" maximum spacing.

Flexible Connections - Where flexible conduit connections are necessary, the conduit used shall be liquid-tight, flexible, totally nonmetallic, corrosion resistant, nonconductive, U.L. listed conduit sized to handle the type, number and size of equipment conductors to be carried - in compliance with Article 351 of the National Electrical Code.

Metallic conduit shall have insulated bushings.

All conduit will be swabbed until all moisture and grit are removed before pulling wire.

Double locknuts shall be used at termination of rigid steel conduit at all knockout openings.

All exposed conduit shall run parallel to walls.

## **82.05. WIRE AND CABLE**

Minimum size wire is to be #12 except internal 120-volt control wire can be #14. All sizes to be A.W.G.

All low voltage control wire (50 volt or less ) shall be solid copper.

All operating voltage wire (120 volt or greater) shall be 600 volt, THWN unless otherwise stated on the plans. #10 and smaller wire shall be solid, #8 and larger shall be stranded.

All wire is to be 98% conductivity copper.

Motor circuit conductors shall be sized by the Electric Controls/Telemetry Manufacturers for load. All branch circuit conductors supplying a single motor of one (1) horsepower or more shall have an ampacity of not less than 125 percent of the motor full load current rating, dual rated type XHHW, as set forth in Article 310 and 430-B of the National Electrical Code, Schedule 310-13 for flame retardant, heat resistant thermoplastic, copper conductors in a nylon or equivalent outer covering.

Control and accessory wiring shall be sized by the Electric Controls/Telemetry Manufacturers for load, type MTW/AWM (Machine tool wire/appliance wiring material) as set forth in Article 310 and 670 of the National Electrical Code, Schedule 310-13 and NFPA Standard 79 for flame retardant, moisture, heat and oil resistant thermoplastic, copper conductors in compliance with NMTBA and as listed by Underwriters' Laboratories (AWM), except where accessories are furnished with a manufacturer supplied UL approved rubber cord and plug.

Power supply wiring and wiring for controls shall be designed for separate conduit runs, or otherwise be physically separated as necessary to avoid any potential electrical interference problems with the two types of wiring. It shall be the Electric Controls/Telemetry Manufacturers' responsibility, at no increase in the Contract price, to resolve any interference problems of this type.

## **82.06. WIRE CONNECTIONS AND DEVICES**

All fixture and branch circuit wiring joints, in junction and outlet boxes, shall be made with U.L. approved connectors and listed for 600 volts, (1,000 volts when enclosed in fixture or sign), as a pressure cable approved connector. Connector body shall consist of a cone-shaped coil spring insert, insulated with a Phenolic shell which shall be knurled for easy grip and capable of use with a wrench supplied by the manufacturer or with an electrician's pliers.

Connectors shall be Ideal Industries #78B, #76B, or #74B for branch circuit wiring.

Duplex, ground fault circuit interrupter type receptacles shall be furnished about the periphery of the building, with at least one (1) receptacle adjacent to main control panel, as shown on the Drawings. Exterior waterproof receptacles shall be provided as well, as shown on the Drawings. Chemical room receptacles shall be installed at least 5 ft off the floor to avoid being blocked by chemical drum containers, etc. All receptacle locations shall be coordinated with and pre-approved by the OWNER. Receptacles shall be 20A, GFCI rated Hubbel, or equal.

Conduit for the pumps shall be installed next to the concrete base, not through the base.

## **82.07. LIGHTING**

Inside lighting fixtures shall be 50 watt fixture, enclosed and gasketed, forty-eight (48) inch minimum length LED light fixtures installed within the building, as shown on the Drawings for this item. The fixtures shall be both chemical resistant and water resistant. The light switch shall be of the night glow type and be located conveniently adjacent to the main entry. Open fluorescent or incandescent fixtures will not be accepted. Fixtures shall be RAB model SHARK4-50NW/D10, or equal.

The outside lighting fixture shall be an incandescent lighting Dusk to Dawn kit, installed on the end of the building as shown on the drawings. It shall be an all metal, heavy duty weatherproof design, with a 270 degree field of view, capable of scanning a 23,500 square foot area. It shall have multiple time and range settings with automatic photocell deactivation during daylight. It shall use 49W lamp fixture and they shall be included in the installation. The outside lighting fixture shall be Lumapro , No. 453D94, or equal.

The Electric Controls/Telemetry Manufacturers shall provide one lighting transformer, 45KVA, 480x120-208 Volt.

Lightning Arrestor/Surge Suppressor

### **A. Description**

These specifications describe the electrical requirements for Transient Voltage Surge Suppression (TVSS) for Total Facility Protection (AC). The specified system shall provide effective TVSS in all ANSI/IEEE C62.41-1991 environments connected on the load side of the facility's meter. The TVSS shall be designed and manufactured in the USA and the manufacturer must have engaged in the design and manufacture of TVSS for a minimum of 5 years.

Related Documents and Applicable Standards:

Systems shall be designed, manufactured, tested and installed in accordance with the following standards:

1. Underwriters Laboratories (UL 1449)
2. Canadian Standard Association (cUL)
3. National Electrical Manufacturers Association
4. American National Standards Institute
5. Institute of Electrical and Electronic Engineers (C62.41 and C62.45)
6. Military Standards (MIL-STD 220A)
7. National Electric Code (Article 280)
8. National Fire Protection Association (NFPA-78)
9. Federal Information Processing Standards Publication (FIPS PUB 94)

System shall be tested to meet ANSI/IEEE C62.41-1991, tested per ANSI/IEEE C62.45-1992. The system shall be tested to 1,000 sequential ANSI/IEEE C62.41 Category C waveforms. The system shall be tested to MIL-STD 220A for electrical line noise attenuation per 50 ohm insertion loss measurement method of RF Frequencies up to 100 MHZ.



B. Work Included

Transient Voltage Surge Suppression (TVSS) System.

C. Location

Booster Service Entrance in MCC: Unit shall be rated for Category C location per ANSI/IEEE C62.41-1991. Unit shall be rated for 100,000 amperes per phase. Phase should be measured between L-N, L-G and L-L. Joule rating > 8,000.

Acceptable manufacturers are Ditek, DTG and DTGX-Series (1-800-753-2345), M.G., SPB and MZC Series (1-800-444-9860), or approved equivalent.

D. Electronic Equipment (Telemetry)

Suppressors must be installed at the point of AC service to the electronic equipment and meet the following criteria:

1. Must be AC outlets capable of handling 15 amps.
2. Surge Capacity: 39,000 amps (8 x 20 uSec).
3. Joule Rating: 420 joules (10 x 1000 uSec). (Min.)
4. All mode protection: L-L, L-N, L-G.
5. EMI/RFI Filtering.
6. UL 1449 (330 volts).
7. Diagnostic Indicator Lights.
8. Lifetime Warranty.
9. Acceptable Manufacturers: Ditek (1-800-753-2345), M.G. (1-800-444-9860), or approved equivalent.

E. Installation

The specified system shall be installed as close as possible, but not further than 12 inches in total wire lead length distance from the panel board it is protecting and shall avoid any unnecessary bends. Insulated conductors shall be provided for all necessary power and ground connections. System shall be complete, including status indicator lights providing independent protection circuit status. Other materials and equipment shall comply with applicable Sections of this Division.

F. Warranty

Manufacturer shall provide a product warranty for LIFETIME from date of installation. Warranty shall cover unlimited replacement of system components during the warranty period.

G. Quality Assurance

Those firms responding to this specification shall provide proof that they have been regularly engaged in the design and manufacturing for at least five (5) years.

## **82.08. GENERATOR AND TRANSFER SWITCH**

A. Generator

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#### B. Manual Transfer Switch

A double throw switch shall be furnished to transfer the electrical load from one supply to another. The transfer switch shall be non-fusible, 3 pole, 480 VAC Amp. The manual transfer switch shall be a Model DTNF364R as manufactured by Worldwide Electric Corp, or equal. The CONTRACTOR shall provide a Siemens Neutral Kit model HN64 or equal.

The manual transfer switch shall include a pin and sleeve for portable generator power. The type, size, and manufacturer of the receptacle assembly shall be coordinated with the OWNER (Recp. No. AREA 204226, Cord Plug No. AP204611). A 40 ft long mating cable, with a male plug and a female receptacle, shall be supplied. Receptacle shall be a Crouse-Hinds.

### **82.09. PULLING CABLE - LUBRICANT**

When necessary to use a lubricant for pulling wires, lubricant must be listed by Underwriters' Laboratories, Inc., and must be of such consistency that it will dry completely when exposed to air. Lubricant must leave no obstruction or tackiness that will prevent pulling out old wires or pulling in new wires or additional wires, and after drying must leave a film of lubricating wax which will promote easy movement of the wires. No soap flakes, vegetable oils, or ordinary lubricating oil or grease will be permitted in the conduit. Lubricant shall be Ideal "Yellow-77" or equal.

### **82.10. COORDINATION WITH LOCAL ELECTRICAL AND TELEPHONE UTILITIES**

As described in Section 14.12, the Electric Controls/Telemetry Manufacturer shall coordinate work with the local electric and telephone utilities, sub-contractors, etc., for providing any necessary electric and telephone services, both temporary and long-term. Before ordering materials and equipment, the Electric Controls/Telemetry Manufacturer shall determine from the local utility: who is intended to provide the necessary services for the proposed improvements, that the service is available, that the service will be supplied, who is responsible for setting power poles and meter bases, etc.. If any changes should be required or any services are unavailable, the Electric Controls/Telemetry Manufacturer shall immediately notify the ENGINEER.

Ameren will be setting a new service for the new booster pump station. The service will be underground in a conduit, from the electric structure to the new pole that will be installed by Ameren. The CONTRACTOR shall coordinate with Ameren and include all costs in their bid. No additional costs will be allowed. The CONTRACTOR shall build the electric structure per Ameren's requirements. The CT cabinet, meter base, structure, conduit, wire, and installation shall all be per Ameren's and the NEC latest requirements.

The Electric Controls/Telemetry Manufacturer shall further determine what service and material is being provided by the local electric and/or telephone utility and what material must be provided by the Electric Controls/Telemetry Manufacturer, and shall include all such costs in his bid, in order to produce a complete and properly functioning system. The Electric Controls/Telemetry Manufacturer shall determine what cost, if any, will be required for providing the service requested, shall pay all such costs, and shall include all such costs in his bid. The Electric Controls/Telemetry Manufacturer shall secure all necessary temporary power and/or telephone for construction of the project (for all trades, subcontractors, etc.), shall pay all such costs, and shall include all such costs in his bid. No additional payments will be allowed.

## **82.11. ELECTRIC PANEL 120/240 VOLT**

Dedicated Circuits (partial list). CONTRACTOR to document circuits and location.

- a. Heater Pump Room
- b. Heater Chemical Room
- c. A/C Pump Room
- d. A/C Chemical Room
- e. Lights Pump Room
- f. Lights Chemical Room
- g. Vent Pump Room
- h. Vent Chemical Room
- i. Dehumidifier Pump Room
- j. Dehumidifier Chemical Room
- k. Chemical Pump(Switched with Pumps)
- l. Chemical Pump(Always On)
- m. Sump Pump Receptacle
- n. Chemical Room Receptacles
- o. Pump Room Receptacles 1
- p. Pump Room Receptacles 2
- q. Exterior Receptacles 1
- r. Exterior Receptacles 2
- s. Exterior Light

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**Telemetry**

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## **Telemetry**

### **Section 84**

#### **84.01. SCOPE OF WORK**

This section contains the detailed specifications for the SCADA work. The intent of these specifications is to detail the provision of wireless telemetry system additions and modifications for the water distribution components of Greene County Rural Water District, hereafter referred to as “OWNER”. The SCADA Contractor is responsible for providing all required SCADA equipment, programming, and installation. The delivered SCADA System shall be “turnkey”.

The SCADA work within the OWNER’s distribution system shall consist of a new SCADA installation at the new Carrollton Booster Pump Station and SCADA modifications/upgrades at the Water District Office, White Hall Booster Pump Station, the West Tower, and the East Tower.

##### **A. GENERAL**

In order to reduce system complexity and future maintenance costs, the SCADA System shall consist of a homogeneous integration of equipment, setup by single supplier. The SCADA shall meet the requirements of Informative Annex G of the 2017 National Electric Code. The specifications contained herein are based on an internet-based SCADA System. The SCADA system proposed for consideration shall include a pre-submittal at least two (2) weeks prior to the bid date, and have received approval from the ENGINEER prior to bids being submitted. Responsibility for proving the system meets the requirements shall rest with the CONTRACTOR. The ENGINEER and OWNER shall be the sole judges as to the system meeting the requirements. In the event that the SCADA system is found to be lacking or inferior in any way, then the contractor shall fix/replace the inferior equipment or software and replace with a SCADA system with similar capabilities of the existing SCADA system at no additional cost to the OWNER, and within the specified completion time.

Currently, the OWNER owns and operates a SCADA System that controls and monitors two (2) Elevated Water Tanks and two (2) Booster Pump Stations. The existing SCADA System also contains a SCADA Server at the Water District Office.

##### **B. SCADA LOCATIONS**

The SCADA locations include:

1. Water District Office –Server/Computer
2. Existing White Hall Booster Pump Station
3. Existing West Elevated Tower
4. Existing East Elevated Tower
5. New Carrollton Booster Pump Station

##### **C. SCADA SUPPLIER SERVICES**

1. FCC LICENSE APPLICATION

All necessary FCC radio licensing forms shall be prepared by the SCADA Contractor and readied for signature by the designated OWNER representative. All applicable FCC licensing fees shall be paid by the SCADA Contractor.

## 2. TRAINING PROGRAM

The SCADA Supplier shall provide the OWNER's personnel with two two-day training session (first at start-up of the system and second after 3 months of operation) covering SCADA and control system operation. The date of the training session shall be at a time determined mutually agreeable by the OWNER and the SCADA Supplier.

## 3. WARRANTY

The SCADA Supplier shall provide the customer with a warranty on parts for a period of one (1) year and a warranty on labor for a period of one (1) year from the date of substantial completion. Damages due to tornado, lightning, earthquake, and other acts of God shall be acceptable warranty exclusions.

# **84.02. PRODUCTS**

OWNER is going to keep all old parts removed/replaced during the transition from the existing telemetry to the new telemetry.

## A. EQUIPMENT

### 1. OFFICE

- a. Replace Server/Computer
- b. Remove Radio/Modem
- c. Remove Antenna
- d. Replace inverter if required.
- e. Replace TVSS
- f. Reuse RF Lightning Arrestor if required
- g. Replace Uninterruptable Power Supply

### 2. WHITE HALL BOOSTER PUMP STATION

- a. Replace RTU
- b. Remove Radio/Modem
- c. Remove Antenna
- d. Replace inverter if required.
- e. Replace TVSS
- f. Reuse RF Lightning Arrestor
- g. Replace Uninterruptable Power Supply
- h. Remove Bidirectional RF Signal Divider
- i. Replace I/O Rack 24 Module Rack



- j. Replace I/O Modules
  - k. Reuse Ashcroft Pressure Transducers (3)
  - l. Reuse NRI Transducer Assembly (3)
  - m. Reuse NRI Dielectric Assembly (3)
  - n. Reuse Mechanical Float Switch
  - o. Replace Graphical Interface
  - p. Reuse Cat 5 Cables
  - q. Reuse Allen Bradley Hybrid Pressure Switch (3)
  - r. Reuse General Purpose Timing Relay (6)
  - s. Remove Remote Serial Display Components
  - t. New Cellular Antenna (Roof Mount)
  - u. New Cellular Modem (Cradlepoint or equal)
3. CARROLLTON BOOSTER PUMP STATION
- a. New PLC
  - b. New Inverter
  - c. New TVSS
  - d. New RF Lightning Arrestor
  - e. New Uninterruptable Power Supply
  - f. New I/O Rack Module Rack
  - g. New I/O Modules
  - h. New Ashcroft Pressure Transducers (3)
  - i. New Transducer Assembly (3)
  - j. New Dielectric Assembly (3)
  - k. New Mechanical Float Switch
  - l. New Graphical Interface
  - m. New Cat 5 Cables
  - n. New Hybrid Pressure Switch (3) by Richard Electric
  - o. New General Purpose Timing Relay (6)
  - p. New Cellular Antenna (Roof Mount)
  - q. New Cellular Modem (Cradlepoint or equal)
4. WEST TOWER
- a. New PLC
  - b. New Inverter
  - c. New TVSS

- d. New RF Lightning Arrestor
  - e. New Uninterruptable Power Supply
  - f. New I/O Rack Module Rack
  - g. New I/O Modules
  - h. Reuse Ashcroft Pressure Transducers (1)
  - i. New Cellular Antenna (Roof Mount)
  - j. New Cellular Modem (Cradlepoint or equal)
5. EAST TOWER
- a. New PLC
  - b. New Inverter
  - c. New TVSS
  - d. New RF Lightning Arrestor
  - e. New Uninterruptable Power Supply
  - f. New I/O Rack Module Rack
  - g. New I/O Modules
  - h. Reuse Ashcroft Pressure Transducers (1)
  - i. New Cellular Antenna (Roof Mount)
  - j. New Cellular Modem (Cradlepoint or equal)

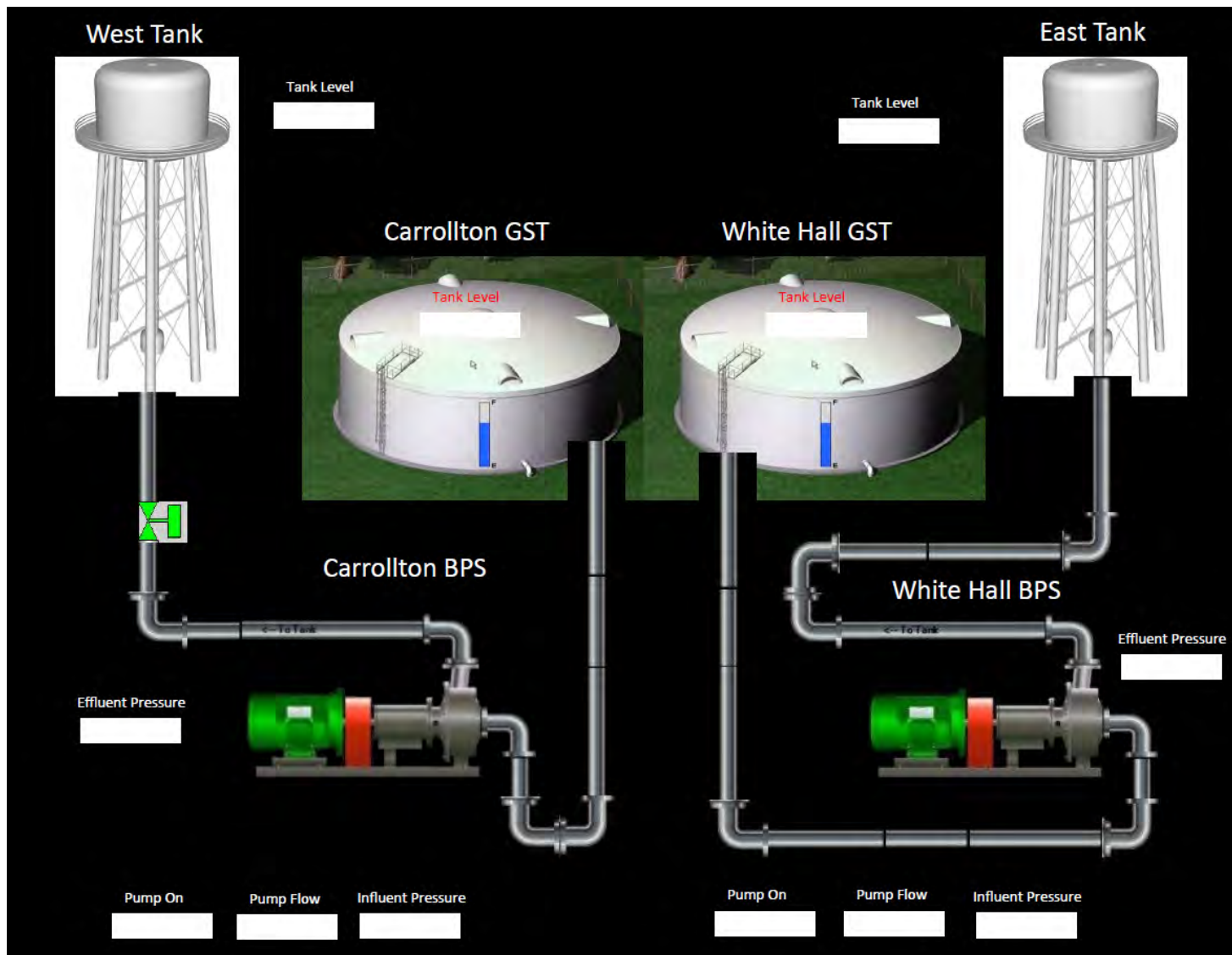
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## B. SOFTWARE

### 1. SCADA GRAPHICAL INTERFACE AND WEB SERVER SOFTWARE

A new graphical interface shall be provided to display the information about the Booster Pump Stations, Water Towers, and Ground Storage Tanks information. The system shall be open source and the OWNER shall have complete ownership and access to the software, logic, and all data used to build the system and to upgrade the software in the future. The OWNER will be able to utilize any qualified technician familiar with telemetry to upgrade or add to the new telemetry system.

Image of data that should be on home screen for the operator is below:



### **84.03. EXECUTION:**

#### **A. CARROLLTON BPS**

##### **1. PHYSICAL I/O**

###### **a. New Discrete Input Module(s)**

- |   |                     |
|---|---------------------|
| (1) 3-Phase/1-Phase Power Monitor         | – 120VAC Input      |
| (2) Entry Detect – Pump Station           | – Dry Contact Input |
| (3) VFD 1 Feedback                        | – 120VAC Input      |
| (4) VFD 2 Feedback                        | – 120VAC Input      |
| (5) Flood Detect – Pump Station           | – Dry Contact Input |
| (6) Flood Detect – Chemical Feed Room     | – Dry Contact Input |
| (7) Entry Detect – Chemical Feed Door     | – Dry Contact Input |
| (8) Chlorine Analyzer Fault               | – Dry Contact Input |
| (9) Transfer Switch (manual) Feedback BPS | – 120VAC Input      |

###### **b. New Discrete Output Module(s)**

- |                       |                     |
|-----------------------|---------------------|
| (1) Pump 1 Relay      | – 120VAC SSR        |
| (2) Pump 2 Relay      | – 120VAC SSR        |
| (3) VFD 1 Fault Reset | – Dry Contact Relay |
| (4) VFD 2 Fault Reset | – Dry Contact Relay |

###### **c. New Analog Input Module(s)**

- |  |                              |
|--|------------------------------|
| (1) Influent Pressure                  | – 4-20mA Analog Input Module |
| (2) Effluent Pressure                  | – 4-20mA Analog Input Module |
| (3) Effluent Meter Totalization + Flow | – Meter Input Module         |
| (4) Chlorine Analyzer                  | – 4-20mA Analog Input Module |
| (5) Chlorine Scale                     | – 4-20mA Analog Input Module |

###### **d. New Digital Input Module(s)**

- |                      |                              |
|----------------------|------------------------------|
| (1) Bldg Temperature | – Digital Temperature Sensor |
|----------------------|------------------------------|

###### **e. New Analog Output Module(s)**

- |                              |                        |
|------------------------------|------------------------|
| (1) VFD 1 Speed Control      | – 0-5VDC Analog Output |
| (2) VFD 2 Speed Control      | – 0-5VDC Analog Output |
| (3) Chemical Pump Control CL | – 4-20mA Analog Output |

##### **2. LOGICAL I/O**

###### **a. New Discrete States**

- |                            |
|----------------------------|
| (1) Power Status (ON/FAIL) |
|----------------------------|

- (2) Pump 1 Status (ON/OFF)
- (3) Pump 2 Status (ON/OFF)
- (4) Pump 1 Fail Status (OK/FAIL)
- (5) Pump 2 Fail Status (OK/FAIL)
- (6) Entry Detect – Pump Room (ON/OFF)
- (7) GST Transducer Fail Status (OK/FAIL)
- (8) Influent Transducer Fail Status (OK/FAIL)
- (9) Effluent Transducer Fail Status (OK/FAIL)
- (10) Meter Fail Status (OK/FAIL)
- (11) Normal Mode (ON/OFF)
- (12) Pressure Mode (ON/OFF)
- (13) Timer Mode (ON/OFF)
- (14) Entry Detect – Chemical Feed (ON/OFF)
- (15) Flood Detect – Pump Room (ON/OFF)
- (16) Flood Detect – Chemical Feed Room (ON/OFF)
- (17) Chlorine Analyzer Distribution Fail Status (OK/FAIL)
- b. New Analog States
  - (1) Effluent Pressure (PSI)
  - (2) Influent Pressure (PSI)
  - (3) Flow Rate (GPM)
  - (4) VFD Speed 1 (0-100%)
  - (5) VFD Speed 2 (0-100%)
  - (6) Chemical Dosing Post Signal (0-100%)
  - (7) Chlorine Analyzer Distribution (ppm)
  - (8) Chlorine Scale (lbs)
- c. New Digital States
  - (1) Bldg Temp (degF)
- d. New Integer States
  - (1) Influent Meter (Gal)
  - (2) Pump 1 Runtime (Minutes)
  - (3) Pump 2 Runtime (Minutes)
  - (4) Telemetry Uptime (Minutes)
  - (5) Current Lead Pump (1 or 2)

### 3. LOGICAL SETPOINTS

#### a. New Discrete Setpoints

- (1) Alternate Pumps (YES/NO)

#### b. New Analog Setpoints

- (1) Discharge Limit (PSI)
- (2) Suction Limit (PSI)
- (3) Pump Flow - Low (GPM)
- (4) Pump Flow - High (GPM)
- (5) Chemical Pump Scale Factor (X)
- (6) Desired Chlorine Residual Distribution (PPM)
- (7) Pressure Mode – Lead On (PSI)
- (8) Pressure Mode – Lead Run Time (HR)
- (9) Pressure Mode – Lag On (PSI)
- (10) Pressure Mode – Lag Run Time (HR)
- (11) Pressure Mode – Minimum Flow (GPM)
- (12) Pressure Mode – VFD Speed (VFD%)
- (13) Timer Mode – 1 Start Hour (0-24)
- (14) Timer Mode – 1 Stop Hour (0-24)
- (15) Timer Mode – 2 Start Hour (0-24)
- (16) Timer Mode – 2 Stop Hour (0-24)
- (17) Timer Mode – 3 Start Hour (0-24)
- (18) Timer Mode – 3 Stop Hour (0-24)
- (19) Timer Mode – VFD Speed (VFD%)

#### c. New Radiobutton Setpoints

- (1) Operation (AUTO/MANUAL)
- (2) Fail Over (PRESSURE/TIMER)
- (3) Pump 1 (AUTO/ON/OFF)
- (4) Pump 2 (AUTO/ON/OFF)
- (5) Lead Pump (1/2)
- (6) Lag Pump (1/2)
- (7) Tank Control Valve (AUTO/OPEN/CLOSE)
- (8) Chemical Dosing Distribution (AUTO/MANUAL)
- (9) Controlling Tank (West/East/Both)

#### 4. OPERATION/LOGIC

- a. Normal Mode – In Normal Mode, the SCADA basic logic is the following:
  - (1) Is Tower calling for water?
  - (2) Does the GST have an adequate water level
  - (3) If yes to 1 and 2, then start lead pump
  - (4) Check if pump flow is above minimum flow
  - (5) Check suction and discharge pressure and adjust VFD to keep pressure within acceptable range, adjust if necessary
  - (6) Turn on lag pump if water level in tank gets to low low level
  - (7) Turn off pumps when tower is full
- b. Timer Mode – In Timer Mode, the SCADA basic logic is the following:
  - (1) Kick on Pump 1 from time x to y at a set Hz
  - (2) Kick on Pump 2 from time a to b at a set Hz
  - (3) Kick on Pump 1 from time c to d at a set Hz
- c. Pressure Mode – In Pressure Mode, the SCADA basic logic is the following:
  - (1) Kick on Lead Pump based on pressure discharge pressure below set point for 15 minutes and run for X hours.
  - (2) Kick on Lag Pump based on pressure discharge pressure below set point for 15 minutes and run for X hours.
  - (3) Switch from Normal Mode to Pressure Mode, if selected by operator, shall be based on either of the following conditions:
    - (4) Communication failure between BPS and Tower
    - (5) Transducer fault at the Tower
- d. Switch from Normal Mode to Timer Mode, if selected by operator, shall be based on either of the following conditions:
  - (1) Communication failure between BPS and Tower
  - (2) Transducer fault at the Tower

#### 5. Alarms

- a. Power Failure
- b. Pump 1 Failure
- c. Pump 2 Failure
- d. VFD 1 Failure
- e. VFD 2 Failure
- f. Low Suction (GST) Pressure
- g. High Suction Pressure

- h. Low Discharge Pressure
- i. High Discharge Pressure
- j. Low Discharge Flow Rate
- k. High Discharge Flow Rate
- l. Communication Failure
- m. Suction Pressure Transducer
- n. Discharge Pressure Transducer
- o. Entry Detect – Pump Room
- p. Entry Detect – Chemical Feed Room
- q. Flood Detect – Pump Room
- r. Flood Detect – Chemical Feed Room
- s. Outside Operating Temperature – Pump Room
- t. Outside Operating Temperature – Chemical Feed Room

## B. WHITEHALL BPS

### 1. PHYSICAL I/O

- a. New Discrete Input Module(s)
  - (1) 3-Phase/1-Phase Power Monitor – 120VAC Input
  - (2) Entry Detect – Pump Station – Dry Contact Input
  - (3) VFD 1 Feedback – 120VAC Input
  - (4) VFD 2 Feedback – 120VAC Input
  - (5) Flood Detect – Pump Station – Dry Contact Input
  - (6) Flood Detect – Chemical Feed Room – Dry Contact Input
  - (7) Entry Detect – Chemical Feed Door – Dry Contact Input
  - (8) Chlorine Analyzer Fault – Dry Contact Input
  - (9) Transfer Switch (manual) Feedback BPS – 120VAC Input
- b. New Discrete Output Module(s)
  - (1) Pump 1 Relay – 120VAC SSR
  - (2) Pump 2 Relay – 120VAC SSR
  - (3) VFD 1 Fault Reset – Dry Contact Relay
  - (4) VFD 2 Fault Reset – Dry Contact Relay
- c. New Analog Input Module(s)
  - (1) Influent Pressure – 4-20mA Analog Input Module
  - (2) Effluent Pressure – 4-20mA Analog Input Module
  - (3) Effluent Meter Totalization + Flow – Meter Input Module



- (4) Chlorine Analyzer – 4-20mA Analog Input Module
- (5) Chlorine Scale – 4-20mA Analog Input Module
- d. New Digital Input Module(s)
  - (1) Bldg Temperature – Digital Temperature Sensor
- e. New Analog Output Module(s)
  - (1) VFD 1 Speed Control – 0-5VDC Analog Output
  - (2) VFD 2 Speed Control – 0-5VDC Analog Output
  - (3) Chemical Pump Control CL – 4-20mA Analog Output

## 2. LOGICAL I/O

- a. New Discrete States
  - (1) Power Status (ON/FAIL)
  - (2) Pump 1 Status (ON/OFF)
  - (3) Pump 2 Status (ON/OFF)
  - (4) Pump 1 Fail Status (OK/FAIL)
  - (5) Pump 2 Fail Status (OK/FAIL)
  - (6) Entry Detect – Pump Room (ON/OFF)
  - (7) GST Transducer Fail Status (OK/FAIL)
  - (8) Influent Transducer Fail Status (OK/FAIL)
  - (9) Effluent Transducer Fail Status (OK/FAIL)
  - (10) Meter Fail Status (OK/FAIL)
  - (11) Normal Mode (ON/OFF)
  - (12) Pressure Mode (ON/OFF)
  - (13) Timer Mode (ON/OFF)
  - (14) Entry Detect – Chemical Feed (ON/OFF)
  - (15) Flood Detect – Pump Room (ON/OFF)
  - (16) Flood Detect – Chemical Feed Room (ON/OFF)
  - (17) Chlorine Analyzer Distribution Fail Status (OK/FAIL)
- b. New Analog States
  - (1) Effluent Pressure (PSI)
  - (2) Influent Pressure (PSI)
  - (3) Flow Rate (GPM)
  - (4) VFD Speed 1 (0-100%)
  - (5) VFD Speed 2 (0-100%)
  - (6) Chemical Dosing Post Signal (0-100%)

- (7) Chlorine Analyzer Distribution (ppm)
  - (8) Chlorine Scale (lbs)
- c. New Digital States
  - (1) Bldg Temp (degF)
- d. New Integer States
  - (1) Influent Meter (Gal)
  - (2) Pump 1 Runtime (Minutes)
  - (3) Pump 2 Runtime (Minutes)
  - (4) Telemetry Uptime (Minutes)
  - (5) Current Lead Pump (1 or 2)
- 3. LOGICAL SETPOINTS
  - a. New Discrete Setpoints
    - (1) Alternate Pumps (YES/NO)
  - b. New Analog Setpoints
    - (1) Discharge Limit (PSI)
    - (2) Suction Limit (PSI)
    - (3) Pump Flow - Low (GPM)
    - (4) Pump Flow - High (GPM)
    - (5) Chemical Pump Scale Factor (X)
    - (6) Desired Chlorine Residual Distribution (PPM)
    - (7) Pressure Mode – Lead On (PSI)
    - (8) Pressure Mode – Lead Run Time (HR)
    - (9) Pressure Mode – Lag On (PSI)
    - (10) Pressure Mode – Lag Run Time (HR)
    - (11) Pressure Mode – Minimum Flow (GPM)
    - (12) Pressure Mode – VFD Speed (VFD%)
    - (13) Timer Mode – 1 Start Hour (0-24)
    - (14) Timer Mode – 1 Stop Hour (0-24)
    - (15) Timer Mode – 2 Start Hour (0-24)
    - (16) Timer Mode – 2 Stop Hour (0-24)
    - (17) Timer Mode – 3 Start Hour (0-24)
    - (18) Timer Mode – 3 Stop Hour (0-24)
    - (19) Timer Mode – VFD Speed (VFD%)

c. New Radiobutton Setpoints

- (1) Operation (AUTO/MANUAL)
- (2) Fail Over (PRESSURE/TIMER)
- (3) Pump 1 (AUTO/ON/OFF)
- (4) Pump 2 (AUTO/ON/OFF)
- (5) Lead Pump (1/2)
- (6) Lag Pump (1/2)
- (7) Tank Control Valve (AUTO/OPEN/CLOSE)
- (8) Chemical Dosing Distribution (AUTO/MANUAL)
- (9) Controlling Tank (West/East/Both)

4. OPERATION/LOGIC

a. Normal Mode – In Normal Mode, the SCADA basic logic is the following:

- (1) Is Tower calling for water?
- (2) Does the GST have an adequate water level
- (3) If yes to 1 and 2, then start lead pump
- (4) Check if pump flow is above minimum flow
- (5) Check suction and discharge pressure and adjust VFD to keep pressure within acceptable range, adjust if necessary
- (6) Turn on lag pump if water level in tank gets to low low level
- (7) Turn off pumps when tower is full

b. Timer Mode – In Timer Mode, the SCADA basic logic is the following:

- (1) Kick on Pump 1 from time x to y at a set Hz
- (2) Kick on Pump 2 from time a to b at a set Hz
- (3) Kick on Pump 1 from time c to d at a set Hz

c. Pressure Mode – In Pressure Mode, the SCADA basic logic is the following:

- (1) Kick on Lead Pump based on pressure discharge pressure below set point for 15 minutes and run for X hours.
- (2) Kick on Lag Pump based on pressure discharge pressure below set point for 15 minutes and run for X hours.
- (3) Switch from Normal Mode to Pressure Mode, if selected by operator, shall be based on either of the following conditions:
- (4) Communication failure between BPS and Tower
- (5) Transducer fault at the Tower

d. Switch from Normal Mode to Timer Mode, if selected by operator, shall be based on either of the following conditions:

- (1) Communication failure between BPS and Tower
- (2) Transducer fault at the Tower

5. Alarms

- a. Power Failure
- b. Pump 1 Failure
- c. Pump 2 Failure
- d. VFD 1 Failure
- e. VFD 2 Failure
- f. Low Suction (GST) Pressure
- g. High Suction Pressure
- h. Low Discharge Pressure
- i. High Discharge Pressure
- j. Low Discharge Flow Rate
- k. High Discharge Flow Rate
- l. Communication Failure
- m. Suction Pressure Transducer
- n. Discharge Pressure Transducer
- o. Entry Detect – Pump Room
- p. Entry Detect – Chemical Feed Room
- q. Flood Detect – Pump Room
- r. Flood Detect – Chemical Feed Room
- s. Outside Operating Temperature – Pump Room
- t. Outside Operating Temperature – Chemical Feed Room

C. WEST TOWER

1. PHYSICAL I/O

- a. New Discrete Input Module(s)
  - (1) 3-Phase/1-Phase Power Monitor – 120VAC Input
- b. New Analog Input Module(s)
  - (1) Tank Level – 4-20mA Analog Input Module
- c. New Digital Input Module(s)
  - (1) Telemetry System Temperature – Digital Temperature Sensor

## 2. LOGICAL I/O

- a. New Discrete States
  - (1) Power Status (ON/FAIL)
  - (2) Tank Level Transducer Fail Status (OK/FAIL)
- b. New Analog States
  - (1) Tank Level (FT)
  - (2) Flow Rate (GPM)
- c. New Digital States
  - (1) Telemetry Temp (degF)
- d. New Integer States
  - (1) Telemetry Uptime (Minutes)

## 3. LOGICAL SETPOINTS

- a. New Analog Setpoints
  - (1) Pump On – Lead (FT)
  - (2) Pump Off – All (FT)
  - (3) Pump On – Lag (FT)
  - (4) Valve Open (FT) (Future)
  - (5) Valve Close (FT) (Future)
  - (6) Low Level (FT)
  - (7) High Level (FT)
- b. New Radiobutton Setpoints
  - (1) Operation (AUTO/MANUAL)
  - (2) Tank Control Valve (AUTO/OPEN/CLOSE) (future)

## 4. OPERATION/LOGIC

- a. Normal Mode – In Normal Mode, the SCADA basic logic is the following:
  - (1) Tower calls for water when level is below Pump On
  - (2) Tower stops calling for water when level is above Pump Off
- b. Heater
  - (1) If temperature is low, kick on heater via solid state relay
- c. Valve (future)
  - (1) Open valve via solid state relay if level is below Valve Open
  - (2) Close valve via solid state relay if level is above Valve Close

## 5. Alarms

- a. Power Failure

- b. Low Level
- c. High Level
- d. High Discharge Flow Rate
- e. Communication Failure
- f. Tank Level Transducer Failure
- g. Telemetry Outside Operating Temperature
- h. Valve open/close failure(future)

#### D. EAST TOWER

##### 1. PHYSICAL I/O

- a. New Discrete Input Module(s)
  - (1) 3-Phase/1-Phase Power Monitor – 120VAC Input
- b. New Analog Input Module(s)
  - (1) Tank Level – 4-20mA Analog Input Module
- c. New Digital Input Module(s)
  - (1) Telemetry System Temperature – Digital Temperature Sensor

##### 2. LOGICAL I/O

- a. New Discrete States
  - (1) Power Status (ON/FAIL)
  - (2) Tank Level Transducer Fail Status (OK/FAIL)
- b. New Analog States
  - (1) Tank Level (FT)
  - (2) Flow Rate (GPM)
- c. New Digital States
  - (1) Telemetry Temp (degF)
- d. New Integer States
  - (1) Telemetry Uptime (Minutes)

##### 3. LOGICAL SETPOINTS

- a. New Analog Setpoints
  - (1) Pump On – Lead (FT)
  - (2) Pump Off – All (FT)
  - (3) Pump On – Lag (FT)
  - (4) Valve Open (FT) (Future)
  - (5) Valve Close (FT) (Future)
  - (6) Low Level (FT)

- (7) High Level (FT)
- b. New Radiobutton Setpoints
  - (1) Operation (AUTO/MANUAL)
  - (2) Tank Control Valve (AUTO/OPEN/CLOSE)
- 4. OPERATION/LOGIC
  - a. Normal Mode – In Normal Mode, the SCADA basic logic is the following:
    - (1) Tower calls for water when level is below Pump On
    - (2) Tower stops calling for water when level is above Pump Off
  - b. Heater
    - (1) If temperature is low, kick on heater via solid state relay
  - c. Valve
    - (1) Open valve via solid state relay if level is below Valve Open
    - (2) Close valve via solid state relay if level is above Valve Close
- 5. Alarms
  - a. Power Failure
  - b. Low Level
  - c. High Level
  - d. High Discharge Flow Rate
  - e. Communication Failure
  - f. Tank Level Transducer Failure
  - g. Telemetry Outside Operating Temperature
  - h. Valve open/close failure

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# IEPA Permit

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**ILLINOIS ENVIRONMENTAL PROTECTION AGENCY**

1021 North Grand Avenue, East; Post Office Box 19276; Springfield, IL 62794-9276

Division of Public Water Supplies

Telephone 217/782-1724

**PUBLIC WATER SUPPLY CONSTRUCTION PERMIT**

SUBJECT: GREENE COUNTY RWD (Greene County – 0610020)

Permit Issued to:  
Greene County Rural Water District  
323A Sixth Street  
Carrollton, IL 62016



PERMIT NUMBER: 0582-FY2018

DATE ISSUED: February 14, 2018  
PERMIT TYPE: Both

The issuance of this permit is based on plans and specifications prepared by the engineers/architects indicated, and are identified as follows. This permit is issued for the construction and/or installation of the public water supply improvements described in this document, in accordance with the provisions of the "Environmental Protection Act", Title IV, Sections 14 through 17, and Title X, Sections 39 and 40, and is subject to the conditions printed on the last page of this permit and the ADDITIONAL CONDITIONS listed below.

FIRM: Heneghan and Associates, P.C.  
NUMBER OF PLAN SHEETS: 16  
TITLE OF PLANS: "Booster Pump Station – Contract K"

**PROPOSED IMPROVEMENTS:**

\*\*\* Construct a new booster pump station at the existing site. Install two pumps each rated 225 gpm at 307 feet TDH, a sodium hypochlorite chemical feed system, a total chlorine analyzer, site piping, a radio-based SCADA system, and necessary appurtenances. \*\*\*

**ADDITIONAL CONDITIONS:**

1. Satisfactory disinfection shall be demonstrated in accordance with the requirements of 35 Ill. Adm. Code 602.310.
2. There are no further conditions to this permit.

DCC:

cc: Heneghan and Associates, P.C.  
DPWS/Collinsville Regional Office

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David C. Cook, P.E.  
Acting Manager Permit Section  
Division of Public Water Supplies

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS  
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Agency Act (Illinois Compiled Statutes, Chapter 111-1/2, Section 1039) grants the Environmental Protection Agency authority to impose conditions on permits which it issues.

These standard conditions shall apply to all permits which the Agency issues for construction or development projects which require permits under the Division of Water Pollution Control, Air Pollution Control, Public Water Supplies and Land Pollution Control. Special conditions may also be imposed by the separate divisions in addition to these standard conditions.

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year after this date of issuance unless construction or development on this project has started on or prior to that date.
2. The construction or development of facilities covered by this permit shall be done in compliance with applicable provisions of Federal laws and regulations, the Illinois Environmental Protection Act, and Rules and Regulations adopted the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification of the project, along with plans and specifications as required, shall have been submitted to the Agency and a supplemental written permit issued.
4. The permittee shall allow any agent duly authorized by the Agency upon the presentation of credentials:
  - a. to enter at reasonable times the permittee's premises where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit.
  - b. to have access to and copy at reasonable times any records required be kept under the terms and conditions of this permit.
  - c. to inspect at reasonable times, including during any hours of operation of equipment constructed or operated under this permit, such equipment or monitoring methodology or equipment required to be kept, used, operated, calibrated and maintained under this permit.
  - d. to obtain and remove at reasonable times samples of any discharge or emission of pollutants.
  - e. to enter at reasonable times and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.
5. The issuance of this permit:
  - a. shall not be considered as in any manner affecting the title of the permits upon which the permitted facilities are to be located;
  - b. does not release the permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
  - c. does not release the permittee from compliance with the other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
  - d. does not take into consideration or attest to the structural stability of any units or parts of the project;
  - e. in no manner implies or suggests that the Agency (or its officers, agents or employees) assumes any liability directly or indirectly for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
6. These standard conditions shall prevail unless modified by special conditions.
7. The Agency may file a complaint with Board of modification, suspension or revocation of a permit:
  - a. upon discovery that the permit application misrepresentation or false statements or that all relevant facts were not disclosed; or
  - b. upon finding that any standard or special conditions have been violated; or
  - c. upon any violation of the Environmental Protection Act or any Rules or Regulation effective thereunder as a result of the construction or development authorized by this permit.

# **NPDES Permit**

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## ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 • (217) 782-2829

217/782-0610

4/26/2018

GREENE COUNTY RURAL WATER DISTRICT  
CHARLIE RIVES  
323A 6TH ST  
CARROLLTON, IL 62016

RE: FACILITY : GREENE COUNTY RURAL WATER DISTRICT PHASE VI, GREENE COUNTY, IL  
COUNTY : GREENE, NPDES Permit No : ILR10Z986  
Notice of Coverage Under Construction Site Activity Storm Water General Permit

Dear NPDES Permittee:

We have reviewed your application and determined that storm water discharges associated with industrial activity from construction sites are appropriately covered by the attached General NPDES Permit issued by the Agency. Your discharge is covered by this permit effective as of the date of this letter or as identified by the conditions of the permit. The Permit as issued covers application requirements, a storm water pollution prevention plan and reporting requirements.

As a Permit Holder, it is your responsibility to:

1. Submit a modified Notice of Intent of any ownership or address change to the Permit Section within 30 days;
2. A Notice of Termination must be sent to the Agency, at the address indicated on the Notice of Termination, once your construction project has been completed and the site is properly stabilized. A Notice of Termination form has been enclosed for your convenience;

This letter shows your facility permit number below the construction site name. Please save this number and reference it in all future correspondence. Should you have any questions concerning the Permit, please contact Melissa Parrott at (217) 782-0610.

Very truly yours,

Sanjay Sofat  
Chief  
Bureau of Water

CC : Records Unit, **Heneghan** Associates, Region : Springfield

4302 N. Main St., Rockford, IL 61103 (815)967-7760  
595 S. State, Elgin, IL 60120 (847)608-3131  
2125 S. First St., Champaign, IL 61820 (217)278-5600  
2009 Main St., Collinsville, IL 62234 (618)346-5120

9511 Harrison St., Des Plaines, IL 60016 (847)294-4000  
5407 N. University St., Arbor 113, Peoria, IL 61614 (309)693-5462  
2309 W. Main St., Suite 116, Marion, IL 62959 (618)993-7200  
100 W. Randolph, Suite 11-200, Chicago, IL 60601 (312)814-6026

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# **NPDES SWPPP**

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**NPDES PERMIT NO. ILR10 SWPPP**  
**For the**  
**Proposed Greene County Rural Water District**  
**Phase VI**

**Location:** Within Greene County portions of: Bluffdale Township T11N.-R13W. Sections 34,35, and 36; Bluffdale T10N.-R13W. Sections 2,11,24,25 and,36; Carrollton Township T10N.-R12W Sections 17,19, 30, and 31; Walkerville Township T11N.-R13W Sections 1, 2, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, 24, 25,26, and 27; Patterson Township T12N.-R13W Sections 15, 22, 27 and 34; Patterson Township T12N.-R13W. Sections 13,14, 23, 24, 25, 26, 35, and 36; Patterson Township T 12N -R12W. Sections 19,20,31, and 32; Roodhouse Township T12N.-R12W Sections 21 and 22; White Hall Township T12N.-R12W. Sections , 27, 28, 33, and 34.

**Owner:** Greene County Rural Water District  
Mr. David Longmeyer- Chairman  
323A Sixth Street  
Carrollton, IL 62016

**Project Description:**

The "Proposed Greene County Rural Water District Phase VI Water Distribution System Expansion" project is taking place to serve additional areas of the water district. As a part of the "Proposed Phase VI" project, 341,210 lineal feet of 4-inch and 6--inch PVC and RJ water main will be installed. The majority of the proposed water main will be trenched and/or bored, creating minimal disturbance.

It is estimated that 78.25 acres of yards, pasture, timber, and tillable farmland will be disturbed due to the installation of the proposed water main. Installation of the water main will not alter the existing drainage patterns. Therefore, erosion control structures will be installed only where existing topographic conditions necessitate their use. Depending on weather conditions the trench will be temporarily and/or permanently seeded within the time frame set forth under the general permit. After final stabilization, the runoff coefficient for the site will be the same as it was prior to construction.

**Receiving Streams:**

As the entire site encompasses approximately 35 square miles, there are numerous unnamed ditches and tributaries that carry storm water from the site to larger creeks. The named creeks that ultimately receive storm waters from the site include Taylor Creek, Rubicon Creek, Whitaker Creek, Bear Creek, Apple Creek, Lick and Little Lick Creek, Cole Branch, Long Branch, Lands Branch, Marks Creek, Brich, Run, and ultimately the Illinois and Mississippi Rivers. Due to the type of construction, intermingling of off-site stormwater is inevitable. Such intermingling, however, will be of little consequence due to the narrow width of disturbance.

**Sequence of Major Activities and Appropriate Controls Implemented:**

It is anticipated that the primary erosion controls implemented will be directional boring, rip-rap berms, dirt berms and temporary/permanent seeding. However, any viable trench stabilization, slope stabilization or perimeter protection measure may be utilized in lieu of those described below.

1. Construction of above ground Booster Pump Station and site work.

- A. Install perimeter control for the site.
  - B. Utilize existing gravel drive and available water for truck tire wash.
  - C. Temporary seeding and mulch as needed.
  - D. Concrete wash out pit.
2. Install the water main by using either the trenching or boring method.
- A. Utilize directional boring techniques at ditch and creek crossings in highly erodible areas to eliminate soil disturbance
  - B. Install rip-rap berms or alternative ditch checks perpendicular to the trench as shown on the plans and/or where terrain dictates their use to prevent soil erosion in the trench.
  - C. Install dirt berms on hillsides through wooded areas as shown on the Drawings and described in the Specifications.
  - D. Temporarily seed and mulch any trenched areas where soil erosion could occur, except for those areas located in farm fields, within 14 days of original excavation.
- 2 Flush and test the water main in accordance with IEPA regulations. (Note: Water main flushing is a non-storm water discharge that will occur during construction.)
- A. Flush water will be directed, through the use of hose(s), away from highly erodible soils and dissipated to prevent soil erosion. A sufficient length of hose will be used to prevent flush water from discharging onto unstabilized or otherwise highly erodible soils.
- 3 Install service connections by excavating and tapping the new water main, trenching or boring the new service line as required, and setting the meter box and internal components.
- A. Each excavation for service connections will be backfilled immediately and seeded (either temporarily or permanently) within 14 days.
- 4 After all above construction activities have been completed, any temporary erosion control measures utilized will be removed (except that temporary seeding and mulch may be worked into the soil) and the entire construction site will be graded and permanently seeded and mulched.

#### Compliance with Federal, State, County, and Local Regulations:

In addition to meeting the requirements of this general permit, construction activities related to the "Proposed Greene County Rural Water District Phase VI Water Distribution System Expansion" shall comply with any and all Federal, State, County and Local regulations regarding storm water pollution prevention.

#### Maintenance Procedures:

##### 1. Dirt Berms

- A. It is anticipated that dirt berms will require minimal maintenance as they are in place primarily to divert the runoff water away from the trench line. However, it may be necessary to reconstruct dirt berms or add additional dirt berms on a given hillside. It will also be necessary to temporarily seed and mulch dirt berms to prevent erosion of the berm itself.

2. Temporary and Permanent Seeding:

- A. Reseed and re-mulch any areas where initial seeding efforts did not work.
- B. Any time it is necessary to redistribute the sediment collected against the erosion control structures it will likely also be necessary to reseed and re-mulch the same area.

3. Silt Fence:

- A. Sediment collected against the silt fence shall be removed and redistributed any time the sediment exceeds 25% of the silt fence height.
- B. Silt fence shall be inspected for depth of sediment, tears, to ensure fabric is securely attached to fence posts, and to see that the fence posts are firmly in the ground.

4. Inlet Protection:

- A. Inlet and pipe protection shall be placed as indicated on the plans or at every storm sewer inlet/crossroad culvert entrance. All inlet and pipe protection shall be maintained by removing sediment collected and restoring to original condition. Sediment collected against the BMP shall be removed and redistributed any time the sediment exceeds 25% of the BMP's effective height.

5. Ditch Checks:

- A. Ditch checks shall be placed in the ditches as indicated on the plans or at every 1.5 foot fall/rise in ditch grade. Straw bales, hay bales, and perimeter erosion barrier/silt fence will not be permitted for temporary or permanent ditch checks. Ditch checks shall be composed of aggregate, silt panels, rolled excelsior, urethane foam/geotextile (silt wedges), earth median. Ditch checks will be maintained by removing silt build up when sediment collected against the BMP shall be removed and redistributed any time the sediment exceeds 25% of the BMP's effective height.

Construction Materials and Site Access:

All materials for construction such as PVC water main, DI fittings, concrete blocks, etc., and their related containers shall be neatly stored and wastes generated from these materials shall be properly disposed of. To the extent possible, the construction materials shall be stored at one general location in a neat and orderly fashion. This does not, however, prohibit the contractor from laying out pipe, fittings, and/or related appurtenances ahead of the excavation (as per the specifications). Any waste material generated from construction related work shall be placed in dedicated containers or otherwise properly disposed of at the end of each day.

To the extent possible, there shall be a single entrance/exit access point to the material storage site and to any other single site where the contractor will be working for an extended period of time (> 2 weeks). This access point shall consist of an all weather surface to limit the movement of sediment off site.

Inspections:

A qualified individual (as defined by the IEPA) shall observe all disturbed areas of the construction site at least once every seven (7) days and within 24-hours of a rainfall event that is

construction site at least once every seven (7) days and within 24-hours of a rainfall event that is 0.5 inches or greater or an equivalent snowfall. The observer shall review the usefulness of each erosion and sediment control measure implemented, shall indicate on the report and notify the contractor of any maintenance required, and shall also note any areas that appear to require additional measures to prevent erosion of disturbed soils. Any apparent revisions to the SWPPP shall be made to the plan and implemented within seven (7) calendar days following the observation. Similarly, maintenance of existing measures shall be continuous throughout the project and shall, in no instance be left unattended for more than seven (7) days after notification. Each site observation shall be finalized by writing a report summarizing the scope of the observation, name(s) and qualifications of the observer(s), date, major observations, and actions taken as a result of the findings. A copy of each report shall be attached to, and become part of, the SWPPP.

When the ground is frozen and/or between rainfall events of 0.5 inches or greater, no site visit will be required. An inspection report, however, will still be completed at least once every seven days indicating the conditions that eliminated the need for a site visit.

#### 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."

  
Heneghan and Associates

Contractor Certification:

Contractors and/or subcontractors responsible for implementation of any of the above-mentioned erosion protection measures must sign the certification below:

“I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR10) that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.”

General Contractor

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
Company Phone

Sub-Contractor(s)

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
Company Phone

Contractor Certification continued:

Sub-Contractor(s)

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
Company Phone

Sub-Contractor(s)

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Company Address

\_\_\_\_\_  
Company Phone



# STORMWATER CONSTRUCTION SITE INSPECTION REPORT

## GENERAL INFORMATION

Project Name: Greene County Rural Water District Phase VI Contracts "K and J"

Location: Various, Throughout Greene County

Date of Inspection:

Start/End Time:

Inspector's Name:

Inspector's Title:

Inspector's Contact Information:

Describe present phase of construction:

Type of Inspection:

☐ Regular

☐ Pre-storm event

☐ During storm event

☐ Post-storm event

## WEATHER INFORMATION

Has there been a storm event since the last inspection? ☐ Yes ☐ No

If yes, provide:

Storm Start Date & Time:

Storm Duration (hrs):

Approximate Amount of Precipitation (in):

Weather at time of this inspection?

☐ Clear

☐ Cloudy

☐ Rain

☐ Sleet

☐ Fog

☐ Snowing

☐ High Winds

☐ Other:

Temperature:

Have any discharges occurred since the last inspection? ☐ Yes ☐ No

If yes, describe:

Are there any discharges at the time of inspection? ☐ Yes ☐ No

If yes, describe:

## CERTIFICATION STATEMENT

"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."

Signature of Inspector

Printed Name and Title

Date

## OVERALL SITE ISSUES

*Below are some general site issues that should be assessed during inspections. Customize this list as needed for conditions at your site.*

BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1. All inactive slopes and disturbed areas have been stabilized.	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
2. Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
3. Are all sanitary waste receptacles placed in secondary containment and free of leaks?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
4. Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
5. Are discharge points and receiving waters free of any sediment deposits?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
6. Are storm drain inlets properly protected?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
7. Is the construction exit preventing sediment from being tracked into the street?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
8. Is trash/litter from work areas collected and placed in covered dumpsters?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
9. Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
10. Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
11. Are materials that are potential stormwater contaminants stored inside or under cover?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
12. Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	
13. (Other)	<input type="radio"/> Yes <input type="radio"/> No	<input type="radio"/> Yes <input type="radio"/> No	