

**SPECIFICATIONS FOR  
Project Wesley Sewer Main Extension West of I-55**

**for the  
City of Litchfield  
Montgomery County, Illinois**

**Department of Commerce and Economic Opportunity  
Economic Development Grant**

**06-0106081**

**CITY OFFICIALS**

Steve Dougherty, Mayor  
Carol Burke, City Clerk

**ALDERMAN**

Dwayne Gerl	Ward 1
Marilyn Sisson	Ward 1
Mark Brown	Ward 2
Dave Hollo	Ward 2
Kassidy Paine	Ward 3
Tim Wright	Ward 3
Ray Kellenberger	Ward 4
Woody Street	Ward 4

Eric Lamb	Lake Supervisor
Dave Crocks	Supervisor of Streets
Ray Weller	Water Superintendent
Tonya Flannery	City Administrator



  
**Ronald M. Paul**  
**Illinois Professional Engineer**  
**No. 062-056307**  
**Expires: November 30, 2019**

**Date: March, 2019**  
**File: 02134-500**

*Prepared by:*



**HENEGHAN AND ASSOCIATES, P.C.**  
**ENGINEERS-SURVEYORS**  
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Professional Design Firm Registration No. 184-002692  
Expires April 30, 2019



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**City of Litchfield  
Litchfield, Illinois  
Sanitary Sewer Main Extension West of I-55**

**ADVERTISEMENT FOR BIDS**

Sealed Bids for the construction of the Project Wesley Sewer Main Extension West of I-55 will be received, by Carol Burke City Clerk for City of Litchfield, at the office of the 120 East Ryder Street, Litchfield, IL, 62056, until 2:00 p.m. local time on April 11, 2019, at which time the Bids received will be publicly opened and read. The Project consists of constructing one new lift station, replacing one existing lift station, and installing approximately 3,900 lineal feet of 8-inch PVC forcemain and related appurtenances.

Bids will be received for a single prime Contract. Bids shall be on a lump sum and 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 Ronnie Paul – 618-498-6418 – [rmpaul@heneghanassoc.com](mailto:rmpaul@heneghanassoc.com). Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8:00 a.m. and 4:30 p.m. and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents also may be examined at Heneghan and Associates, P.C. 1004 State Highway 16, Jerseyville, IL 62052; 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 - [http://haengr.com/projects\\_water.html](http://haengr.com/projects_water.html) and [www.dodge.construction.com](http://www.dodge.construction.com); the office of the City of Litchfield, 120 East Ryder Street, Litchfield, IL 62056, on Mondays through Fridays between the hours of 9:00 a.m. and 3:00 p.m.; and the office of the Engineer, Heneghan and Associates, P.C. 1004 State Highway 16, Jerseyville, IL 62052, on Mondays through Fridays between the hours of 8:00 a.m. and 4:30 p.m.

Bidding Documents may be obtained from the Issuing Office during the hours indicated above. Bidding Documents are available at [http://haengr.com/projects\\_water.html](http://haengr.com/projects_water.html) (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.



## 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, ~~[Milestones are to be achieved and]~~ 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: ~~{drafter should here list key categories of the Work; depending on the Project this might include electrical, fire protection, major equipment items, etc.}.~~

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 venture 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 Carol Burke.
- 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.
- ~~A. Bid prices will be compared after adjusting for differences in time of Substantial Completion (total number of calendar days to substantially complete the Work) designated by Bidders. The adjusting amount will be determined at the rate set forth in the Agreement for liquidated damages for failing to achieve Substantial Completion, or such other amount that Owner has designated in the Bid Form.~~
- ~~1. The method for calculating the lowest bid for comparison will be the summation of the Bid price shown in the Bid Form plus the product of the Bidder specified time of Substantial Completion (in calendar days) times the rate for liquidated damages [or other Owner designated daily rate] (in dollars per day).~~
  - ~~2. This procedure is only used to determine the lowest bid for comparison and contractor selection purposes. The Contract Price for compensation and payment purposes remains the Bid price shown in the Bid Form.~~
- 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 PARTICIPATION DISCLOSURE**

25.01 This project will be partially funded with Federal Funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal laws and regulations associated with that program.



**BID FORM**

**City of Litchfield**

**Sanitary Sewer Main Extension West of I-55**

**02134-500**

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## ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is submitted to:

***Carol Burke, City Clerk***

***City of Litchfield***

***120 East Ryder Street, Litchfield, IL, 62056***

- 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 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 anything 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 does not include the Liner for Manhole/Lift Station/Valve Vault.

<b>TABULATION OF BIDS - Project Wesley Sewer Main Extension West of I-55</b>					
DATE & TIME: April 11, 2019 at 2:00p.m.					
LOCATION: Litchfield City Hall, 120 East Ryder Street, Litchfield, IL 62056					
PROJECT: Project Wesley Sewer Main Extension West of I-55					
H&A FILE NO.: 02134-500					
ITEMS - BASE BID "A"		QUANTITY	UNIT	UNIT PRICE	ESTIMATED TOTAL PRICE
1	Sewer Pump Station/Valve Vault/ Meter Vault- 580 gpm @ 104 ft TDH - LLCC Removal and Replacement	1	EA.	\$	\$
2	8" PVC C900 DR 18 Force Main	3,394	L.F.	\$	\$
3	8" Restrained Joint PVC C900 DR 18 Force Main within Casing Pipe (Rt. 16 Crossing)	260	L.F.	\$	\$
4	Directional Bore 18" Restrained Joint PVC Casing Pipe (Rt. 16 Crossing)	250	L.F.	\$	\$
5	8" Gate Valve with Box	2	EA.	\$	\$
6	6" Gate Valve with Box and Blind Flange	1	EA.		
7	Combination Air Release Valve	2	EA.	\$	\$
8	Field Tile Repair	2	EA.	\$	\$
9	Select Granular Backfill	44	C.Y.	\$	\$
10	Sewer Pump Station/Valve Vault/Meter Vault -580 gpm @ 63 ft TDH - New Industrial Park	1	L. Sum	\$	\$
11	12" Restrained Joint PVC C900 DR 18 Force Main within Casing Pipe (Crossing of I-55)	320	L.F.	\$	\$
12	Directional Bore 24" Restrained Joint Casing Pipe (Crossing of I-55)	305	L.F.	\$	\$
13	Reconnect existing LLCC wet well to new LLCC lift station	1	L.Sum	\$	\$
14	Connect new 8" Force Main to existing 6" Force Main	1	L. Sum	\$	\$
15	10" PVC SDR 26, CL160 Gravity Sewer Main - 23 Feet Deep	50	L.F.	\$	\$
16	5' Diameter Concrete Manhole - 23 Feet Deep	1	L. Sum	\$	\$
<b>TOTAL BASE BID "A" AMOUNT</b>					\$

Dollars

(In Words)

Base Bid B includes the Liner for Manhole/Lift Station/Valve Vault.

DATE & TIME: March 11, 2019 at 2:00p.m.					
LOCATION: Litchfield City Hall, 120 East Ryder Street, Litchfield, IL 62056					
PROJECT: Project Wesley Sewer Main Extension West of I-55					
H&A FILE NO.: 02134-500					
ITEMS - BASE BID "B"		QUANTITY	UNIT	UNIT PRICE	ESTIMATED TOTAL PRICE
1	Sewer Pump Station/Valve Vault/ Meter Vault- 580 gpm @ 104 ft TDH - LLCC Removal and Replacement	1	EA.	\$	\$
2	8" PVC C900 DR 18 Force Main	3,394	L.F.	\$	\$
3	8" Restrained Joint PVC C900 DR 18 Force Main within Casing Pipe (Rt. 16 Crossing)	260	L.F.	\$	\$
4	Directional Bore 18" Restrained Joint PVC Casing Pipe (Rt. 16 Crossing)	250	L.F.	\$	\$
5	8" Gate Valve with Box	2	EA.	\$	\$
6	6" Gate Valve with Box and Blind Flange	1	EA.		
7	Combination Air Release Valve	2	EA.	\$	\$
8	Field Tile Repair	2	EA.	\$	\$
9	Select Granular Backfill	44	C.Y.	\$	\$
10	Sewer Pump Station/Valve Vault/Meter Vault -580 gpm @ 63 ft TDH - New Industrial Park	1	L. Sum	\$	\$
11	12" Restrained Joint PVC C900 DR 18 Force Main within Casing Pipe (Crossing of I-55)	320	L.F.	\$	\$
12	Directional Bore 24" Restrained Joint PVC Casing Pipe (Crossing of I-55)	305	L.F.	\$	\$
13	Reconnect existing LLCC wet well to new LLCC lift station	1	L.Sum	\$	\$
14	Connect new 8" Force Main to existing 6" Force Main	1	L. Sum	\$	\$
15	10" PVC SDR 26, CL160 Gravity Sewer Main - 23 Feet Deep	50	L.F.	\$	\$
16	5' Diameter Concrete Manhole - 23 Feet Deep	1	L. Sum	\$	\$
17	Lift Station/Valve Vault/Meter Vault Lining	1	L. Sum	\$	\$
<b>TOTAL BASE BID "B" AMOUNT</b>					\$

Dollars

(In Words)

EJCDC® C-410, Bid Form for Construction Contracts.

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## 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. List of Proposed Subcontractors;
  - C. List of Proposed Suppliers;
  - D. List of Project References;
  - E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
  - F. Contractor's License No.:   **[or]** Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;
  - G. Required Bidder Qualification Statement with supporting data; and

## 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*):

City of Litchfield  
120 East Ryder Street, Litchfield, IL, 62056

### BID

Bid Due Date:

Description (*Project Name— Include Location*): Project Wesley Sewer Main Extension West of I-55 one new lift station, replacing one existing lift station and installing approximately 3,900 Lineal Feet of 8" PVC forcemain 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. 500- 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]



## 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 **City of Litchfield** (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: \_\_\_\_\_



---

**NOTICE OF AWARD**

---

Date of Issuance:

Owner: City of Litchfield Owner's Contract No.:  
Engineer: Heneghan and Associates, P.C. Engineer's Project No.: 02134-500  
Project: Project Wesley Sewer Main Extension Contract Name:  
West of I-55

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:

Project Wesley Sewer Main Extension West of I-55 one new lift station, replacing one existing lift station and installing approximately 3,900 Lineal Feet of 8" PVC forcemain 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



THIS AGREEMENT is by and between City of Litchfield ("Owner") and  
("Contractor").

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        day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
  1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments

previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract

- a. 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 [REDACTED], inclusive).
  - 2. Performance bond (pages [REDACTED] to [REDACTED], inclusive).
  - 3. Payment bond (pages [REDACTED] to [REDACTED], inclusive).
  - 4. Other bonds.
    - a. [REDACTED] (pages [REDACTED] to [REDACTED], inclusive).
  - 5. General Conditions (pages [REDACTED] to [REDACTED], inclusive).
  - 6. Specifications as listed in the table of contents of the Project Manual.
  - 7. Drawings (not attached but incorporated by reference) consisting of [REDACTED] sheets with each sheet bearing the following general title: [REDACTED] [or] the Drawings listed on the attached sheet index.
  - 8. Addenda (numbers [REDACTED] to [REDACTED], inclusive).
  - 9. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages [REDACTED] to [REDACTED], 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 anything 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 General 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.)*



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

CERTIFICATE OF OWNER'S ATTORNEY

PROJECT NAME: Project Wesley Sewer Main Extension West of I-55

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



**ENGINEER'S CERTIFICATION OF FINAL PLANS AND SPECIFICATIONS**

PROJECT NAME: Project Wesley Sewer Main Extension West of I-55

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).

---

Engineer

Date

---

Name and Title





## PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

City of Litchfield  
120 East Ryder Street, Litchfield, IL, 62056

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):* Project Wesley Sewer Main Extension West of I-55 one new lift station, replacing one existing lift station and installing approximately 3,900 Lineal Feet of 8" PVC forcemain 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

\_\_\_\_\_  
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 for the performance of the Construction Contract, which is incorporated herein by reference.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### 14. Definitions

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

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

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

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

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

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

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

16. Modifications to this Bond are as follows:



## PAYMENT BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*:

City of Litchfield

120 East Ryder Street, Litchfield, IL, 62056

### CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*: Project Wesley Sewer Main Extension West of I-55 one new lift station, replacing one existing lift station and installing approximately 3,900 Lineal Feet of 8" PVC forcemain 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 satisfying 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:





**CERTIFICATIONS REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER COVERED TRANSACTIONS AND LOBBYING**

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 26, "Governmentwide Debarment and Suspension (Nonprocurement)" and 15 CFR Part 28, "New Restrictions on Lobbying."

**1. DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION-LOWER TIER COVERED TRANSACTIONS**

As required by Executive Order 12549, Debarment and Suspension, and implemented at 15 CFR Part 26, Section 26.510, Participants responsibilities, for prospective participants in lower tier covered transactions (except subcontracts for goods or services under the \$25,000 small purchase threshold unless the subtier recipient will have a critical influence on or substantive control over the award), as defined at 15 CFR Part 26, Sections 26.105 and 26.110 -

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

**2 LOBBYING**

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

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

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

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

**Statement for loan Guarantees and Loan Insurance**

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

If any 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 commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.

Submission of this statement 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 statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

**As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification(s).**

NAME OF APPLICANT

AWARD NUMBER AND/OR PROJECT NAME

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE



---

**NOTICE TO PROCEED**

---

Owner:	City of Litchfield	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	Heneghan and Associates, P.C.	Engineer's Project No.:	02134-500
Project:	Sanitary Sewer Main Extension West of I-55	Contract Name:	
		Effective Date of Contract:	

---

**TO CONTRACTOR:**

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

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

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

---

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer



# 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, 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 who’s Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary 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, 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 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 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 five 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.

### 4.02 *Starting the Work*

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

### 4.03 *Reference Points*

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

#### 4.04 *Progress Schedule*

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

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

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal Weather Conditions;
  - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

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

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

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

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

- 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
- 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable,

brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

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

#### 5.03 *Subsurface and Physical Conditions*

- A. 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.

#### 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:

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.

### **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, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required 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.
- 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. 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 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 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 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; 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 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,

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.

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:

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	\$ 1,000,000

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	\$ 500,000

General Aggregate	\$ 2,000,000
Products - Completed Operations Aggregate	\$ 1,000,000
Personal and Advertising Injury	\$ 1,000,000

Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000

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

Bodily Injury:

Each person \$ 1,000,000

Each accident \$ 1,000,000

Property Damage:

Each accident \$ 1,000,000

4. Excess or Umbrella Liability:

Per Occurrence \$ 5,000,000

General Aggregate \$ 5,000,000

5. Contractor's Pollution Liability:

Each Occurrence \$ 1,000,000

General Aggregate \$ 1,000,000



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

6. Additional Insureds: Owner and Engineer

7. Contractor's Professional Liability:

Each Claim \$ N/A

Annual Aggregate \$ N/A

8. *Waiver of Subrogation – City of Litchfield 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*: 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 required by Laws and Regulations). This insurance shall:
1. include the Owner and Contractor as named insureds, and all Subcontractors 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, 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). 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, 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, 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.
- 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., 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;
      - 4) [Deleted]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, 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. [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 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.
  - 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.
- 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 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. 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, 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.
- 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.
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.
- 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]
- 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:
  - 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
  - 2. If there is no corresponding adjustment with respect to any other item of Work; and

3. If Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

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

### **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 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. 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. 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 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.

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

be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
  - 1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
  - 2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
  - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
  - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will

notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *Final Payment*

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

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

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

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

indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

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

#### 15.07 *Waiver of Claims*

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

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).



- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

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

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

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

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

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

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

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

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

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the

contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17 – FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
  - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
  - 1. elect in writing to invoke the dispute resolution process provided for in these Standard General 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 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. 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 GC-A) 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 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; (6) requiring each party to a

subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

**19.07 *Anti-Kickback***

- A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) 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 and Pollution Control Acts***

- A. If this Contract exceeds \$100,000, Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h) and 42 USC 7401et. seq.), section 508 of the Clean Water Act (33 U.S.C. 1368) and Federal Water Pollution Control Act (33 USC 1251 et seq.), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15) is required. Contractor will report violations to the Agency and the Regional Office of the 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 Opportunity Requirements***

- A. If this Contract exceeds \$10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
- B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.
- C. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.

#### 19.11 *Restrictions on Lobbying*

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above 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, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and 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*

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

- A. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
- B. 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 delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.
- C. 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).
- D. 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.
- E. Mitigation Measures – If the project had an Environmental Report, Environmental Assessment, or Environmental Impact Statement to meet the requirements of the National Environmental Policy Act, compliance with the mitigation measures, if any, in that document are hereby included as a condition of this contract. {These mitigation measures are as follows: Insert mitigation measures if any.}

## **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



Effective			Regio		Base	Foreman	OT	OT	OT	OT					Vaca-	Train-
Date	County	Trade Title	n	Type	Class	Wage	Wage	M-F	Sa	Su	Hol	H/W	Pension		tion	ing
8/15/2018	Montgomery	ASBESTOS ABT-GEN	All	ALL		\$ 26.88	\$ 27.38	1.5	1.5	2	2	\$ 6.30	\$ 21.06		0	0.8
8/15/2018	Montgomery	ASBESTOS ABT-MEC	All	BLD		\$ 26.88	\$ 27.38	1.5	1.5	2	2	\$ 6.30	\$ 21.06		0	0.8
8/15/2018	Montgomery	BOILERMAKER	All	BLD		\$ 37.00	\$ 39.50	1.5	1.5	2	2	\$ 7.07	\$ 23.72		1.5	1.05
8/15/2018	Montgomery	BRICK MASON	All	BLD		\$ 33.13	\$ 35.12	1.5	1.5	2	2	\$ 8.75	\$ 12.44		0	0.8
8/15/2018	Montgomery	CARPENTER	All	BLD		\$ 32.24	\$ 34.49	1.5	1.5	2	2	\$ 8.55	\$ 17.50		0	0.85
8/15/2018	Montgomery	CARPENTER	All	HWY		\$ 32.15		1.5	1.5	2	2	\$ 8.45	\$ 13.00		0	0.65
8/15/2018	Montgomery	CEMENT MASON	All	ALL		\$ 33.90	\$ 34.90	1.5	1.5	2	2	\$ 9.95	\$ 14.00		0	0.4
8/15/2018	Montgomery	CERAMIC TILE FNSHER	ALL	BLD		\$ 27.48	\$ -	1.5	1.5	2	2	\$ 6.45	\$ 5.70		0	0.58
8/15/2018	Montgomery	ELECTRIC PWR EQMT OP	NE	ALL		\$ 45.09	\$ 56.52	1.5	1.5	2	2	\$ 7.10	\$ 12.62		0	0.45
8/15/2018	Montgomery	ELECTRIC PWR EQMT OP	SW	ALL		\$ 44.09	\$ 53.15	1.5	1.5	2	2	\$ 6.95	\$ 12.34		0	0.44
8/15/2018	Montgomery	ELECTRIC PWR GRNDMAN	NE	ALL		\$ 30.81	\$ 56.52	1.5	1.5	2	2	\$ 6.67	\$ 8.62		0	0.31
8/15/2018	Montgomery	ELECTRIC PWR GRNDMAN	SW	ALL		\$ 32.91	\$ 53.15	1.5	1.5	2	2	\$ 5.19	\$ 9.22		0	0.33
8/15/2018	Montgomery	ELECTRIC PWR LINEMAN	NE	ALL		\$ 50.11	\$ 56.52	1.5	1.5	2	2	\$ 7.25	\$ 14.03		0	0.5
8/15/2018	Montgomery	ELECTRIC PWR LINEMAN	SW	ALL		\$ 50.70	\$ 53.15	1.5	1.5	2	2	\$ 7.99	\$ 14.21		0	0.51
8/15/2018	Montgomery	ELECTRIC PWR TRK DRV	NE	ALL		\$ 32.32	\$ 56.52	1.5	1.5	2	2	\$ 6.72	\$ 9.05		0	0.32
8/15/2018	Montgomery	ELECTRIC PWR TRK DRV	SW	ALL		\$ 35.99	\$ 53.15	1.5	1.5	2	2	\$ 5.68	\$ 10.08		0	0.36
8/15/2018	Montgomery	ELECTRICIAN	E	BLD		\$ 37.00	\$ 40.70	1.5	1.5	2	2	\$ 7.40	\$ 10.36		0	0.56
8/15/2018	Montgomery	ELECTRICIAN	NW	BLD		\$ 35.34	\$ 37.34	1.5	1.5	2	2	\$ 7.58	\$ 10.61		0	0.4
12/14/2018	Montgomery	ELECTRICIAN	SW	ALL		\$ 39.79	\$ 42.18	1.5	1.5	2	2	\$ 7.99	\$ 11.04		0	1
8/15/2018	Montgomery	ELECTRONIC SYS TECH	E	BLD		\$ 32.73		1.5	1.5	2	2	\$ 6.95	\$ 5.56		1.31	0.4
8/15/2018	Montgomery	ELECTRONIC SYS TECH	W	BLD		\$ 33.52	\$ 53.15	1.5	1.5	2	2	\$ 3.65	\$ 9.76		0	0.4
11/30/2018	Montgomery	ELEVATOR CONSTRUCTOR	All	BLD		\$ 48.54	\$ 54.61	2	2	2	2	\$ 15.43	\$ 16.61		3.88	0.61
8/15/2018	Montgomery	GLAZIER	All	BLD		\$ 35.91	\$ 37.91	1.5	1.5	2	2	\$ 6.25	\$ 10.20		0	0.68
11/16/2018	Montgomery	HT/FROST INSULATOR	ALL	BLD		\$ 38.70	\$ 39.70	1.5	1.5	2	2	\$ 10.26	\$ 12.21		3.9	0.7
8/15/2018	Montgomery	IRON WORKER	N	BLD		\$ 31.64	\$ 33.64	1.5	1.5	2	2	\$ 9.82	\$ 15.16		0	1.09
8/15/2018	Montgomery	IRON WORKER	N	HWY		\$ 33.11	\$ 34.86	1.5	1.5	2	2	\$ 9.82	\$ 16.07		0	0.7
8/15/2018	Montgomery	IRON WORKER	S	ALL		\$ 32.00	\$ 34.00	1.5	1.5	2	2	\$ 9.46	\$ 15.50		0	0.42
8/15/2018	Montgomery	LABORER	All	ALL		\$ 25.74	\$ 26.24	1.5	1.5	2	2	\$ 6.30	\$ 20.40		0	1.43
8/15/2018	Montgomery	LATHER	All	BLD		\$ 32.24	\$ 34.49	1.5	1.5	2	2	\$ 8.55	\$ 17.50		0	0.54
8/15/2018	Montgomery	MACHINIST	All	BLD		\$ 48.38	\$ 50.88	1.5	1.5	2	2	\$ 7.23	\$ 8.95		1.85	1.47
8/15/2018	Montgomery	MARBLE FINISHERS	ALL	BLD		\$ 27.48	\$ -	1.5	1.5	2	2	\$ 6.45	\$ 5.70		0	0.58
8/15/2018	Montgomery	MILLWRIGHT	All	BLD		\$ 32.24	\$ 34.49	1.5	1.5	2	2	\$ 8.55	\$ 17.96		0	0.54
8/15/2018	Montgomery	MILLWRIGHT	All	HWY		\$ 34.98	\$ 36.73	1.5	1.5	2	2	\$ 8.55	\$ 18.52		0	0.52
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	1	\$ 37.70	\$ 40.70	1.5	1.5	2	2	\$ 12.35	\$ 18.00		0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	2	\$ 36.57	\$ 40.70	1.5	1.5	2	2	\$ 12.35	\$ 18.00		0	1

8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	3	\$	32.09	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
1/11/2019	Montgomery	OPERATING ENGINEER	All	BLD	4	\$	32.15	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	5	\$	31.82	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	6	\$	40.25	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	7	\$	40.55	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	8	\$	40.83	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	BLD	9	\$	38.70	\$	40.70	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
1/11/2019	Montgomery	OPERATING ENGINEER	All	HWY	1	\$	36.20	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	2	\$	35.07	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	3	\$	30.59	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	4	\$	30.65	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	5	\$	30.32	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	6	\$	38.75	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	7	\$	39.05	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	8	\$	39.33	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	OPERATING ENGINEER	All	HWY	9	\$	37.20	\$	39.20	1.5	1.5	2	2	\$	12.35	\$	18.00	0	1
8/15/2018	Montgomery	PAINTER	All	BLD		\$	31.25	\$	32.75	1.5	1.5	2	2	\$	5.90	\$	10.52	0	0.7
8/15/2018	Montgomery	PAINTER	All	HWY		\$	32.45	\$	33.95	1.5	1.5	2	2	\$	5.90	\$	10.52	0	0.7
8/15/2018	Montgomery	PAINTER OVER 30FT	All	BLD		\$	32.25	\$	33.75	1.5	1.5	2	2	\$	5.90	\$	10.52	0	0.7
8/15/2018	Montgomery	PAINTER PWR EQMT	All	BLD		\$	32.25	\$	33.75	1.5	1.5	2	2	\$	5.90	\$	10.52	0	0.7
8/15/2018	Montgomery	PAINTER PWR EQMT	All	HWY		\$	33.45	\$	34.95	1.5	1.5	2	2	\$	5.90	\$	10.52	0	0.7
8/15/2018	Montgomery	PILEDRIIVER	All	BLD		\$	33.24	\$	35.49	1.5	1.5	2	2	\$	8.55	\$	17.50	0	0.54
8/15/2018	Montgomery	PILEDRIIVER	All	HWY		\$	33.30	\$	35.05	1.5	1.5	2	2	\$	8.55	\$	17.50	0	0.52
8/15/2018	Montgomery	PIPEFITTER	NE	BLD		\$	42.35	\$	46.35	1.5	1.5	2	2	\$	7.25	\$	10.51	0	1.11
8/15/2018	Montgomery	PIPEFITTER	SW	BLD		\$	42.66	\$	44.79	1.5	1.5	2	2	\$	5.00	\$	8.75	0	0.35
8/15/2018	Montgomery	PLASTERER	All	BLD		\$	32.50	\$	34.00	1.5	1.5	2	2	\$	9.95	\$	9.40	0	0.4
8/15/2018	Montgomery	PLUMBER	NE	BLD		\$	41.84			1.5	1.5	1.5	1.5	\$	-	\$	-	0	0
8/15/2018	Montgomery	PLUMBER	SW	BLD		\$	42.66	\$	44.79	1.5	1.5	2	2	\$	5.00	\$	8.75	0	0.35
8/15/2018	Montgomery	ROOFER	All	BLD		\$	30.00			1.5	1.5	2	1.5	\$	10.40	\$	8.70	0	1.43
8/15/2018	Montgomery	SHEETMETAL WORKER	All	ALL		\$	34.27	\$	35.77	1.5	1.5	2	2	\$	9.25	\$	8.84	2.06	0.54
8/15/2018	Montgomery	SPRINKLER FITTER	ALL	BLD		\$	37.12	\$	39.87	1.5	1.5	2	2	\$	8.42	\$	8.50	0	0.35
8/15/2018	Montgomery	TERRAZZO FINISHER	ALL	BLD		\$	31.24	\$	-	1.5	1.5	2	2	\$	6.45	\$	4.37	0	0.42
8/15/2018	Montgomery	TERRAZZO MASON	ALL	BLD		\$	31.83	\$	31.83	1.5	1.5	2	2	\$	7.00	\$	6.80	0	0.82
8/15/2018	Montgomery	TRUCK DRIVER	All	ALL	1	\$	37.16	\$	41.17	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	ALL	2	\$	37.69			1.5	1.5	2	2	\$	11.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	ALL	3	\$	37.98	\$	41.17	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	ALL	4	\$	37.36			1.5	1.5	2	1.5	\$	12.16	\$	6.10	0	0.25

8/15/2018	Montgomery	TRUCK DRIVER	All	ALL	5	\$	39.32	\$	41.17	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	O&C	1	\$	29.73	\$	32.94	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	O&C	2	\$	30.15	\$	32.94	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	O&C	3	\$	30.38	\$	32.94	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	O&C	4	\$	30.64	\$	32.94	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25
8/15/2018	Montgomery	TRUCK DRIVER	All	O&C	5	\$	31.46	\$	32.94	1.5	1.5	2	2	\$	12.65	\$	6.35	0	0.25



**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY  
(EXECUTIVE ORDER 11246 AND 41 CFR PART 60-4)**

The following Notice shall be included in, and shall be a part of all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000.

The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<b>Timetables</b>	<b>Goals for minority participation for each trade</b>	<b>Goals for female participation for each trade</b>
	<b>%</b>	<b>6.9%</b>

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

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

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

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

County of \_\_\_\_\_

City of \_\_\_\_\_

## EDA PROJECT SIGN

The Contractor shall supply, erect, and maintain in good condition a project sign according to the specifications set forth below:

### EDA SITE SIGN SPECIFICATIONS

Size: 4' x 8' x ¾"

Materials: Exterior grade/MDO plywood (APA rating A-B)

Supports: 4" x 4" x 12' posts with 2" x 4" cross branching

Erection: Posts shall be set a minimum of three feet deep in concrete footings that are at least 12" in diameter.

Paint: Outdoor enamel

Colors: Jet Black, Blue (PMS300), and Gold (PMS7406). Specifically, on white background the following will be placed:

The U. S. Department of Commerce seal in blue, black, and gold;

“EDA” in blue;

“U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT

ADMINISTRATION” in black;

“In partnership with” in blue;

(Actual name of the) “EDA Grant Recipient” in black;

Lettering: Specific fonts are named below; positioning will be as shown on the attached illustration.

“U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT  
ADMINISTRATION” use Bank Gothic Medium - **BANK GOTHIC MED**

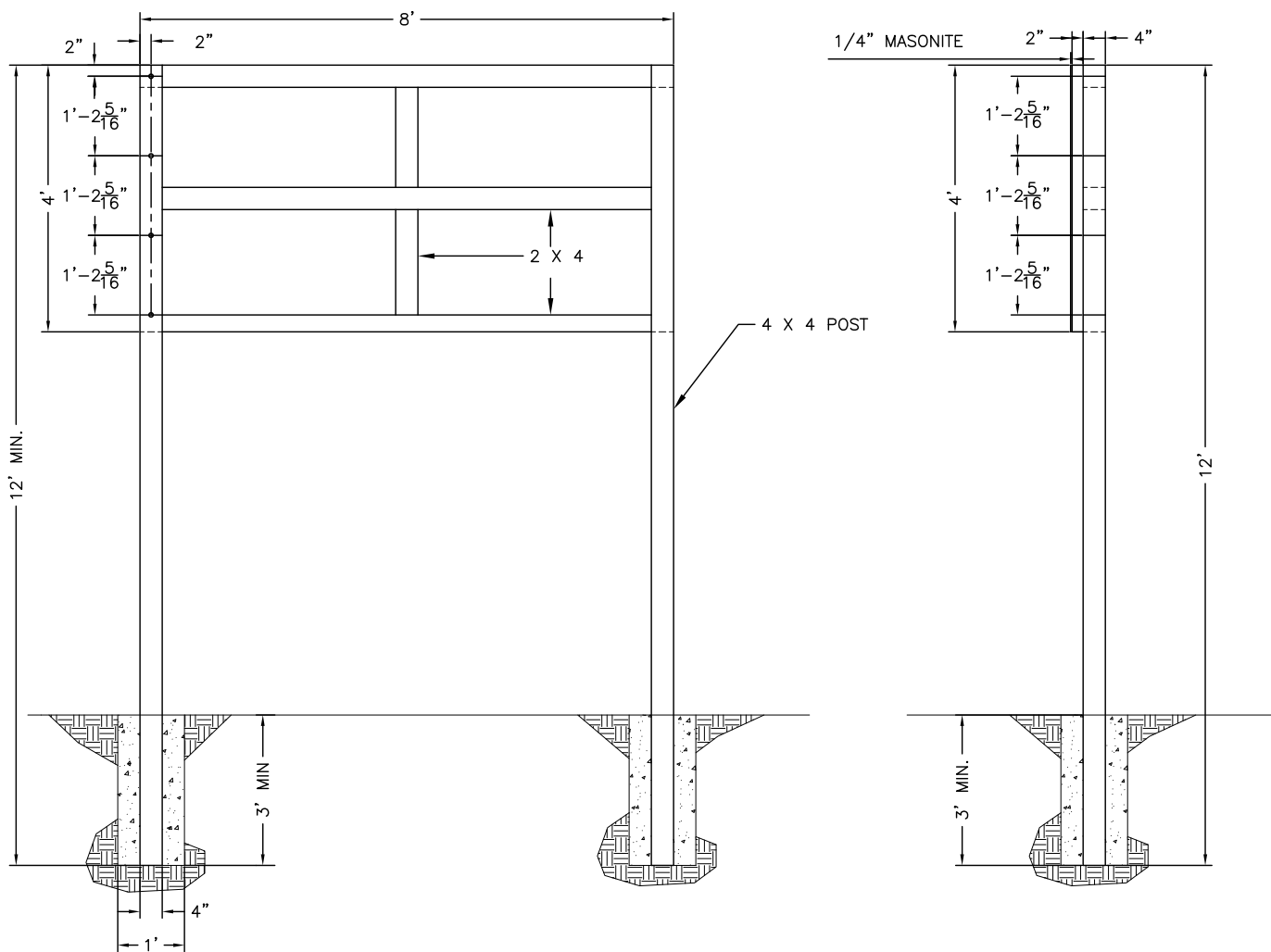
“In partnership with” use Univers<sup>TM</sup> 55 Oblique - **Univers 55**

(Name of) “EDA Grant Recipient” use Univers<sup>TM</sup> Extra Black 85 **Univers 85**

Project signs will not be erected on public highway rights-of-way. If any possibility exists for obstruction to traffic line of sight, the location and height of the sign will be coordinated with the agency responsible for highway or street safety in the area.

The EDA Regional Director may permit modifications to these specifications if they conflict with state law or local ordinances.

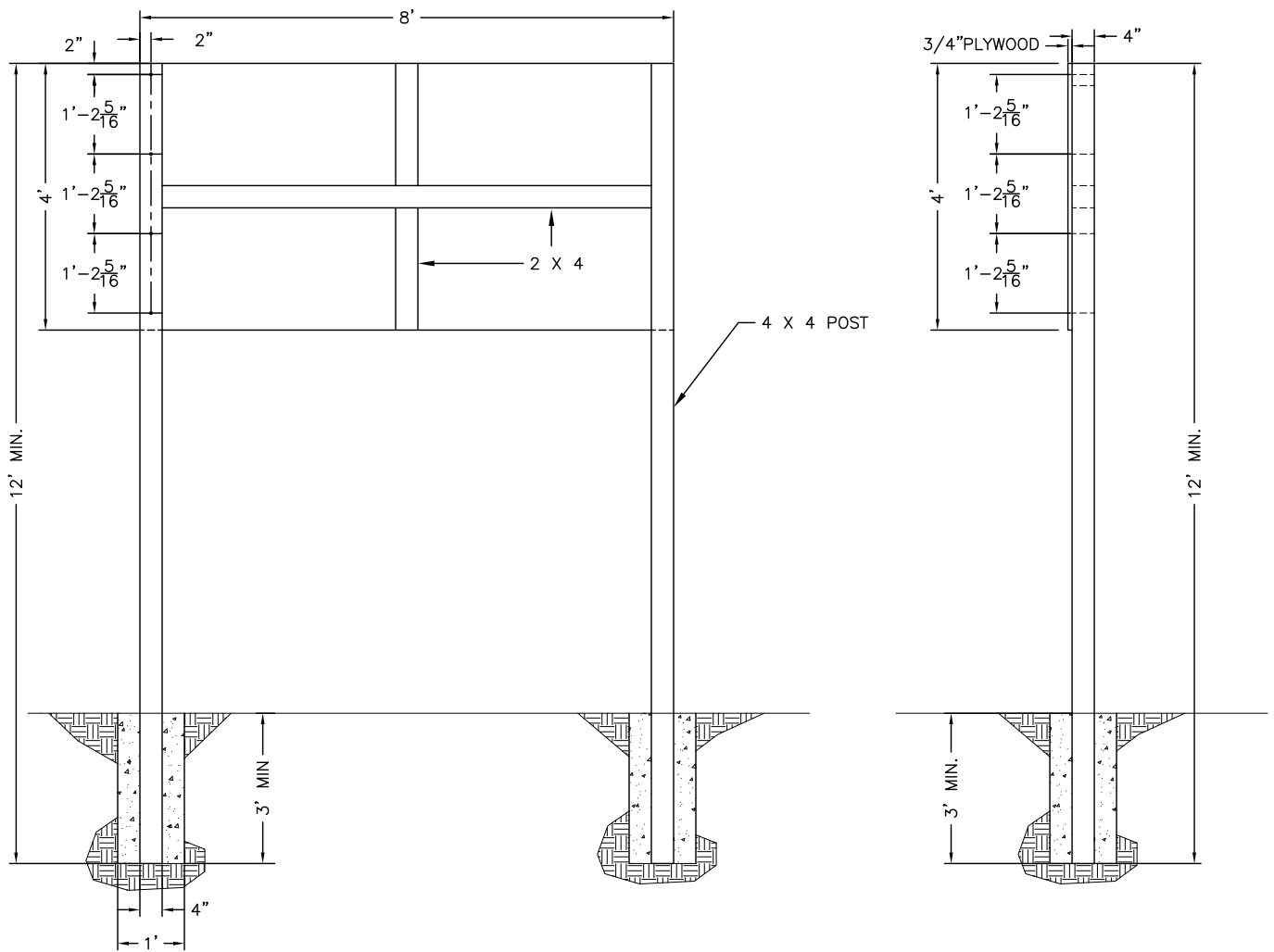




SIGN A  
MASONITE SIGN  
SCALE: 3/8" = 1'

PROJECT - SIGN A

ECONOMIC DEVELOPMENT ADMINISTRATION



SIGN B  
PLYWOOD SIGN  
SCALE: 3/8" = 1'

PROJECT – SIGN B

ECONOMIC DEVELOPMENT ADMINISTRATION



# EDA

U.S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION

*In partnership with*

**<EDA Grant Recipient Name>**





### 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]





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	
			O																	
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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.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

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.



## 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) (SEAL)

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).



## CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: City of Litchfield	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Heneghan and Associates, P.C.	Engineer's Project No.: 02134-500
Project: Project Wesley Sewer Main Extension West of I-55	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: _____





**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:

By:

By:

Engineer (Authorized Signature)

Owner (Authorized Signature)

Contractor (Authorized  
Signature)

Title:

Title:

Title:

Date:

Date:

Date:

Approved by Funding Agency (if applicable)

By:

Date:

Title:



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

Date of Issuance:	Effective Date:
Owner: City of Litchfield	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer: Heneghan and Associates, P.C.	Engineer's Project No.: 02134-500
Project: Project Wesley Sewer Main Extension West of I-55	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: \_\_\_\_\_



**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



# **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.



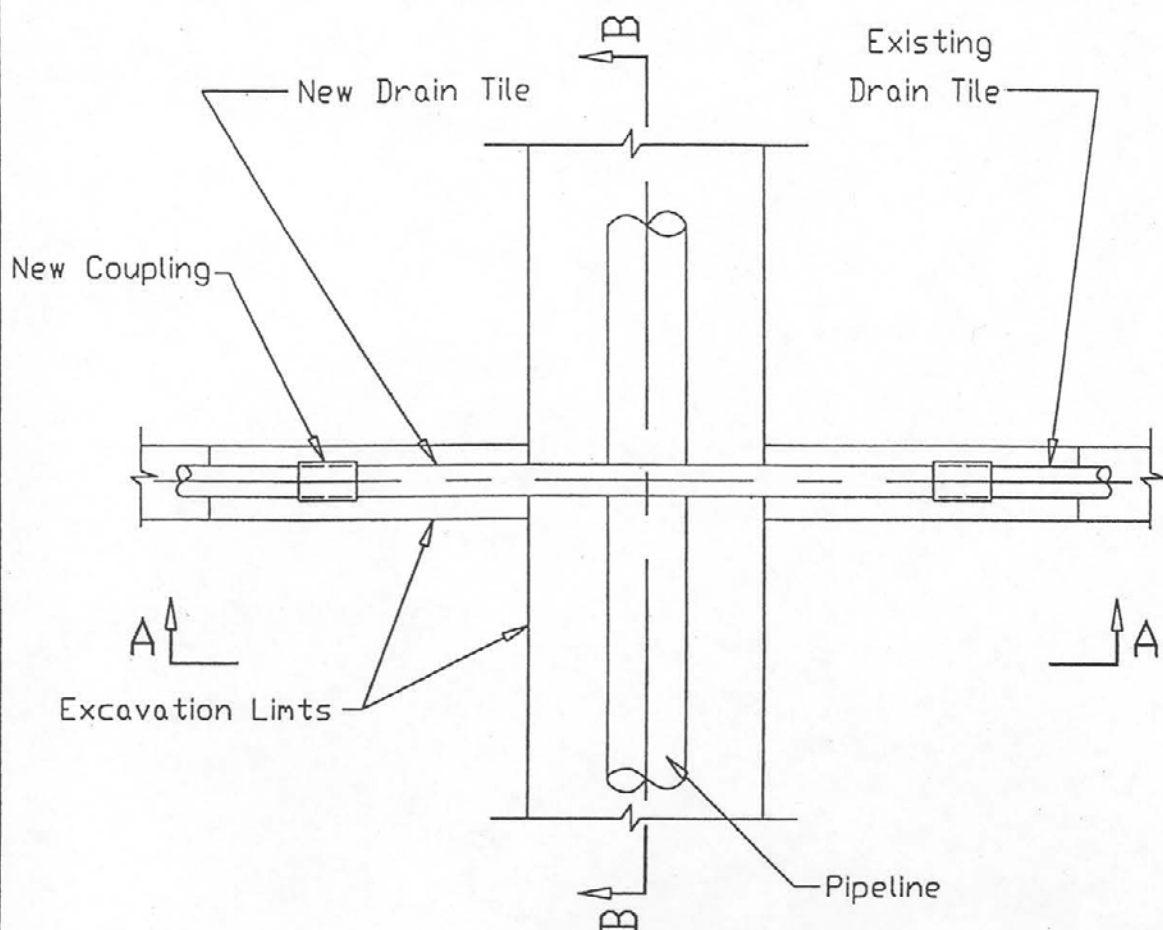
- E. The subsoil displaced by the water or sewer line must be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is acceptable to the landowner.

### **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

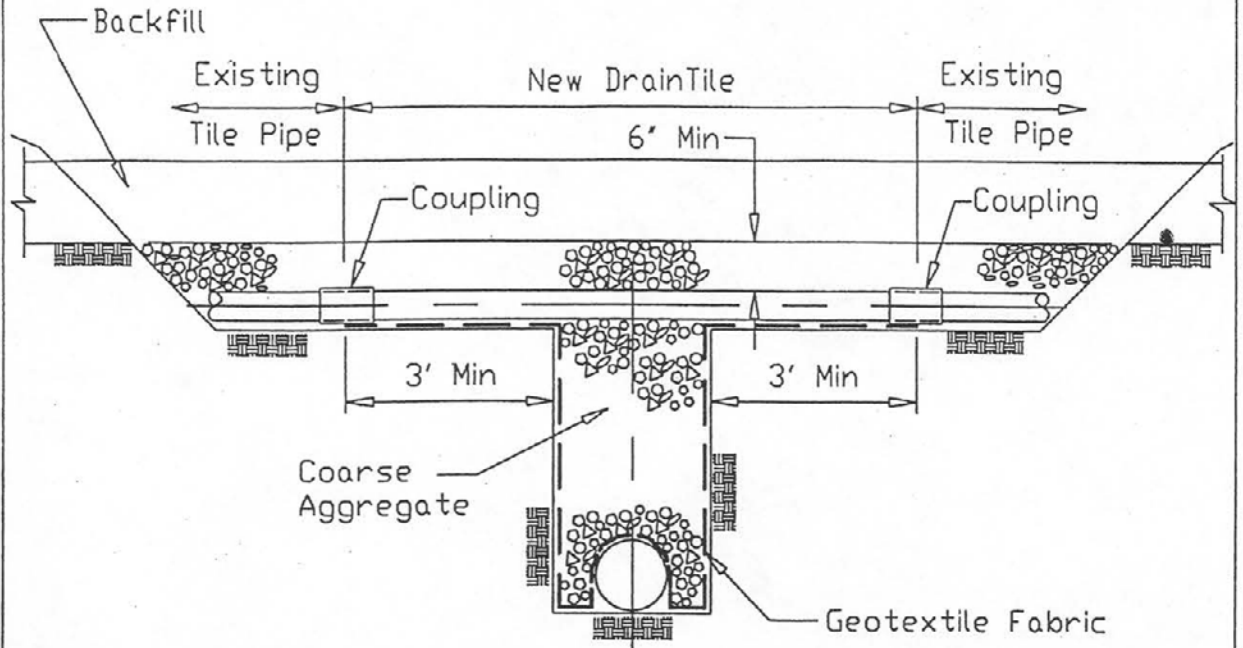
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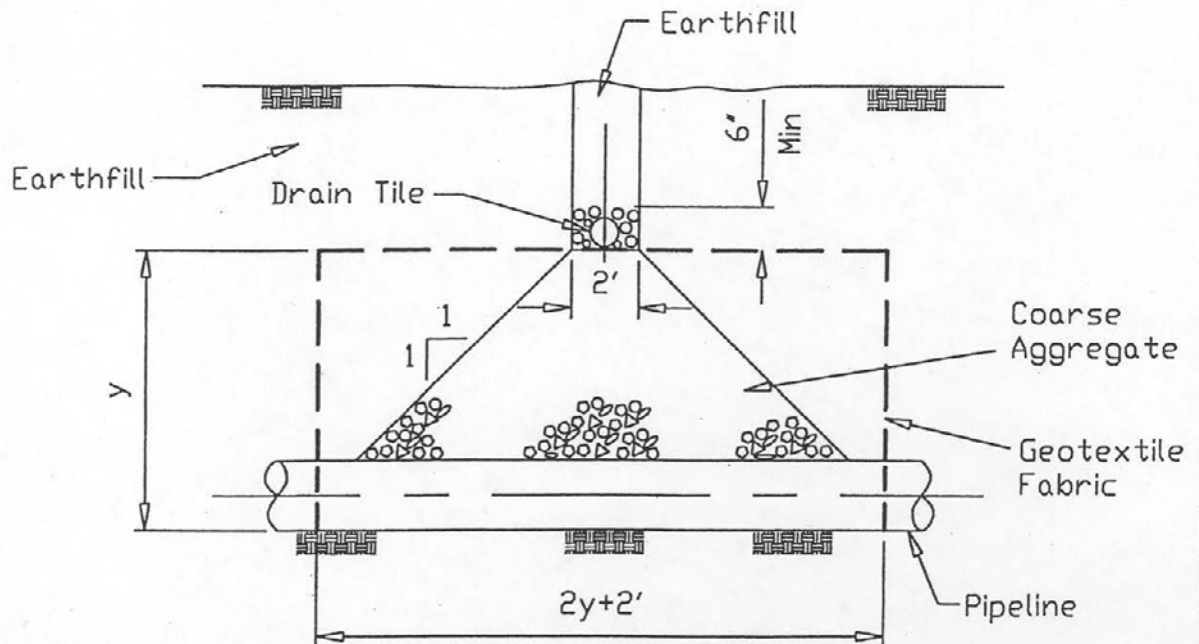
SHEET 1 OF 2

DATE: 12/98

# FIELD TILE REPAIR



SECTION A-A



SECTION B-B

AUTOCAD2000

REFERENCE  
Project \_\_\_\_\_  
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Checked \_\_\_\_\_  
Approved \_\_\_\_\_

Date \_\_\_\_\_  
Date \_\_\_\_\_  
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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.

**U. S. DEPARTMENT OF COMMERCE  
ECONOMIC DEVELOPMENT ADMINISTRATION**



**EDA CONTRACTING PROVISIONS  
FOR CONSTRUCTION PROJECTS**

These EDA Contracting Provisions for Construction Projects (EDA Contracting Provisions) are intended for use by recipients receiving federal assistance from the U. S. Department of Commerce - Economic Development Administration (EDA). They contain provisions specific to EDA and other federal provisions not normally found in non-federal contract documents. The requirements contained herein must be incorporated into all construction contracts and subcontracts funded wholly or in part with federal assistance from EDA.



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## 1. **DEFINITIONS**

*Agreement* – The written instrument that is evidence of the agreement between the Owner and the Contractor overseeing the Work.

*Architect/Engineer* - The person or other entity engaged by the Recipient to perform architectural, engineering, design, and other services related to the work as provided for in the contract.

*Contract* – The entire and integrated written agreement between the Owner and the Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

*Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents.

*Contractor* – The individual or entity with whom the Owner has entered into the Agreement.

*Drawings or Plans* – That part of the Contract Documents prepared or approved by the Architect/Engineer that graphically shows the scope, extent, and character of the Work to be performed by the Contractor.

*EDA* - The United States of America acting through the Economic Development Administration of the U.S. Department of Commerce or any other person designated to act on its behalf. EDA has agreed to provide financial assistance to the Owner, which includes assistance in financing the Work to be performed under this Contract. Notwithstanding EDA's role, nothing in this Contract shall be construed to create any contractual relationship between the Contractor and EDA.

*Owner* – The individual or entity with whom the Contractor has entered into the Agreement and for whom the Work is to be performed.

*Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

*Recipient* – A non-Federal entity receiving a Federal financial assistance award directly from EDA to carry out an activity under an EDA program, including any EDA-approved successor to the entity.

*Specifications* – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

*Subcontractor* – An individual or entity having direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

*Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

## 2. **APPLICABILITY**

The Project to which the construction work covered by this Contract pertains is being assisted by the United States of America through federal assistance provided by the U.S. Department of Commerce - Economic Development Administration (EDA). Neither EDA, nor any of its departments, entities, or employees is a party to this Contract. The following EDA Contracting Provisions are included in this Contract and all subcontracts or related instruments pursuant to the provisions applicable to such federal assistance from EDA.

## 3. **FEDERALLY REQUIRED CONTRACT PROVISIONS**

(a) All contracts in excess of the simplified acquisition threshold - currently fixed at \$150,000 (*see* 41 U.S.C. §§ 134 and 1908) must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate.

(b) All contracts in excess of \$10,000 must address termination for cause and for convenience by the Recipient including the manner by which it will be effected and the basis for settlement.

(c) All construction contracts awarded in excess of \$10,000 by recipients of federal assistance and their contractors or subcontractors shall contain a provision requiring compliance with Executive Order 11246 of September 24, 1965, *Equal Employment Opportunity*, as amended by Executive Order 11375 of October 13, 1967, and Department of Labor implementing regulations at 41 C.F.R. part 60.

(d) All prime construction contracts in excess of \$2,000 awarded by Recipients must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3148) as supplemented by Department of Labor regulations at 29 C.F.R. part 5. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations at 29 C.F.R. part 3.

(e) All contracts awarded by the Recipient in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704 (the Contract Work Hours and Safety Standards Act) as supplemented by Department of Labor regulations at 29 C.F.R. part 5.

(f) All contracts must include EDA requirements and regulations that involve a requirement on the contractor or sub-contractor to report information to EDA, the Recipient or any other federal agency.



- (g) All contracts must include EDA requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.
- (h) All contracts must include EDA requirements and regulations pertaining to copyrights and rights in data.
- (i) All contracts and subgrants in excess of \$150,000 must contain a provision that requires compliance with all applicable standards, orders, or requirements issued under the Clean Air Act (42 U.S.C. § 7401 *et seq.*) and the Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. § 1251 *et seq.*), and Executive Order 11738, *Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act With Respect to Federal Contracts, Grants, or Loans*.
- (j) Contracts must contain mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).
- (k) Contracts must contain a provision ensuring that contracts are not to be made to parties on the government wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. part 180.
- (l) Contracts must contain a provision ensure compliance with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352) under which contractors that apply or bid for an award of \$100,000 or more must file the required certification. Each tier certifies to the tier above 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 any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier 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 non-Federal award.
- (m) If the Recipient is a state agency or agency of a political subdivision of a state, any contract awarded must contain a provision ensuring compliance with section 6002 of the Solid Waste Disposal Act (42 U.S.C. § 6962), as amended by the Resource Conservation and Recovery Act related to the procurement of recovered materials.

#### 4. **REQUIRED PROVISIONS DEEMED INSERTED**

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion of correction.

5. **INSPECTION BY EDA REPRESENTATIVES**

The authorized representatives and agents of EDA shall be permitted to inspect all work, materials, payrolls, personnel records, invoices of materials, and other relevant data and records.

6. **EXAMINATION AND RETENTION OF CONTRACTOR'S RECORDS**

(a) The Owner, EDA, or the Comptroller General of the United States, or any of their duly authorized representatives shall, generally until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders that do not exceed \$10,000.

(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the Owner, EDA, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

7. **CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES**

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the progress schedule. The Contractor also shall furnish the Owner (a) a detailed estimate giving a complete breakdown of the contract price and (b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only to determine the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

8. **CONTRACTOR'S TITLE TO MATERIAL**

No materials, supplies, or equipment for the work shall be purchased by the Contractor or by any subcontractor that is subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants and guarantees that he/she has good title to all work, materials, and equipment used by him/her in the Work, free and clear of all liens, claims, or encumbrances.

9. **INSPECTION AND TESTING OF MATERIALS**

All materials and equipment used in the completion of the Work shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. Materials of construction, particularly those upon which the strength and durability of any structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for intended uses.

10. **"OR EQUAL" CLAUSE**

Whenever a material, article, or piece of equipment is identified in the Contract Documents by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard. Any material, article, or equipment of other manufacturers and vendors that will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Architect/Engineer, of equal substance and function. However, such substitution material, article, or equipment shall not be purchased or installed by the Contractor without the Architect/Engineer's written approval.

11. **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 that 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 Architect/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 the Owner in the Contract Documents.

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

12. **CLAIMS FOR EXTRA COSTS**

No claims for extra work or cost shall be allowed unless the same was done in pursuance of a written order from the Architect/Engineer approved by the Owner.

### 13. **CONTRACTORS AND SUBCONTRACTORS INSURANCE**

(a) The Contractor shall not commence work under this Contract until the Contractor has obtained all insurance reasonably required by the Owner, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until the insurance required of the subcontractor has been so obtained and approved.

(b) Types of insurance normally required are:

- (1) Workmen's Compensation
- (2) Contractor's Public Liability and Property Damage
- (3) Contractor's Vehicle Liability
- (4) Subcontractors' Public Liability, Property Damage and Vehicle Liability
- (5) Builder's Risk (Fire and Extended Coverage)

(c) **Scope of Insurance and Special Hazards:** The insurance obtained, which is described above, shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims that may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him/her and also against any of the special hazards that may be encountered in the performance of this Contract.

(d) **Proof of Carriage of Insurance:** The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of applicable insurance policies.

### 14. **CONTRACT SECURITY BONDS**

(a) If the amount of this Contract exceeds \$150,000, the Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a payment bond in an amount equal to one hundred percent (100%) of the Contract price or in a penal sum not less than that prescribed by State, Territorial, or local law, as security for the payment of all persons performing labor on the Work under this Contract and furnishing materials in connection with this Contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law. Before final acceptance, each bond must be approved by EDA. If the amount of this Contract does not exceed \$150,000, the Owner shall specify the amount of the payment and performance bonds.

(b) All bonds shall be in the form prescribed by the Contract Documents except as otherwise provided in applicable laws or regulations, and shall be executed by such sureties as are named in the current list of *Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies* as published in Treasury Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's

authority to act. Surety companies executing the bonds must also be authorized to transact business in the state where the Work is located.

15. **LABOR STANDARDS - DAVIS-BACON AND RELATED ACTS**  
**(as required by section 602 of PWEDA)**

(a) **Minimum Wages**

(1) All laborers and mechanics employed or working upon the site of the Work in the construction or development of the Project will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act at 29 C.F.R. part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor, which is attached hereto and made a part hereof, regardless of any contractual relationship that may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 C.F.R. § 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 C.F.R. § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates determined under 29 C.F.R. § 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (i) Any class of laborers or mechanics to be employed under the Contract, but not listed in the wage determination, shall be classified in conformance with the wage determination. EDA shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

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

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

(C) The proposed wage rate, including any bona fide fringe benefits, bears a

reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and EDA or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by EDA or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and EDA or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), EDA or its designee shall refer the questions, including the views of all interested parties and the recommendation of EDA or its designee, to the Administrator for determination.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(2)(ii) or (iii) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

(b) **Withholding**

EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper employed or working on the site of the Work in the construction or development of the Project, all or part of the wages required by the Contract, EDA or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations

have ceased. EDA or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

(c) **Payrolls and basic records**

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

(2) (i) For each week in which Contract work is performed, the Contractor shall submit a copy of all payrolls to the Owner for transmission to EDA or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 C.F.R. part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose. It may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402; or downloaded from the U.S. Department of Labor's website at <https://www.dol.gov/whd/forms/wh347.pdf>. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors

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

(A) That the payroll for the payroll period contains the information required to be maintained under 29 C.F.R. § 5.5(a)(3)(i) and that such information is correct and complete;

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

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

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 15(c)(2)(ii) of this section.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of Title 18 and section 3729 of Title 31 of the U.S. Code.

(3) The Contractor or subcontractor shall make the records required under paragraph 15(c)(1) of this section available for inspection, copying, or transcription by authorized representatives of EDA or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, EDA or its designee may, after written notice to the Contractor or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 C.F.R. § 5.12.

(d) **Apprentices and Trainees.**

(1) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training (Bureau), or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any



apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a Project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) **Trainees.** Except as provided in 29 C.F.R. § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program that has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman's hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(3) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity

requirements of Executive Order 11246, *Equal Employment Opportunity*, as amended, and 29 C.F.R. part 30.

(e) **Compliance with Copeland Anti-Kickback Act Requirements.** The Contractor shall comply with the Copeland Anti-Kickback Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations (29 C.F.R. 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 the Contractor and any subcontractors shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which they are otherwise entitled. The Owner shall report all suspected or reported violations to EDA.

(f) **Subcontracts.** The Contractor and any subcontractors will insert in any subcontracts the clauses contained in 29 C.F.R. §§ 5.5(a)(1) through (10) and such other clauses as EDA or its designee may require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 C.F.R. § 5.5.

(g) **Contract termination; debarment.** The breach of the contract clauses in 29 C.F.R. § 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 C.F.R. § 5.12.

(h) **Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 C.F.R. parts 1, 3, and 5 are herein incorporated by reference in this contract.

(i) **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 C.F.R. parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and EDA or its designee, the U.S. Department of Labor, or the employees or their representatives.

(j) **Certification of Eligibility.**

(1) By entering into this Contract, the Contractor certifies that neither it nor any person or firm that has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

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

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

16. **LABOR STANDARDS - CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

As used in this paragraph, the terms “laborers” and “mechanics” include watchmen and guards.

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

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

(c) **Withholding for unpaid wages and liquidated damages.** EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) of this section.

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

17. **EQUAL EMPLOYMENT OPPORTUNITY**

(a) The Recipient hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 C.F.R. chapter 60, which is paid for in whole or in part with funds obtained from EDA, the following equal opportunity clause:

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

Economic Development Administration  
Contracting Provisions for Construction Projects

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by EDA and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of

this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph 17(a)(1) and the provisions of paragraphs 17(a)(1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as EDA or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by EDA or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(9) The Recipient further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally-assisted construction work. Provided, however, that if the Recipient so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government that does not participate in work on or under the Contract.

(10) The Recipient agrees that it will assist and cooperate actively with EDA and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish EDA and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist EDA in the discharge of the EDA's primary responsibility for securing compliance.

(11) The Recipient further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by EDA or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the Recipient agrees that if it fails or refuses to comply with these undertakings, EDA may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this EDA financial assistance; refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case

to the Department of Justice for appropriate legal proceedings.

(b) Exemptions to Above Equal Opportunity Clause (41 C.F.R. chapter 60):

(1) Contracts and subcontracts not exceeding \$10,000 (other than Government bills of lading, and other than contracts and subcontracts with depositories of Federal funds in any amount and with financial institutions which are issuing and paying agents for U.S. savings bonds and savings notes) are exempt. The amount of the Contract, rather than the amount of the federal financial assistance, shall govern in determining the applicability of this exemption.

(2) Except in the case of subcontractors for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.

(3) Contracts and subcontracts not exceeding \$10,000 for standard commercial supplies or raw materials are exempt.

18. **CONTRACTING WITH SMALL, MINORITY AND WOMEN'S BUSINESSES**

(a) If the Contractor intends to let any subcontracts for a portion of the work, the 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.

(b) Affirmative steps shall consist of:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;

(4) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises;

(5) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies;

(6) Requiring each party to a subcontract to take the affirmative steps of this section; and

(7) The Contractor is encouraged to procure goods and services from labor surplus area firms.

19. **HEALTH, SAFETY, AND ACCIDENT PREVENTION**

(a) In performing this contract, the Contractor shall:

- (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to their health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
- (2) Protect the lives, health, and safety of other persons;
- (3) Prevent damage to property, materials, supplies, and equipment; and
- (4) Avoid work interruptions.

(b) For these purposes, the Contractor shall:

- (1) Comply with regulations and standards issued by the Secretary of Labor at 29 C.F.R. part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701 – 3708); and
- (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this Contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 C.F.R. part 1904.

(d) The Owner shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the Work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as EDA, or the Secretary of Labor shall direct as a means of enforcing such provisions.

20. **CONFLICT OF INTEREST AND OTHER PROHIBITED INTERESTS**

(a) No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof.

(b) No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

(c) The Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the Contract Documents has a corporate or financial affiliation with the supplier or manufacturer.

(d) The 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, may be involved. Such a conflict may 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 the Contractor. The Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from the Contractor or subcontractors.

(e) If the Owner finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the Owner or EDA in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate this Contract. The Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which the Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

(f) In the event this Contract is terminated as provided in paragraph (e) of this section, the Owner may pursue the same remedies against the Contractor as it could pursue in the event of a breach of this Contract by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the Owner may pursue exemplary damages in an amount (as determined by the Owner) which shall not be less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such officer or employee.



## 21. **RESTRICTIONS ON LOBBYING**

(a) This Contract, or subcontract is subject to 31 U.S.C. § 1352, regarding lobbying restrictions. The section is explained in the common rule, 15 C.F.R. part 28 (55 FR 6736-6748, February 26, 1990). Each bidder under this Contract or subcontract is generally prohibited from using federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with this EDA Award.

(b) **Contract Clause Threshold:** This Contract Clause regarding lobbying must be included in each bid for a contract or subcontract exceeding \$100,000 of federal funds at any tier under the EDA Award.

(c) **Certification and Disclosure:** Each bidder of a contract or subcontract exceeding \$100,000 of federal funds at any tier under the federal Award must file Form CD-512, *Certification Regarding Lobbying – Lower Tier Covered Transactions*, and, if applicable, Standard Form-LLL, *Disclosure of Lobbying Activities*, regarding the use of any nonfederal funds for lobbying. Certifications shall be retained by the Contractor or subcontractor at the next higher tier. All disclosure forms, however, shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(d) **Continuing Disclosure Requirement:** Each Contractor or subcontractor that is subject to the Certification and Disclosure provision of this Contract Clause is required to file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person. Disclosure forms shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(e) **Indian Tribes, Tribal Organizations, or Other Indian Organizations:** Indian tribes, tribal organizations, or any other Indian organizations, including Alaskan Native organizations, are excluded from the above lobbying restrictions and reporting requirements, but only with respect to expenditures that are by such tribes or organizations for lobbying activities permitted by other federal law. An Indian tribe or organization that is seeking an exclusion from Certification and Disclosure requirements must provide EDA with the citation of the provision or provisions of federal law upon which it relies to conduct lobbying activities that would otherwise be subject to the prohibitions in and to the Certification and Disclosure requirements of 31 U.S.C. § 1352, preferably through an attorney's opinion. Note, also, that a non-Indian subrecipient, contractor, or subcontractor under an award to an Indian tribe, for example, is subject to the restrictions and reporting requirements.

## 22. **HISTORICAL AND ARCHAEOLOGICAL DATA PRESERVATION**

The Contractor agrees to facilitate the preservation and enhancement of structures and objects of historical, architectural or archaeological significance and when such items are found and/or unearthed during the course of project construction. Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the State Historic

Preservation Officer (SHPO) for recovery of the items. *See* the National Historic Preservation Act of 1966 (54 U.S.C. § 300101 *et seq.*, formerly at 16 U.S.C. § 470 *et seq.*) and Executive Order No. 11593 of May 31, 1971.

23. **CLEAN AIR AND WATER**

Applicable to Contracts in Excess of \$150,000

(a) **Definition.** “Facility” means any building, plant, installation, structure, mine, vessel, or other floating craft, location, or site of operations, owned, leased, or supervised by the Contractor or any subcontractor, used in the performance of the Contract or any subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the United States Environmental Protection Agency (EPA) determines that independent facilities are collocated in one geographical area.

(b) In compliance with regulations issued by the EPA, 2 C.F.R. part 1532, pursuant to the Clean Air Act, as amended (42 U.S.C. § 7401 *et seq.*); the Federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 *et seq.*); and Executive Order 11738, the Contractor agrees to:

(1) Not utilize any facility in the performance of this contract or any subcontract which is listed on the Excluded Parties List System, part of the System for Award Management (SAM), pursuant to 2 C.F.R. part 1532 for the duration of time that the facility remains on the list;

(2) Promptly notify the Owner if a facility the Contractor intends to use in the performance of this contract is on the Excluded Parties List System or the Contractor knows that it has been recommended to be placed on the List;

(3) Comply with all requirements of the Clean Air Act and the Federal Water Pollution Control Act, including the requirements of section 114 of the Clean Air Act and section 308 of the Federal Water Pollution Control Act, and all applicable clean air and clean water standards; and

(4) Include or cause to be included the provisions of this clause in every subcontract and take such action as EDA may direct as a means of enforcing such provisions.

24. **USE OF LEAD-BASED PAINTS ON RESIDENTIAL STRUCTURES**

(a) If the work under this Contract involves construction or rehabilitation of residential structures over \$5,000, the Contractor shall comply with the Lead-based Paint Poisoning Prevention Act (42 U.S.C. § 4831). The Contractor shall assure that paint or other surface coatings used in a residential property does not contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight or 5,000 parts per million (ppm) by weight. For purposes of this section, “residential property” means a dwelling unit, common areas, building exterior surfaces, and any surrounding land, including outbuildings, fences and play equipment affixed to the land, belonging to an owner and available for use by residents, but not

including land used for agricultural, commercial, industrial or other non-residential purposes, and not including paint on the pavement of parking lots, garages, or roadways.

- (b) As a condition to receiving assistance under PWEDA, recipients shall assure that the restriction against the use of lead-based paint is included in all contracts and subcontracts involving the use of federal funds.

25. **ENERGY EFFICIENCY**

The Contractor shall comply with all standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201) for the State in which the Work under the Contract is performed.

26. **ENVIRONMENTAL REQUIREMENTS**

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

- (1) **Wetlands.** When disposing of excess, spoil, or other construction materials on public or private property, the 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, the Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency (FEMA) Floodplain Maps, or other appropriate maps, i.e., alluvial soils on Natural Resource Conservation Service (NRCS) Soil Survey Maps.
- (3) **Endangered Species.** The 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 the Contractor, the Contractor will immediately report this evidence to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the U.S. Fish and Wildlife Service.

27. **DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSIONS**

As required by Executive Orders 12549 and 12689, *Debarment and Suspension*, 2 C.F.R. Part 180 and implemented by the Department of Commerce at 2 C.F.R. part 1326, for prospective participants in lower tier covered transactions (except subcontracts for goods or services under the \$25,000 small purchase threshold unless the subrecipient will have a critical influence on or substantive control over the award), the Contractor agrees that:

- (1) By entering into this Contract, the Contractor and subcontractors certify, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared Economic Development Administration Contracting Provisions for Construction Projects

ineligible, or voluntarily excluded from participation in this Contract by any federal department or agency.

(2) Where the Contractor or subcontractors are unable to certify to any of the statements in this certification, the Contractor or subcontractors shall attach an explanation to this bid.

*See also 2 C.F.R. part 180 and 2 C.F.R. § 200.342.*

28. **EDA PROJECT SIGN**

The Contractor shall supply, erect, and maintain in good condition a Project sign according to the specifications provided by EDA. To the extent practical, the sign should be a free standing sign. Project signs shall not be located on public highway rights-of-way. Location and height of signs will be coordinated with the local agency responsible for highway or street safety in the Project area, if any possibility exists for obstructing vehicular traffic line of sight. Whenever the EDA site sign specifications conflict with State law or local ordinances, the EDA Regional Director will permit such conflicting specifications to be modified so as to comply with State law or local ordinance.

29. **BUY AMERICA**

To the greatest extent practicable, contractors are encouraged to purchase American-made equipment and products with funding provided under EDA financial assistance awards.

# Technical Specifications



## **General Information**

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## **General Information**

### **Section 10**

#### **10.01. ABBREVIATIONS**

ADD	Addition	IDOA	Illinois Department of Agriculture
AI	Area Inlet	IDOT	Illinois Department of Transportation
ANSI	American National Standards Institute	IHPA	Illinois Historic Preservation Agency
ASA	American Standards Association	IN	Inches
ASTM	American Society for Testing and Materials	INF	Inflow
ATG	Adjust to Grade	INV	Invert
AVE	Avenue	IPS	Iron Pipe Size
AWWA	American Water Works Association	LA	Lane
BC	Back of Curb	LF	Lineal Foot
BM	Benchmark	MAX	Maximum
BK	Book	MH	Manhole
BLVD	Boulevard	MJ	Mechanical Joint
BLDG	Building	MIN	Minimum
BPS	Booster Pump Station	MIP	Male Iron Pipe
CB	County Highway Bore	N/F	Now and Former
CL	Centerline	NO	Number
CJ	Construction Joint	PG	Page
CONC	Concrete	PVMT	Pavement
CMP	Corrugated Metal Pipe	POC	Point of Commencement
CF	Cubic Foot	POB	Point of Beginning
CY	Cubic Yard	PC	Point of Curvature (Roads)
CI	Curb Inlet (Roads)	PC	Pressure Class (Water and Sewer)
CI	Cast Iron (Water and Sewer)	PE	Polyethylene
CIOD	Cast Iron Outside Diameter	PI	Point of Intersection
CTS	Copper Tube Size	PT	Point of Tangent
DR	Drive	PVC	Polyvinyl Chloride
DI	Ductile Iron	PE	Private Entrance (Roads)
ESMT	Easement	PE	Polyethylene Pipe
EJ	Expansion Joint	PL	Property Line
FT	Feet	PS	Pipe Stiffness
FES	Flared End Section	RR	Railroad
FB	Flat Bottom	RCP	Reinforced Concrete Pipe
FL	Flow Line	ROW	Right of Way
FIP	Female Iron Pipe	RPR	Resident Project Representative
GI	Grated Inlet	SAN	Sanitary
GST	Ground Storage Tank	SB	State Highway Bore
HDPE	High-Density Polyethylene Pipe	SDR	Standard Dimension Ratio

SF	Square Feet	TOC	Top of Curve
SY	Square Yard	TOA	Top of Asphalt
STA	Station	TBR	To Be Removed
SWPPP	Storm Water Pollution Prevention Plan	TBR&R	To Be Removed and Replaced
TB	Township Road Bore	TSM	Temporary Seed and Mulch
TBM	Temporary Bench Mark	UFR	Uni-Flange Restraint
TYP	Typical	VCP	Vitreous Clay Pipe

## **10.02. AWWA SPECIFICATIONS TITLES**

C-104-ANSI A21.4-Standard for Cement-Mortar Lining

C-105-ANSI A21.5-Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems

C-110-ANSI A21.10-Standard for Ductile-Iron and Gray-Iron Fittings

C-111-ANSI A21.11-Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

C-115-ANSI A21.15-Standard for Flanged Ductile Iron Pipe with Threaded Flanges

C-150-ANSI A21.50-Standard for Thickness Design for Ductile-Iron Pipe

C-151-ANSI A21.51-Standard for Ductile-Iron Pipe, Centrifugally Cast

C-153-ANSI A21.53-Standard for Ductile-Iron Compact Fittings for Water Service

C-502-Standard for Dry-Barrel Fire Hydrants

C-509-Standard for Resilient –Seated Gate Valves for Water Supply Service

C-515-Standard for Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service

C-550-Protective Epoxy Interior Coating for Valves and Hydrants

C-606-Standard for Grooved and Shouldered Joints

## **10.03. DEFINED INFORMATION**

OWNER – City of Greenville

Selected Granular Backfill – CA-7 or equal

Compacted Granular Backfill – CA-6 or equal and the granular materials shall be compacted by vibratory compactors of sufficient capacity to obtain a minimum of 90% of the maximum dry density at optimum moisture content as determined by Standard Test Methods for Laboratory.

Drawings – The construction drawings issued with these Specifications

Standard Drawings – Division VI Standard Drawings of the Standard Specifications for Water and Sewer Main Construction in Illinois

#### **10.04. REQUIRED SUBMITTALS**

On Submittals, please mark the product model number and the options and/or sizes you will be using. Also, please mark all standards required in the specifications. If the specifications are not marked up, preferably by highlighter, then they will be returned as rejected. Please provide a copy of all standards that a material references for our review and concurrence. The minimum number of submittals is 4, one for the CONTRACTOR and 3 to remain with the ENGINEER. The ENGINEER will not make copies of the submittals to return to the CONTRACTOR.

##### **10.04.01 Water Main**

Intentionally Blank

##### **10.04.02 Elevated Tank**

Intentionally Blank

##### **10.04.03 Booster Pump Station**

Intentionally Blank

##### **10.04.04 Ground Storage Tank**

Intentionally Blank

##### **10.04.05 Water Treatment Plant**

Intentionally Blank

##### **10.04.06 Pressure Reducing Station**

Intentionally Blank

##### **10.04.07 Forced Sewer Main**

SEWER MAIN AND APPURTENANCES			Manufacturer	Model No.	Equal Accepted	Section	Submittal Required
1		Anchor Coupling	---	---			No
2		Casing	---	---			YES
3		Casing Spacers				52.04.12	
	a	Sewer main 6-inch or smaller	CCI Pipeline Systems	---	YES		YES
	b	Sewer main larger than 6-inch	Cascade Waterworks Mfg. Co OR BWM Co.	---	YES		YES
4		Combination Air Release Valve					
	a	2"	Valmatic	802A	YES	52.04.08	YES

SEWER MAIN AND APPURTENANCES			Manufacturer	Model No.	Equal Accepted	Section	Submittal Required
5		Copper Tracer Wire				52.04.13	
	a	Bores	Copperhead Industries, Inc.	1245EHS	YES		YES
	b	Trenching	Copperhead Industries, Inc.	1430HS	YES		YES
	c	Connectors	Copperhead Industries, Inc.	3WB-01	YES		YES
6		End Seals	Method to be approved by OWNER and ENGINEER		YES		YES
7		Fittings				52.03 E	
	a	Ductile Iron - Compact Fittings	Tyler/Union		NO **		YES
	b	Ductile Iron - Flanged Fittings - Inside Vaults	Tyler/Union		NO **		YES
	c	RJ-PVC Expansion Coupling	JM Eagle or North American Pipe Corp.		YES		YES
	d	PVC Fittings			Not Allowed		NO
9		Gate Valves					
	a	3 inch to 12 inch	American Flow Control	2500-1	YES	52.04.04	YES
	b	14 inch and up	---	---	Not Used		NO
10		Plug Valves					
	a	3 inch to 12 inch	Valmatic	2800R	Yes	52.04.06	Yes
	b	14 inch to 36 inch	---	---	Not Used		NO
11		Check Valves					
	a	Ball Check Valve	Flygt	Type-5087	Not Used	52.04.07	NO
	b	Swing Check Valve	Valmatic	7800	YES	52.04.05	YES
12		Pipe					
	a	HDPE	---	---	Not Used		NO
	b	PVC	JM Eagle or North American Pipe Corp.	---		52.03	YES
	c	Restrained Joint PVC	JM Eagle or North American Pipe Corp.	---		52.03	YES
	d	PE			Not Used		NO
13		Pipe Restraining Glands				52.04.11	
	a	PVC	Ford 1500	---	YES		YES
14		Valve Box	Tyler	6850	YES	52.04.09	YES
15		Valve Box Marker	10' tall in fields		YES	52.04.10	YES
16		Special Requirements					
	a	Boring Plan				55	YES
	b	Seeding Mixture & Plan				32	YES
17		Meter Air Release Box		(Depth x ID)			
	a		ADS N-12® ST IB PIPE	36" x 30"	YES	52.04.14	YES
18		Meter Air Release Lid					
	a		18" Cast Iron Marked "Sewer"		YES	52.04.14	YES

SEWER MAIN AND APPURTENANCES			Manufacturer	Model No.	Equal Accepted	Section	Submittal Required
19		<b>Service Line Fittings</b>					
	a	Saddle/Tee					YES
	b	Corp					YES
	c	Curb Stop Box					YES
	d	Swing Check Valve					YES
	e	Tracer Wire Access Box					YES
	f	Ball Valve					YES

\* Respectively

\*\* no like, equivalent, or "or-equal" item or substitution permitted.

#### 10.04.08 Gravity Sewer Main

SEWER MAIN AND APPURTENANCES			Manufacturer	Model No.	Equal Accepted	Section	Submittal Required
1		<b>Anchor Coupling</b>	---	---	Not Used		
2		<b>Casing</b>	---	---			YES
3		<b>Casing Spacers</b>					
	a	Sewer main 6-inch or smaller	---		YES		YES
	b	Sewer main larger than 6-inch	Cascade Manufacturing	---	YES		YES
5		<b>Concrete</b>					
	a	Rebar	---	---		22	YES
	b	Manhole Mix Design	---	---		22	YES
6		<b>End Seals</b>	Method to be approved by OWNER and EN		YES		YES
7		<b>Pipe</b>					
	a	PVC	JM Eagle or North American Pipe Corp.	---	YES	52.03	YES
	b	Restrained Joint PVC	JM Eagle or North American Pipe Corp.	---	YES	52.03	YES
	c	Ductile Iron	---	---		52.03	YES
8		<b>Manhole</b>					
	a	Standard Cover	Neenah OR East Jordan	R-1772 OR 1022	NO **	52	YES
	b	A-Lok			YES		YES
	c	Structure			YES		YES
	d	Floor			YES		YES
	e	Walls			YES		YES
	f	Lid			YES		YES
	g	Link Seal					
	h	Grade Rings			YES		YES
	i	Cone			YES		YES
9		<b>Special Rerquirements</b>					
	a	Boring Plan				55	YES
	b	Seeding Mixture & Plan				32	YES
	c	Sod			Not Used		
	d	Manhole Sealing Plan				52	YES

\* Respectively

\*\* no like, equivalent, or "or-equal" item or substitution permitted.

#### 10.04.09 Grinder Pump Station

Intentionally Blank

#### 10.04.10 Lift Station

Lift Station and Appurtenances			Manufacturer	Model No.	Equal Accepted	Section	Submittal Required
1		Pumps and Motors	Flygt	NP3202 HT-3-469	YES	65.03	YES
2		Wetwell with Hatch	---	---		65.04	YES
3		Valve Vault with Hatch	---	---		65.04	YES
4		Meter Vault with Hatch	---	---		65.04	YES
5		Panel/Logic/Alarm System	---	---	YES	65.03	YES
6		Float Switches	---	---	YES	65.03	YES
7		Level Sensors	Mercoid	PBLTX	YES	65.03	YES
8		Flow Meter	Promag	10W	YES	65.07	YES
9		Odor Control	LMI	---	YES	65.08	YES

## **General Requirements**

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## **General Requirements**

### **Section 15**

#### **15.01. SCOPE OF WORK**

The work, as proposed, includes the furnishing of all labor, materials, equipment, transportation and performing of all operations required to construct the wastewater pumping and collection facilities (lift stations and force main) for the OWNER, all as shown on the Drawings and/or as herein specified. In case of conflict between the Drawings and these 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 their 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.

Construction activities by the CONTRACTOR shall not cause any wastewater discharge which would violate the requirements of the OWNER'S National Pollution Discharge Elimination System (NPDES) Permit. Accordingly, at least ten (10) days after execution of the Agreement and along with submission of his progress and shop drawing schedules, the CONTRACTOR shall submit a detailed outline of his proposed construction sequence. At a minimum the contractor shall submit his/her schedule as to how the LLCC pump station will be kept in operation during the construction of the new submersible LLCC wetwell and duplex pumping operation. Also, the plan should include a schedule showing the details of moving the electrical service and the installation of a portable submersible wastewater pump in the existing manhole just upstream of the existing drycan wastewater pumping station.

#### **15.02. CONTRACTOR RESPONSIBILITIES**

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 utilities, 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 their 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 their bid. If any major discrepancies occur between the Drawings and actual conditions, the CONTRACTOR shall notify the ENGINEER before submitting their 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 Contract Price.

The CONTRACTOR shall be responsible for all equipment and materials furnished under these Specifications and as required by the Drawings, and storage of same, within one (1) year from the date of substantial completion, in accordance with the General Conditions of this Contract. The CONTRACTOR shall replace at their 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 check analysis for any of the materials specified herein. 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. They shall guarantee all materials, workmanship, and completed installation to be first class in every particular and shall, at their own expense, furnish and replace any part or parts that may prove defective in material, equipment, or workmanship within one (1) year from the date of substantial completion, in accordance with the General Conditions of this Contract.

Although they may not be specifically shown on the Drawings or called for elsewhere in the Specifications, the CONTRACTOR shall include in their bid price the cost of all fittings, piping supports, equipment, safety devices, and miscellaneous appurtenances needed to provide a secure, workable sanitary sewer system.

### **15.03. REGULATORY AGENCIES AND PERMITS**

#### **A. IEPA – CONSTRUCTION PERMIT**

This work shall be governed by an IEPA permit for construction. This permit will be obtained for the CONTRACTOR by the OWNER before any construction operations begin.

#### **B. IEPA – NPDES PERMIT**

An NPDES Permit for Construction Site Activities will not be necessary for this project because the total area disturbed is estimated to be less than one acre. However, the OWNER, OWNER's representative, and ENGINEER will require that the erosion protection practices for this work be handled as if there was an NPDES Permit. The CONTRACTOR will be responsible for implementation and maintenance of all erosion control measures necessary to comply with the intent of the NPDES permit process. The CONTRACTOR shall take care during construction to minimize the risk of soil erosion on the construction site. Earthwork operations shall be planned so that the exposure of bare soil is minimized, both as to extent and duration. If, in the judgement 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 intent of the NPDES permit process, at no additional cost to the OWNER. The Erosion control measures shall generally adhere to Section 32.23. Payment for the erosion control measures implemented will be at the CONTRACTOR'S unit bid prices as discussed in Section 32.23. However, 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.

C. IHPA

Based on the Phase I archaeological investigation reports for this project, no sites along the proposed sewer main route have been recommended for monitoring during construction. However, should any unknown significant finds be encountered during construction, it shall be the OWNER/ ENGINEER's responsibility to contact the archaeological consultant upon notification from the CONTRACTOR, where appropriate, to provide the required monitoring, and to pay for such services. In addition, the CONTRACTOR shall include in their bid all costs associated with time delays, remobilization, etc., due to potential work stoppages associated with site avoidances or further archaeological site investigations. No additional costs will be allowed for remobilization or delays on the sewer main construction due to archaeological issues.

D. EASEMENTS

The OWNER will obtain the necessary easements. The CONTRACTOR shall familiarize themselves with all requirements of the easements.

E. ROAD PERMITS

The OWNER will obtain the IDOT Highway Permit. It shall be the CONTRACTOR's responsibility to contact the city street commissioner, local township roadway commissioners, county highway engineer, and State Highway personnel to coordinate the installation of sewer mains, sewer main boring operations, etc., on public right-of-way under their jurisdiction. It shall be the CONTRACTOR's responsibility to be aware of specific roadway permits for other site-specific conditions. The CONTRACTOR shall include in their bid all costs associated with special roadway repair requirements, traffic flow requirements, construction scheduling requirements, flagmen/road signage, etc.

F. FEDERAL, STATE, AND LOCAL REGULATIONS

The CONTRACTOR is responsible for conforming to 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.

**15.04. COORDINATION WITH RESIDENT PROJECT REPRESENTATIVE**

The CONTRACTOR shall notify the Resident Project Representative or ENGINEER of the proposed work schedule prior to each day. Any work accomplished without the Resident Project Representative being present due to improper notification, shall be re-done, re-exposed, etc., to the satisfaction of the Resident Project Representative, and shall be incidental to the Contract Price.

#### **15.05. STANDARD SPECIFICATIONS**

The Standard 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 Specifications, the more stringent specification will be followed.

All sanitary sewer and sewer laterals shall be constructed in accordance with the Standard Specifications.

Sanitary sewer and water main separation shall be in accordance with Section 41-2.01 of the Standard Specifications.

All work performed shall be in accordance with the Standards of the State of Illinois Plumbing Code and all local codes.

#### **15.06. EQUIPMENT AND PRODUCTS**

Whenever equipment is identified on the Drawings or in the Specifications by reference to manufacturer's name and/or trade names, it is intended merely to establish a standard, and any equipment of other manufacturers which will perform adequately the services imposed by the general design will be considered equally acceptable provided in the opinion of the ENGINEER, the function, material, and service is equal.

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 to the Specifications.

For the purposes of standardization all of the equipment for a single item or 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.

#### **15.07. SHOP DRAWINGS AND OPERATION AND MAINTENANCE MANUALS**

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 CONTRACTOR shall review and approve/stamp all shop drawings for construction. Shop drawings submittals will not be accepted without these reviews. The CONTRACTOR has ultimate responsibility for all shop drawing review and approval, including sub-contractor submittals.

The CONTRACTOR must supply Operations and Maintenance manuals for all equipment.

#### **15.08. PAYMENT FOR WATER USED**

Payment for water used by the CONTRACTOR for boring operations, pressure tests, etc. shall be billed to the CONTRACTOR by the OWNER at \$9.00 per thousand gallons used. Unless the amount used for these items is metered, the OWNER will assume the quantity used to be 10 times the entire pipeline volume. Losses of water due to main 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.

#### **15.09. MANUFACTURER'S REPRESENTATIVES**

The CONTRACTOR should 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. 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.

#### **15.10. SOIL BORING DATA**

Intentionally Blank

#### **15.11. CONTRACTOR REPRESENTATION AT MONTHLY BOARD MEETINGS**

The CONTRACTOR shall have a representative present only upon request at the monthly meetings of the City of Litchfield to answer questions presented by the Council during construction, and continuing through the completion of all final cleanup operations. Costs for attendance at meetings shall be incidental to the Contract Price.

#### **15.12. OWNER'S STOP-WORK AUTHORITY**

The OWNER shall have the authority to halt any work that is not being performed in accordance with the Drawings and Specifications for this project. In this event, the CONTRACTOR shall immediately stop work on the particular item until which time the Resident Project Representative or ENGINEER shall review the discrepancy, and all parties

shall agree as to the proper construction method. No additional compensation shall be allowed for down time during a stop-work period initiated by the OWNER. In addition, if the CONTRACTOR fails to halt construction, they shall re-do the work properly at no additional cost to the OWNER.

### **15.13. COORDINATION WITH LOCAL ELECTRICAL AND COMMUNICATIONS UTILITIES**

It shall be the CONTRACTOR's responsibility to contact all utilities (electrical, telecommunication, gas, etc.) to coordinate with the utility for needed services and equipment as shown on the plans and indicated in these Specifications. All work performed shall be in accordance with the standards of the National Electric Code, National Electric Safety Code and local codes.

Before ordering material and equipment, the CONTRACTOR shall determine from the local utility, which is intended to provide service for the herein described improvement, to determine that the service is available and will be supplied. Should any changes be required, the CONTRACTOR shall immediately notify the ENGINEER.

The CONTRACTOR shall be responsible for all necessary temporary service(s), and removal of same.

The CONTRACTOR shall further determine what service and material is being provided by the local utility and shall include as part of their proposal the equipment to be furnished, in place, all that is necessary to make a complete electrical service from the utility, for the improvement.

The CONTRACTOR shall determine what payment if any the utility will require for providing the service requested. The CONTRACTOR shall pay all such charges by the utility, including but not limited to a installation charges and monthly usage bills up to the time that the system(s) are accepted by and can be fully utilized by the OWNER. The CONTRACTOR SHALL include all such charges in the bid.

The CONTRACTOR will not be entitled to any extra for payment of the charges by the utility.

# **MISCELLANEOUS**

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## **MISCELLANEOUS**

### **Section 16**

#### **16.01. SCOPE OF WORK**

The CONTRACTOR shall furnish all equipment, machinery, material, skilled labor, and tools for the complete installation of the following items of work.

#### **16.02. NONSHRINK GROUT**

This item includes furnishing, placing and finishing non-shrink grout around proposed openings for pipes in existing concrete walls and in other places as shown on the Drawings.

Non-shrink grout shall be as manufactured by Master Builders, Cleveland, Ohio 44180; the Euclid Chemical Co., Cleveland, Ohio 44110; or equal. The grout shall not shrink upon drying, shall develop high strength, have a flowable consistency, be non-staining, shall contain natural aggregate, and be similar in finished appearance to other concrete.

The non-shrink grout shall be mixed, placed and cured strictly in accordance with the manufacturer's instructions. Particular care shall be taken to follow directions regarding the amount of mixing water added, and the minimum and maximum temperatures of the pipe and wall to be grouted.

The use of non-shrink grout shall be incidental to the Contract Price.

#### **16.03. GALVANIZING**

Hinges, lag screws, staples and other hardware, shown as "galvanized" on the Drawings, shall be hot-dipped galvanized. No cutting, bending or welding shall be permitted on the galvanized items after galvanizing is complete.



# **CONCRETE**

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## **Concrete**

### **Section 22**

#### **22.01. 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.

#### **22.02. CONCRETE AGGREGATES**

Concrete aggregates shall conform to Specifications for Concrete Aggregates, ASTM C33, except that aggregates failing to meet the specifications, but which have been shown by special test or actual service to produce concrete of the required quality, may be used under Paragraph 22.08 of this section where authorized by the ENGINEER.

#### **22.03. WATER**

Water used in mixing concrete shall be clean and free from deleterious amounts of acids, alkalis, or organic materials.

#### **22.04. REINFORCEMENT (METAL)**

Reinforcing bars shall conform to the requirements of Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement, ASTM-A-615/615M, or Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement, ASTM A996/A996M.

Welded wire fabric or cold-drawn wire for concrete reinforcement shall conform to the requirements of Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete, ASTM A1064/A1064M.

#### **22.05. 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.

#### **22.06. 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 strengths 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.

## **22.07. 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

<u>Water Content in U.S. Gals per Sack of Cement</u>	<u>Assumed Compressive Strength at 28-day psi</u>
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 Practice for Making and Curing Concrete Test Specimens in the Laboratory, ASTM C192/C192M, and with Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens, ASTM C39/C39M.

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 of values including all the compressive strengths called for on the Drawings. The curve shall be established by at least three (3) points, each point representing average values from at least four (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.

## **22.08. 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 weight rather than volume. Measurements of materials for ready-mixed concrete shall conform to the Standard Specification for Ready-Mixed Concrete, ASTM C94/C94M.

## **22.09. 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 Practice for Making and Curing Concrete Test Specimens in the Field, ASTM C31/C31M.

Not less than three (3) specimens shall be made for each test, or less than one (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 Test Method for Compressive Strength of Cylindrical Concrete Specimens, ASTM C39/C39M. 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 Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concretes, ASTM C42/C42M or order load tests to be made on the portions of structure so affected.

#### **22.10. PREPARATION OF EQUIPMENT AND PLACE OF DEPOSIT**

Before placing concrete, all equipment for mixing and transporting the concrete shall be cleaned and 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; 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.

#### **22.11. 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 one (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 the Standard Specification for Ready-Mixed Concrete, ASTM C94/C94M.

#### **22.12. 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.

#### **22.13. 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 be deposited on the work. Concrete shall not be 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 22.22, 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.

#### **22.14. CURING**

Provisions shall be made for maintaining concrete in a moist condition for at least five (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 seven (7) days after the foundation pour is completed **and** the seven (7) day cylinder test results have been reported to the ENGINEER.

#### **22.15. 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 three (3) days or 50 degrees F for five (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 three (3) days or 50 degrees F for five (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.

#### **22.16. 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.

Forms shall be properly braced or tied together so as to maintain position and shape.

#### **22.17. 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.

#### **22.18. 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 two (2) times the minimum thickness of the bar. Bends for other bars shall be made around a pin having a diameter not less than six (6) times the minimum thickness of the bar, except that for bars larger than one (1) inch, the pin shall be not less than eight (8) times the minimum thickness of the bar. All bars shall be bent cold.

#### **22.19. PLACING REINFORCEMENT**

Metal reinforcement shall be accurately placed in accordance with the Drawings and shall be adequately secured in position by concrete or metal chairs and spacers.

#### **22.20. 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.

#### **22.21. 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 three (3) inches.

- B. Where concrete is exposed to the weather, or exposed to the ground, but placed in forms, not less than two (2) inches for bars more than five-eighths (5/8) inch in diameter and one and one-half (1-1/2) inches for bars five-eighths (5/8) inch or less in diameter.
- C. In slabs and walls not exposed to the ground or to the weather, not less than three-quarter (3/4) inch.
- D. In beams, girders and columns not exposed to the ground or to the weather, not less than one and one-half (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.

#### **22.22. 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.

#### **22.23. CLEAN-UP OF FINAL SURFACES**

The surface of the concrete shall be free of spalls 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 surrounding concrete surface.

#### **22.24. DEFECTIVE CONCRETE**

If defects cannot be repaired to satisfaction of OWNER, the CONTRACTOR shall remove and replace concrete having defective surfaces. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.



# **SURFACE REPLACEMENT AND SITE WORK**

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## **SURFACE REPLACEMENT AND SITE WORK**

### **Section 32**

#### **32.01. SCOPE OF WORK**

The CONTRACTOR's attention is called to the fact that the sewer line construction will involve public Right-of-Way and private easements and that all improvements such as drainage ditches, plantings, culverts, active utilities, signs, outbuildings, field tiles, and any other miscellaneous, privately and/or publicly owned, property shall be restored to a condition equal to or better than their existing state of repair. Should it become necessary that the CONTRACTOR relocate/remove any obstruction encountered throughout construction he should consult with the ENGINEER's Resident Project Representative (RPR) before proceeding.

Surface restoration shall be as specified in Section 32.21 of these 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 in Section 32.22 of these Specifications. A rubber-tired skid steer 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.

Erosion control measures, as specified in Section 32.2, will be incidental to the Total Contract Price.

The CONTRACTOR shall be responsible for obtaining all material storage locations and, swx where not stored on OWNER's property, for providing the OWNER with a signed copy of a lease agreement naming landowner as Owner and CONTRACTOR as Tenant, for any vandalism (graffiti, etc.), damage, or contamination (due to crop spraying or otherwise) that may occur and for cleanup at said sites; all incidental to the Contract Price.

At the completion of all final cleanup operations, the CONTRACTOR shall place an approved valve marker at every valve, and air release valve for ease of identification for the OWNER and system operator. This work shall be incidental to the Contract Price.

#### **32.02. EASEMENTS**

It is intended that the sanitary sewer main extension be constructed on private easements and/or within the public right-of-way. The OWNER has secured the necessary easements and these documents are on file with the OWNER. The CONTRACTOR (successful bidder) shall be furnished copies of these documents prior to construction.

Some property owners have restrictive clauses in their easement regarding trees and shrubbery, fences, private utilities, width of easement, forcing construction in road right-of-way, etc. The CONTRACTOR shall comply with these restrictive clauses. It is entirely the CONTRACTOR'S responsibility to be aware of all restrictions and easements, and no increase in the Contract Price shall be allowed for any construction methods, landowner notifications, etc., necessary to comply with the restrictions. The CONTRACTOR shall refer

to the individual easements for details regarding the restriction(s). The easements will be available for CONTRACTOR review at the Litchfield City Hall and at the pre-bid meeting.

When it is necessary that the CONTRACTOR proceed across/over property supporting a growing cash crop (example: corn, legumes, soybeans, and wheat), they should so advise the ENGINEER's RPR, whereby the RPR shall note/record and make an assessment of the affected area (crop damage). When the CONTRACTOR follows the above instructions relative to reporting areas of crop damage, and adheres to other instructions by the ENGINEER's RPR and also uses good judgment, it is, therefore, the intent that the OWNER shall reimburse the property owner/renter an equitable amount for damage done by the CONTRACTOR to growing cash crops. Should, in the judgment of the ENGINEER and OWNER, it be determined that the CONTRACTOR occupied an area greater than necessary for their particular operation relative to crop damage and other construction efforts, the CONTRACTOR shall be held liable for the cost applicable to the excess area/damage caused by them. The CONTRACTOR shall apply lime and fertilizer to disturbed crop areas in accordance with Section 21 of the Standard Specifications. The same procedure, as for growing cash crops, shall be adhered to by the CONTRACTOR when it comes to ornamental trees, shrubs, flowers, fences, waterways, lawns, gardens, etc., relative to the need to affect, relocate, construct nearby, or transplant such items during the CONTRACTOR's operations. The CONTRACTOR shall be responsible and liable for all damages and claims caused by their operations to shrubs, trees, flowers, lawns, fences, gardens, orchards, nursery stock, etc., unless directed by the ENGINEER with the exceptions of growing cash crops (i.e., legumes, corn, soybeans, wheat). No additional compensation will be allowed for the above beyond the contract unit prices for the specified items of work listed in the Bid Schedule.

Agriculture field terraces shall only be crossed by a method approved by the land owner, and will be paid for at the CONTRACTOR'S unit bid price for boring or trenching of the appropriate pipe class and diameter. In the event a terrace is "accidentally" cut, either with a hoe or trencher, the terrace must be reshaped, compacted, and protected from erosion within 72 hours after the terrace is cut. All work associated with a terrace that is "accidentally" cut shall be performed by the CONTRACTOR without any increase in the Contract Price.

### **32.03. PUBLIC RIGHT-OF-WAY**

All crossings required under existing state highways will be made by boring a casing for the sewer line.

All crossings under asphalt and Portland cement concrete will be made by boring unless called out on the Drawings or as directed by the ENGINEER and/or OWNER.

The CONTRACTOR shall familiarize themselves with and abide by all requirements as to traffic flow, flagmen, maintenance of trench, advance warning signs, etc., as required in the various county, township, and state permits. The CONTRACTOR shall execute and maintain in force, all bonds as required by IDOT, county, or township entities.

Should it become necessary to construct the sewer main on private property, the OWNER will obtain any necessary private easements.



#### **32.04. JULIE LOCATES**

It shall be the CONTRACTOR'S responsibility to locate any sewer main or service line installed as part of this project, prior to Substantial Completion. Any costs associated with these JULIE locates shall be included in the bid.

Before beginning work in an area, the CONTRACTOR shall contact JULIE at 800-892-0123 and any other non-JULIE member companies maintaining utilities, pipelines, 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.

#### **32.05. 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. Some 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 damaged existing utilities 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. The 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.

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, 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 removed to allow construction or damaged by it 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, they shall provide and maintain temporary service until repair is complete and full service is restored. Repair of and restoration of service for essential structures or utilities shall be prompt; in these cases, if repair is unnecessarily delayed or unsatisfactory in the judgment of the ENGINEER, the OWNER or ENGINEER may have the repairs made and may deduct the cost thereof from payments due the CONTRACTOR. All costs associated with structure 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 ENGINEER and shall be done by the CONTRACTOR without any increase in the Contract Price.

### **32.06. CLEAN 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 cleanup as the work proceeds. The premises, easements, and rights-of-way shall be kept free of accumulations of waste materials and earth, rubbish and other debris resulting from the work. The CONTRACTOR shall barricade and prevent access to all open trenches and holes by the end of each working day before leaving the site, especially along road right-of-way areas, livestock grazing areas, driveways and field entrances, and residential yard areas. 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.

If, in the judgment of the OWNER, the CONTRACTOR fails to keep the sites clean as described hereinabove, the OWNER may halt the construction and/or construction payments until the sites have been cleaned up to the satisfaction of the OWNER. The CONTRACTOR has three (3) working days from notification from the OWNER and/or ENGINEER that the site conditions are unsatisfactory and the situation needs remedied. If, after this period of time, the brush removal is still not satisfactory, the OWNER has the right to hire an outside agency to dispose of the brush in a timely manner, and these costs shall be withheld per the General Conditions.

Final clean-up, grading, and permanent seeding shall be performed in accordance with the dates specified in Section 32.22.B.

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. Pipe banding and other construction debris may not be left on top of or buried in the trench. The CONTRACTOR shall be liable for any damage caused to farms, yards, livestock, pets, equipment, etc., due to construction debris left in, on, or around the project. The CONTRACTOR will restore to their original conditions those portions of the site not designated for alteration by the Contract Documents.

Payment for cleanup will be incidental to the unit price of sanitary sewer main installation. The OWNER shall withhold a sum equal to eight (8) percent of the installed cost of all sewer

main, until all final cleanup/seeding work is satisfactory. This Cleanup retainage is in addition to the standard overall project retainage, and may be used by the OWNER to hire a local Contractor to complete any unsatisfactory cleanup/seeding work. Final Payment of the Cleanup retainage will only be approved when the OWNER is satisfied with final cleanup/seeding work.

### **32.07. CONSTRUCTION CLEARING**

Existing trees and shrubs within private easement and right-of-way shall be protected from damage, and when such trees or shrubs are in the way of construction, the ENGINEER may recommend the CONTRACTOR prune branches interfering with the work, or remove and dispose of 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.

All necessary work involved in the clearing of the sewer line routing, either in Public Right-of-Way or in private easements, of stumps, fences (not to be cut unless absolutely necessary and not restricted on the easement), 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 sewer main installed of the various diameters, materials, and class as specified.

Trees marked on the plans to be removed, shall be removed and disposed of off-site. All stumps, fences, brush, and other miscellaneous material removed during 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. Trees marked on the Drawings for removal shall be paid at the unit bid price for tree clearing.

### **32.08. MAILBOX RELOCATION**

The CONTRACTOR shall temporarily relocate mail boxes to the opposite side of the roadway as is necessary to accommodate the construction process. As soon as is practical the CONTRACTOR shall relocate the mail box to its original location. All temporary mail box locations and permanent mail box relocations shall be done in accordance with the guidelines of and with the pre-approval of the United States Postal Service. All costs associated with relocating mail boxes, including coordination with the USPS, temporary and final relocation, shall be paid at the unit price for "Mailbox Relocation".

### **32.09. TRAFFIC CONTROL**

When any section of road is closed to traffic, the CONTRACTOR shall provide, erect, and maintain barricades, red flags, signs and lights at each end of the closed section and at all intersecting roads, in accordance with the Illinois Manual of Uniform Traffic Control Devices.

If during the progress of the WORK it is necessary to provide access to private property along the road, the CONTRACTOR shall provide, erect, and maintain, within the closed portion of the road, such barricades, signs, flags, and lights as may be necessary to protect the WORK and to safeguard local traffic. Trenches shall be barricaded or fenced to safeguard the public.

The cost of furnishing and maintaining barricades, warning signs, red flags, and lights as required herein shall be incidental to the Contract Price and no extra compensation will be allowed.

### **32.10. SIGNAGE**

All traffic/street signs in conflict with construction methods shall be salvaged and re-erected. They shall be stored indoors at the contractor's shop or at a location provided by the OWNER. The signs shall then be re-erected to meet IDOT standards. All signs shall be re-erected to the original height and at the same location as found before construction began.

### **32.11. 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 sewer system, and shall not be started until permitted by the ENGINEER.

Materials that are to be salvaged shall be carefully inventoried, removed, and stockpiled on the site where designated by the OWNER. If the CONTRACTOR damages or destroys such material, they 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 they shall remove and dispose of the materials 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 2 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.

### **32.12. SITE IMPROVEMENT AND/OR REPLACEMENT**

#### **A. CULVERTS**

The CONTRACTOR shall furnish and install pipe culverts as shown on the Drawings, in accordance with the Illinois Standard Specifications for Road and Bridge Construction. All pipe culverts shall be corrugated steel culvert pipe of the gage required in the Illinois Standard Specifications for Road and Bridge Construction.

Metal end sections shall be furnished and installed where required in accordance with the Standard Specifications for Road and Bridge Construction or as required by the owner of the culvert.

Any existing pipe culverts damaged by the CONTRACTOR shall be repaired or replaced in accordance with the Standard Specifications for Road and Bridge Construction 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 one and one-half (1-1/2) inches to six (6) inches. The largest stones shall not exceed six (6) to eight (8) inches.

Riprap shall be placed uniformly and, unless otherwise shown on the Drawings, all void spaces shall be filled with smaller stones. Riprap shall, at a minimum, be placed where shown on the Drawings and as directed by the ENGINEER. Riprap 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.

Riprap shall be paid per square yard unit price for "Riprap Removal and Replacement".

#### **C. SOIL STABILIZATION FABRIC**

The CONTRACTOR shall furnish and install on the earth subgrade where shown on the Drawings or 2' beyond trench where existing area has fabric, a nylon-polypropylene non-woven fabric to stabilize the ground surface. The fabric shall be Mirafi 500X as manufactured by Celanese Fibers Marketing Company, New York, N.Y.; Typar, Style 3401 by DuPont Company Explosives Products, Wilmington, Delaware, or equal.

Prior to placing the fabric, the subgrade shall be cleared of sharp objects which might damage the fabric. The fabric shall be unrolled directly on top of the earth subgrade. If overlapping is required to cover the area, the overlap shall be at least three (3) feet. Should the fabric be damaged during any step of installation, the torn or punctured section shall be covered by another piece of fabric cut large enough to cover the damaged area and meet the three (3) foot overlap requirement. At curves, intersections or other areas where fabric is overlapped, care shall be taken to spread the base course aggregate in the same direction as the fabric overlap. Metal tracked machinery shall not come in direct contact with the fabric.

Payment for Soil Stabilization Fabric shall be incidental to the Contract Price.

#### D. DRIVEWAY

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#### E. FENCE

The CONTRACTOR shall carefully remove and replace any fences that interfere with the sewer main installation. The fence shall be replaced to a condition equal to or better than before construction commenced. If the land owner chooses not to have the CONTRACTOR replace a section of removed fence, the CONTRACTOR shall get the landowners requests in writing with their signature and give a copy to the ENGINEER.

### **32.13. SITE WORK VERTICAL ELEVATION CHANGES**

#### A. SITE EXCAVATION

##### 1. GENERAL

Excavation shall be done to the lines and slopes shown on the Drawings. Unstable or unsuitable materials shall be removed and replaced with approved material if, in the opinion of the ENGINEER, it would be a detriment to the excavation. The CONTRACTOR will be allowed a negotiated compensation for removal and replacement of unsuitable existing earth materials below natural topsoil. The quantity for this work shall be as determined by the ENGINEER; in determining the pay quantity for this work, natural topsoil shall be considered as 12 inches thick and no additional compensation will be allowed for removal of topsoil. Unstable or unsuitable material shall be disposed of by the CONTRACTOR.

##### 2. TOPSOIL EXCAVATION

The CONTRACTOR shall remove topsoil and soil with a high organic content from the area of immediate construction and shall stockpile it on the site for use in finish grading in accordance with Section 32.13.E.

### 3. BORROW EXCAVATION

Any soil in addition to that excavated at the site required to complete fill area shall be furnished by the CONTRACTOR at their expense. Borrow excavation shall not be placed in fills until the material is approved by the ENGINEER. See Section 32.13.B. Earth Fill.

### 4. WASTE

Any excess excavated material shall be removed from the site by the CONTRACTOR, or if permitted by the ENGINEER, wasted on the site. Areas of wasted soil shall be compacted in accordance with Section 32.13.B.4 and finish graded in accordance with Section 32.13.E.

## B. EARTH FILL

### 1. GENERAL

This work shall consist of the construction of fills by the placement and compaction of specified or suitable materials above the natural ground or other surface.

### 2. SUBGRADE PREPARATION

The area upon which a fill is to be placed shall be prepared by removing all topsoil containing roots, vegetation and other deleterious materials. The surfaces of each portion of the foundation, immediately prior to placing the earth fill, shall have all water removed from depressions and shall be properly moistened and sufficiently clean to obtain a suitable bond with the earth fill. When directed by the ENGINEER, the subgrade shall be benched where fill is to be placed on a slope.

No material shall be placed in any section of the earth fill until the foundation for that section has been dewatered and suitably prepared and has been approved by the ENGINEER. When the existing earth foundation materials are determined by the ENGINEER to be suitable, the area shall subsequently be disked or otherwise scarified to a depth of at least six (6) inches and recompacted in accordance with Section 32.13.B.4 so as to assure compaction, bonding with successive lifts, and insure against a potential plane of seepage. If the existing earth foundation materials are determined by the ENGINEER to be unsuitable, the CONTRACTOR shall remove these materials and replace them with approved material as directed by the ENGINEER. The CONTRACTOR will be allowed compensation for such "Removal and Replacement of Existing Unsuitable Soils" in accordance with Section 32.13.A.1. Excessive moisture content shall not in itself form the basis for classifying a material as "unsuitable"; suitability shall be judged on the physical and chemical makeup of the material, i.e., any material which contains excessive moisture but would otherwise be suitable shall not be eligible for additional compensation.

### 3. EARTH FILL MATERIALS

The material for fill construction shall consist of soil which is free of roots, vegetation, frozen material, material with high organic content, and other deleterious materials. Materials determined by the ENGINEER to be unsuitable for earth fill shall be disposed of in accordance with Section 32.13.A.4. The ENGINEER shall determine which materials are suitable for earth fill and shall have the authority to

designate where in the fill certain earth materials shall be placed even to the extent of locating the placement of individual loads.

#### 4. PLACING EARTH FILLS

To achieve uniform compaction, fill material should be deposited in horizontal lifts extending the entire width and length of the fill, as far as practical, having a thickness compatible with the equipment utilized. It is presumed the lift thickness shall not exceed 8" in loose condition unless demonstrated by the CONTRACTOR to the satisfaction of the ENGINEER that the stated compaction can be uniformly achieved with a greater thickness. Lifts shall be disked to thoroughly mix and blend the different soils or to obtain a uniform moisture content.

The moisture content of the soil, when placed, shall be within  $\pm 3\%$  of the optimum moisture content of the material, except as otherwise approved by the ENGINEER, and shall be compacted to a density no less than 90% of the maximum dry density at optimum moisture content as determined by Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort, ASTM D698. The density of the compacted fill shall be determined by the independent testing agency at regular intervals. "Regular intervals" is a variable and shall be as determined by the ENGINEER for each specific fill site, depending upon the site and method of the fill operation and the degree of difficulty expected in obtaining compaction. The services, testing, and reports of the independent testing agency shall be furnished by the CONTRACTOR to the ENGINEER incidental to the cost of the Contract.

If the natural water content of the fill material does not fall within the range previously described, the CONTRACTOR shall mix, dry or moisten as necessary to achieve the specified moisture content.

The CONTRACTOR shall maintain the fill in an approved manner until the final completion and acceptance of all the work under the Contract.

#### C. EARTH FILL EQUIPMENT

During all earth fill operation, the CONTRACTOR shall have at the site the following pieces of equipment:

- a. Disk Harrow of the tandem type.
- b. Sheep's Foot Roller having a minimum weight of 4,000 lbs per foot of roller length when fully loaded.
- c. Hand Tamper of either the pneumatic or mechanical variety. All earth fill equipment shall meet the approval of the ENGINEER.

#### D. HAND COMPACTION

Fill inaccessible to compaction equipment adjacent to pipes or structures shall be compacted by hand. The soil shall meet the requirements under Section 32.13.B.3 and shall have a moisture content, when thoroughly mixed, corresponding to that specified under Section 32.13.B.4.

The soil shall be deposited in lifts not to exceed four (4) inches loose measure and thoroughly compacted over the entire lift area with a pneumatic or mechanical tamping hammer. Special precautions shall be taken to achieve the compaction required without



damage to the pipe or structure. Tamping equipment shall be subject to approval by the ENGINEER.

#### E. FINISH GRADING

The CONTRACTOR shall grade all areas to the finish grade elevation shown on the Drawings, or as directed by the ENGINEER. If the existing surface has become hardened or crusted, it shall be disked or raked so it will blend with the topsoil.

The CONTRACTOR shall place a six (6) inch layer of topsoil on all areas to be seeded. The top three (3) inches of topsoil shall be worked to break it up into particles no larger than two (2) inches. The surface shall then be alternately raked and rolled until the soil is friable and the grades are smooth and continuous.

### **32.14. STRUCTURAL EXCAVATION AND BACKFILL**

#### A. STRUCTURAL EXCAVATION

All footings shall be founded on firm undisturbed soil, and a six (6) inch minimum thickness of structural granular backfill shall be placed under all concrete bottom slabs of structures. Excavations shall be carried deep enough to permit the minimum thickness of granular material to be placed or until firm undisturbed soils are encountered, whichever requires greatest depth. For requirements for granular material, see Section 10.

In no case shall any footings be founded above those elevations shown on the Drawings. If soft or unsuitable soil is encountered at elevations where footings are to be founded, the ENGINEER may direct the CONTRACTOR to remove the unstable materials and bring the excavation to grade with fill concrete or structural granular backfill (see Section 10). Additional compensation will be made to the CONTRACTOR for such removal and replacement work as described in Section 32.13.A.1.

Excavations carried below depths shown on the Drawings shall be brought to grade by the CONTRACTOR with fill concrete or structural granular backfill. No additional compensation will be allowed for excavations carried below depth shown on the Drawings unless such excavations are ENGINEER approved "Removal and Replacement of Existing Unsuitable Soils" which will be compensated for in accordance with Section 32.13.A.1.

The excavation will be large enough to allow for installation and removal of forms. Side forms will not be required for footings or edges of base slabs below grade, provided the soil is stable and square corners and straight and plumb sides are maintained until concrete is placed and approval of the ENGINEER is obtained. All other excavation shall allow for placement and removal of forms and inspection.

Special care shall be taken not to disturb the bottom of excavations where the soil is to provide bearing for slabs, footing, etc. If the presence of subsurface water or other conditions, which may decrease the bearing strength of the foundation material, prevail then soil adequate to protect the foundation material shall not be excavated until just

before reinforcing steel and concrete are to be placed. The bottom of all excavations shall be inspected and approved by the ENGINEER before the placement of any granular material, reinforcing steel, or concrete.

#### **B. STRUCTURAL BACKFILL**

No backfilling shall begin without the approval of the ENGINEER. Unless otherwise shown on the Drawings or specified herein, backfill shall be structural granular backfill except for structures on or in earthen dikes, then backfill shall be Class A compacted, select excavated earthen materials.

All form work, rubbish, bracing, and sheeting shall be removed from the excavation before any backfill is placed. The placement of backfill around structures or walls shall be done simultaneously on opposite sides in even lifts. No backfill shall be placed behind any wall until the entire main structure of which that wall is a part is complete and until all concrete in the main structure has reached its specified 28-day strength, unless approved otherwise in writing by the ENGINEER. Small flow channels and other such appurtenances will not be considered as being part of the main structure. Sloping sides of the excavation which would be liable to cause wedging action shall be stepped or serrated. Under no circumstances shall backfill be placed in water.

Around all structures where adjacent finished grade is to be exposed to the weather, backfill shall be carried to two (2) feet six (6) inches below finished grade. A two (2) foot layer of clayey soil approved by the ENGINEER shall be placed over the full area of the excavated space outside the structure, compacted, and pitched to drain water away from the structure. The area shall then be finish graded in accordance with Section 212 of the Illinois Standard Specifications for Road and Bridge Construction, unless amended herein.

Special care shall be taken in backfill adjacent to waterproofing or foundation walls to avoid damage to the waterproofing. Pipes and drains entering and leaving the structure shall be protected from settlement.

### **32.15. SEWER MAIN EXCAVATION**

#### **A. GRAVITY SEWER MAIN**

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 per the recommendation of a third-party soil consultant.

The OWNER shall be responsible to set line and grade reference stakes at each manhole. The CONTRACTOR shall be responsible for checking and following said reference stakes. It will be the CONTRACTOR's responsibility to coordinate the staking activities with the OWNER. The CONTRACTOR shall provide a minimum of one week (seven (7) days) notice to the ENGINEER prior to the start of construction to allow the ENGINEER to begin the sewer main staking operations. Once the staking has been

completed, it shall be the CONTRACTOR's responsibility to protect the stakes and the information contained at each station. If the CONTRACTOR requests that any part of the staking operation be redone for any reason, the restaking efforts will be performed at the CONTRACTOR's expense per Article 15 of the General Conditions.

The CONTRACTOR shall use a laser as a guide for construction. The CONTRACTOR shall check their grade as construction progresses to assure that their work is on line and grade. Any discrepancies from the Drawings shall be corrected by the CONTRACTOR. The CONTRACTOR shall record the measurements of actual sewer main invert elevations at manholes and between manholes at the end of every 4<sup>th</sup> pipe, providing the record information to the RPR daily.

The CONTRACTOR shall dig out around the bell of the sewer main to allow the entire length of the pipe to lay on a firm foundation.

#### B. FORCE MAIN

The trench shall be excavated so that the sewer main will have a minimum of 42 inches of cover, unless a road or easement permit requires a greater depth. The profile shall be generally followed to minimize the number of air release valves. The depth of utility lines is approximate. The CONTRACTOR shall adjust the force main depth as necessary to limit the number of air release valves. Depth of cover shall be taken every 100 feet, providing the record information to the RPR daily.

### **32.16. ROCK EXCAVATION**

Rock excavation includes removal and disposal of rock material encountered that cannot be removed by conventional methods. Rock material includes boulders ½ 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 these specifications and Section 20-5 of the Standard Water and Sewer Specifications, and paid for at the rate specified in the Bid Schedule. Shale, boulders (less than ½ 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 sewer 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 six (6) inches below the bottom of the pipe and at least three (3) inches below the bottom of the bell of a joint. For sewer 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 nine (9) inches below the bottom of the pipe and at least six (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 sewer 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 they 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 sewer 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 sewer 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 sewer 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 (5) 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 Cleanup/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 48 inches plus the I.D. of the sewer main for trench width, 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 underlying 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.

### **32.17.     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 excavation in a manner that will keep the excavation dry and foundation bearing areas undisturbed until the structure is complete and all backfill has been placed. No extra compensation for dewatering or drainage necessary to meet this specification will be allowed.

Sumps, if used, shall be located outside of load bearing areas and at such distance that the bearing surfaces will not be damaged. Water containing silt in suspension shall not be pumped into any sewer lines or discharged to state waters.

If well pointing or the installation of temporary drains are required to complete the work, they shall be provided by the CONTRACTOR.

### **32.18.     TRENCH PROTECTION**

Trench protection shall be in accordance with Section 20-4.03 of the Standard Specifications. Where construction is in close proximity to existing utilities and structures, proper excavation support systems shall be used to prevent any damage caused by excavation.

The CONTRACTOR shall furnish, install and remove all shoring, bracing, sheet piling, shielding, or other required work necessary to retain banks of excavation, prevent cave-in of adjacent ground, and support and prevent displacement of adjacent structures of piping. All trench protection shall be maintained in good condition and removed when no longer required. The CONTRACTOR shall make good any injury or damage resulting from failure of the shoring system or from not observing these requirements.

The CONTRACTOR is responsible for obtaining and the cost of a Illinois Licensed Professional Engineer to design trench protection per any State, Local, or per OSHA requirements. The price shall be included in the Contract Price.

### **32.19.     SEWER MAIN BACKFILL**

#### **A. GENERAL**

#### **1. RIGID PIPE (DUCTILE IRON, CAST, CONCRETE, VCP, STEEL)**

All Rigid Pipe shall be installed using Class B Bedding and Encasement per ASTM C12 summarized in below.

2. FLEXIBLE PIPE (HDPE, PVC, PE)

All Flexible Pipe shall be installed using Class II Bedding and Encasement per ASTM D2321 summarized in below.

B. TERMINOLOGY

1. FOUNDATION

As needed or required due to soft or unstable soils. The depth and backfill material shall be designed by a third-party soil consultant.

2. BEDDING

The depth shall be as shown on the plans. The material shall be based on backfill method used described below for rigid or flexible pipe.

3. HAUNCH ZONE

This zone begins at the bottom of the pipe to the springline of the pipe. The material shall be based on backfill method used described below for rigid or flexible pipe.

4. PIPE ZONE

This zone goes from the springline of the pipe to a height above the pipe as shown on the plans. The material shall be based on backfill method used described below for rigid or flexible pipe.

5. TRENCH ZONE

This zone begins at the top of the Pipe Zone and extends to the Surface Zone as shown on the plans. The material shall be based on type of existing surface and Section 32.20 below.

6. SURFACE ZONE

This zone begins at the top of the Trench Zone to finished grade. The depth as shown on the plans. The material shall be based on type of existing surface and Section 32.20 below.

7. SUITABLE INITIAL BACKFILL MATERIAL

Finely divided material free of debris; organic material; frozen material; and stones and clods larger than 3" in any dimension.

8. NOTE 1

Sufficient crushed stone or Select Granular Backfill shall be placed so that the bedding extends to a horizontal plane at the selected top of that layer of material.

C. BACKFILL CLASS A FOR RIGID PIPE

1. FOUNDATION

See 32.19.B.1

2. BEDDING AND HAUNCH ZONE

Shall be concrete with a thickness below the pipe a minimum of 4 inches, or diameter divided by 4, or as shown on the plans, whichever is greater. The width shall be a minimum of 4 inches on each side or diameter divided by 4 on each side, whichever is greater. It shall also include welded wire mesh near bottom of pipe.

3. PIPE ZONE

Select Granular Backfill and per Section 32.19.B.8.

D. BACKFILL CLASS B FOR RIGID PIPE

1. FOUNDATION

See 32.19.B.1

2. BEDDING AND HAUNCH ZONE

Shall be Select Granular Backfill and Note 1. with a thickness below the pipe a minimum of 4 inches or diameter divided by 8, or as shown on the Drawings, whichever is greater.

3. PIPE ZONE

The material shall be Suitable Initial Backfill Material and per Section 32.19.B.8.

E. BACKFILL CLASSES IA, IB, II, III FOR FLEXIBLE PIPE

1. FOUNDATION

See 32.19.B.1

2. BEDDING AND HAUNCH ZONE

Shall be Select Granular Backfill and Note 1. with a thickness below the pipe a minimum of 4 inches or diameter divided by 8, or as shown on the plans, whichever is greater.

3. PIPE ZONE

The material shall be Select Granular Backfill and per Section 32.19.B.8.

F. TRENCH ZONE ALL BACKFILL CLASSES FLEXIBLE AND RIGID PIPE

- a. Improved Surface – Select Granular Backfill.
- b. Unimproved Surface within two feet of improved surface - Select Granular Backfill.
- c. Unimproved Surface - Excavated material free of rocks or stones larger than 3” in any dimension, debris, frozen material, and organic material.

G. SURFACE ZONE ALL BACKFILL CLASSES FLEXIBLE AND RIGID PIPE

- a. Improved Surface – Select Granular Backfill and/or surface replacement per Section 1.

- b. Unimproved Surface within two feet of improved surface – Existing top soil free of rocks or stones larger than 3” in any dimension, debris, frozen material, and organic material.
- c. Unimproved Surface – Existing top soil free of rocks or stones larger than 3” in any dimension, debris, frozen material, and organic material.

#### H. PAYMENT

##### 1. FOUNDATION

Rock Material will be paid per cubic yard as measured in the field per the Bid Item “Sewer Main Foundation”.

##### 2. BEDDING, HAUNCH ZONE, AND PIPE ZONE

Incidental to the Contract Price including disposal of any excavated material.

##### 3. TRENCH ZONE

- a. Improved Surface – This backfill will be paid per cubic yard per contract unit price “Select Granular Backfill” as measured in the field, with maximum width per details in the Drawings and depth for Trench and Surface Zones and including disposal of any excavated material.
- b. Unimproved Surface within two feet of improved surface – This backfill will be paid per cubic yard per contract unit price “Select Granular Backfill” as measured in the field, with maximum width per details in the Drawings and depth for Trench and Surface Zones and including disposal of any excavated material.
- c. Unimproved Surface - Incidental to the Contract Price including disposal of any excavated material.

##### 4. SURFACE ZONE

- a. Improved Surface – Surfaces paid per Section 32.21 and including disposal of any excavated material.
- b. Unimproved Surface - Incidental to the Contract Price including disposal of any excavated material.

### **32.20. UNSUITABLE BACKFILL MATERIAL**

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.

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 five (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 per Article 15.01.E of the General Conditions of these Specifications.

Backfill furnished and work performed (including disposal operations) under these circumstances shall be paid for at the contract unit price per Cubic Yard for “Unsuitable Backfill Material”, as determined by measurement in the field with maximum trench width as specified on the Drawings and excluding the following areas, bedding, haunch zone and pipe zone.

### **32.21. SURFACE REPLACEMENT**

#### **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:

Five (5) feet deep and less, without protection -twelve (12) inches on each side of pipe

Five (5) feet deep and less, with protection -twenty-four (24) inches on each side of pipe

Greater than five (5) feet – twenty-four (24) inches on each side of pipe

#### **B. UNIMPROVED SURFACE**

##### **1. GENERAL**

Where sewer 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. 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.

##### **2. PAYMENT**

Payment backfill is incidental to the Contract Price.

#### **C. 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 31.21.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 a straight joint is sawed.

2. PAYMENT

Work under this section is incidental to the Contract Price.

D. TEMPORARY SURFACE HOT MIX ASPHALT PAVEMENT OR BITUMINOUS TREATED SURFACE

1. GENERAL

Wherever pipes are constructed under traveled roadways, driveways, sidewalks, or other traveled surfaces, a temporary surface shall be placed over the top of the excavation within one week. The temporary surface shall be 6-inches of "Cold Patch". 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 surface is completed as specified. The CONTRACTOR is required to inspect all temporary surfaces every Friday and after all rains. 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

Except as otherwise shown on the plans or directed by the ENGINEER, payment quantities for temporary surfaces shall be measured based off the actual or maximum width shown on the Drawings, whichever is less. Where the items are at a greater distance from the trench, any damage shall be replaced at the CONTRACTOR'S expense.

3. PAYMENT

Cost of furnishing, placing and maintaining and removing the rock surface as described will be paid for at the CONTRACT unit price per square yard for "Temporary HMA Surface".

E. 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 Surface Zone shall be filled with Compacted Rock Backfill. The top of the trench surface shall be smooth and meet the grade of the adjacent undisturbed surface. The CONTRACTOR is required to inspect and add Compacted Rock Backfill, as required, every Friday and after all rains. 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 the plan details) and 6-inches of depth of the trench for which rock surface is placed.

3. PAYMENT

Cost of furnishing, placing and maintaining and removing the rock surface as described will be paid for at the CONTRACT unit price per cubic yard for "Select Granular Backfill".

F. 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 specification 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.

This work shall be completed within two weeks of disturbance if HMA is available, otherwise see 32.21.D, unless OWNER agrees in writing with CONTRACTOR to wait till end of the project.

#### 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".

This work shall be completed within two weeks of disturbance if HMA is available, otherwise see 32.21.D, unless OWNER agrees in writing with CONTRACTOR to wait till end of the project.

#### 5. BRICK PAVEMENT SURFACE

Unless otherwise specified, when the existing pavement includes a brick surface, replacement shall consist of ten (10) inches Portland Cement Concrete pavement as previously described. When actual brick pavement is specified, it shall consist of the following:

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.

A three-fourth (3/4) inch sand cushion.

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. Public 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 "Sidewalk Removal and Replacement". No additional compensation will be allowed. Sidewalks shall be finished to match existing adjacent sidewalk surfaces, unless otherwise specified or directed by the ENGINEER.

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. This work shall be included in the contract bid price for "Curb and Gutter Removal and Replacement".

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 that're 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 31.21.F.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, driveways, and sidewalks will be measured for payment in square yards.

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; pavement; curb; and curb and gutter shall be measured based off the actual or maximum width shown on the Drawings, whichever is less. 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

Payment for "Removal and Replacement of Permanent Type Pavements and Driveways" will be made at the CONTRACT unit price per square yard for either "Bituminous Pavement Removal and Replacement" or "Portland Cement Concrete Removal and Replacement. Payment for removal and replacement of concrete or brick sidewalk will be made at the CONTRACT Unit price per square foot for "Sidewalk Removal and Replacement". Payment for removal and replacement of concrete curb or concrete curb and gutter will be made at the CONTRACT unit price per foot for "Curb and Gutter Removal and Replacement".

### **32.22. 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 EXCLUDING SOD

The work shall consist of furnishing all labor, equipment, and materials for seeding a permanent grass mixture on all road ditches, structure sites, permanent pasture, and all Crop Reduction Plan acreage within the work area limits which are disturbed during

completion of work. The surfaces of earthen embankments shall also be seeded when necessary. 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.

#### Fertilizer

The CONTRACTOR can choose to either:

- a. Take a minimum of one soil sample for every 1000 lineal feet of sanitary sewer main installed to be tested by the Soil and Water Conservation to determine the amount of fertilizer actually needed at the CONTRACTOR's expense.
- b. Add fertilizer in the amounts listed in the following paragraphs.

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:

- c. Name and address of manufacturer.
- d. Name brand or trademark.
- e. Number of net pounds of ready mixed materials in the package.
- f. Chemical composition of analysis.
- g. 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, rills, 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 four (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 three (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:

<u>Name</u>	<u>Lbs Per Acre</u>	<u>Percent Purity</u>	<u>Percent Germination</u>
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:

<u>Name</u>	<u>Lbs per acre</u>	<u>Percent Purity</u>	<u>Percent Germination</u>
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:

<u>Name</u>	<u>Lbs per acre</u>	<u>Percent Purity</u>	<u>Percent Germination</u>
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 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 NRCS office and receive approval of grass seed and fertilizer mixtures prior to placing any seed or fertilizer on any CRP land.

### C. TURFGRASS SOD

The work shall consist of furnishing all labor, equipment, and materials for sodding a permanent grass mixture on all yards within the work area limits which are disturbed during completion of work. Sodding shall be completed within 60 days of sewer main and service line installation. Failure to meet these guidelines will result in Liquidated Damages being assessed against the CONTRACTOR, at the established daily rate.

#### 1. FERTILIZER

The CONTRACTOR can choose to either:

- a. Take a minimum of one soil sample for every 1000 lineal feet of sanitary sewer main installed to be tested by the Soil and Water Conservation to determine the amount of fertilizer actually needed at the CONTRACTOR's expense.
- b. Add fertilizer in the amounts listed in the following paragraphs.

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:

- c. Name and address of manufacturer.
- d. Name brand or trademark.
- e. Number of net pounds of ready mixed materials in the package.
- f. Chemical composition of analysis.
- g. 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. SODBED PREPARATION

Add good quality topsoil (if needed) to achieve total topsoil depth of 4-6 inches, after firming. To the extent possible, practical, affordable, and available, incorporate humus (fully decomposed organic matter) into the topsoil. Many local companies offer nutrient-rich compost/topsoil blends.

Test the soil pH with a chemical soil test to determine if any pH correcting materials are required. Acidic soils (pH of 6 and below) can be improved with the addition of pelletized lime. Alkaline soils (pH of 7.5 and higher) can be improved with the addition of sulfur or gypsum.

Finish grade the entire site, maintaining the rough grading contours and slopes, with a tractor-mounted box blade or pulverizer for large areas or a heavy-duty rake for smaller areas. Final grade should be approximately 3/4 below driveways, sidewalks, etc.

Apply "starter fertilizer" that is high in phosphate ("P" or the middle number on a bag of fertilizer), at the recommended rate. Ideally, rake the fertilizer into the top 1-2 inches. Organic fertilizers make a good choice for this application.

If your soil is loose and fluffy, you may roll the area with a lawn roller one-third full of water to firm and settle the surface. Low spots revealed by this step should be filled to match the surrounding grade surface. If time permits, allow the area to settle further with rainfall or by applying irrigation.

All gullies, rills, and washes shall be filled to conform to the desired shape and the entire area to be sodded shall be reasonably smooth and shaped to drain water away to avoid ponding before actual seedbed preparation has begun. Stones larger than four (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 sodded shall be finely pulverized to a minimum depth of four (4) inches, either by tilling, 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 sodding, it shall be prepared again at no additional compensation.

The edge or transition between sod and existing grass shall be a straight edge cut with edger or sod cutter to a depth of  $\frac{1}{4}$  -  $\frac{1}{2}$  inch and all existing grass, and debris removed or tilled into the existing soil. The CONTRACTOR shall not lay sod over existing grass.

### 3. SOD

Sodding shall be done immediately after seedbed preparation. The sod shall be applied in straight lines with offset joints over the entire area.

The landowner may request a different species of grass for their property. The CONTRACTOR shall provide the other species at no additional increase in contract price.

### 4. SODDING

Install sod immediately upon delivery. Begin watering lawn within 30 minutes of installation. Turf is a living plant that requires ground contact and moisture to survive! In hot weather, begin watering while you are installing. Do not wait until the entire lawn is installed before turning on the water. Begin installing turf along the longest straight line, such as a driveway or sidewalk. Butt and push edges and ends against each other tightly, without stretching. Avoid gaps or overlaps. Stagger the joints in each row in a brick-like fashion, using a sharp knife to trim corners, etc. Avoid leaving small strips at outer edges as they are more susceptible to drying. On slopes, place the turf pieces lengthwise across the slope. To avoid causing indentations or air pockets, avoid walking or kneeling on the turf while it is being installed or immediately after watering. After installing the turf, roll the entire area to improve turf-to-soil contact and remove air pockets.

### 5. WATERING

Give the new lawn at least 1 inch of water within 1/2 hour of installation. Water daily, or more often, keeping turf moist until it is firmly rooted (about 2 weeks). Then less frequent, deeper waterings should begin. Weather conditions will dictate the amount and frequency of watering. Be certain that the new lawn has enough moisture to survive hot, dry, or windy periods. Water areas near buildings more often where reflected heat dries the turf. The CONTRACTOR shall maintain a daily sprinkling schedule of several hours until such time as the sod grass commences to grow. Sprinklers approved by the ENGINEER will be used. Dosing with open ended or nozzled hoses will not be permitted. The CONTRACTOR with a written signoff and signature from homeowner can have the landowner do the watering.

### 6. RESODDING AND MAINTENANCE

Sodding 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.

#### D. 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 for Road and Bridge Construction, the more stringent specification will be followed.

Ball rooted plants are designated BR, and balled and bur-lapped 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 Standard Specifications for Road and Bridge Construction, and shall contain six (6) percent Nitrogen, twelve (12) percent Phosphorous, and twelve (12) percent 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 Standard Specifications 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 one-half (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 Standard Specifications for Road and Bridge Construction.

##### 5. MAINTENANCE

Plant care shall be in accordance with the 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.

### **32.23. EROSION CONTROLS**

The CONTRACTOR shall install all erosion controls shown on the Drawings. 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 Drawings and as necessitated by field conditions and construction methods. Erosion control measures shall generally adhere to this specification section. All costs associated for the erosion control measures implemented shall be incidental to the Total Contract Price. Additionally, maintenance of the erosion control measures, as required, 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 pre-manufactured ditch checks, installation of 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. Any and all fees, additional inspection costs, and fines received by the OWNER regarding NPDES noncompliance for this project will be passed to the CONTRACTOR and is incidental to the 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 control shall be of the following types and payment will be as indicated:

##### **1. RIPRAP BERM**

Intentionally Blank

##### **2. DIRT BERMS (A SHALLOW DAM OF DIRT 18" H X 24" W X 15' L)**

Intentionally Blank

##### **3. MULCH, STRAW, OR SOME OTHER MATERIAL APPROVED BY THE ENGINEER**

Shall be spread on disturbed surface to provide protection for uncompacted earth, and shall be incidental to the Total Contract Price.

#### 4. PRE-MANUFACTURED DITCH CHECKS

GeoRidge shall be installed perpendicular to the trench or ditch as per the manufacturers recommendations, including the toed in erosion control blanket (erosion control blanket used here shall be incidental to the incidental to the Total Contract Price); straw wattles can be used in lieu of the pre-manufactured check dams (see Straw Wattles below). A sufficient number of check dams or wattles shall be supplied to serve as a sediment control for the entire width of the trench or ditch. Such ditch checks shall be incidental to the Total Contract Price regardless of the number of check dams/sections or straw wattles needed.

#### 5. SILT FENCE

Intentionally Blank

#### 6. STRAW WATTLES

Straw wattles (rolled erosion control products) shall be trenched in and staked per manufacturers recommendations. Where straw wattles are used as ditch checks they shall be spaced so the low point of the wattles is equal to the toe of the upstream wattle. The wattle shall extend up the side slope a minimum of 6" above the low point of the wattle. Straw wattles shall be incidental to the Total Contract Price.

#### 7. URETHANE FOAM GEOTEXTILES (TRIANGULAR SILT DIKE)

Where indicated on the plans a Triangular Silt Dike shall be installed (toed in and stapled) per manufactures recommendations. Where indicated on the plans or as needed a triangular silt dike shall be placed adjacent to the terminus of the disturbed portion of a ditch. This type of placement is intended to act as a sediment basin. The silt dike shall extend to the top of the side slopes or 6" above the lowest point of the dike. All necessary triangular silt dike shall be incidental to the Total Contract Price.

#### 8. TEMPORARY SEEDING

Temporary seeding of the trench lines may be used to control erosion provided the temporary seeding activity corresponds with effective seeding/germination time periods. Any temporary seeding shown on the Drawings or required due to site conditions, shall be incidental to the Total Contract Price

#### 9. INLET PROTECTION

Culverts and storm sewer inlets must have sediment control in place before disturbing land surfaces UPSTREAM. Inlet protection shall be either straw wattles or silt fence style as appropriate for sediment control for the specific field condition. All necessary inlet protections shall be incidental to the Total Contract Price.

### 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:

#### 1. RIPRAP

Shall be six (6) inches in depth (sized and placed as described in Section 32.05 B.), covering the entire slope. Where riprap is required, the riprap shall be incidental to the Total Contract Price.

2. EROSION CONTROL BLANKET

Shall be 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 riprap is not an option. Erosion blanket is to be North American Green SC 150 BN, or equal. Placement of erosion blanket shall be incidental to the Total Contract Price.

3. STRAW WATTLES

Straw Wattles shall be installed per manufacturers recommendation for trenching and staking in place. The wattles shall follow contours and be properly spaced. Where wattles are placed to contain sediment from runoff from slopes, hills, berms, or spoil piles, place the wattles along the contour of the slope, the base of the slope, or as shown on the Drawings and as necessary to prevent loss of sediment. Straw wattles shall be incidental to the Total Contract Price.

4. TEMPORARY SEEDING

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 or required due to slopes in pastures and timbers, the temporary seeding shall be incidental to the Total Contract Price.

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.

1. SILT FENCE

Shall be installed 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 incidental to the Total Contract Price.

2. STRAW WATTLES

Straw wattles (rolled erosion control products) shall be trenched in and staked per manufacturers recommendations. Straw Wattles when used as other than ditch checks shall be incidental to the Total Contract Price.

3. TEMPORARY SEDIMENT BASINS

Where indicated on the plans a triangular silt dike shall be installed (toed in and stapled) per manufactures recommendations. Where indicated on the plans or as needed a triangular silt dike shall be placed adjacent to the terminus of the disturbed portion of a ditch. This type of placement is intended to act as a sediment basin. The silt dike shall extend to the top of the side slopes or 6" above the lowest point of the

dike. Silt dikes used as a “sediment basin” shall be incidental to the Total Contract Price.

Additional erosion control practices may be used with prior approval from the ENGINEER and OWNER. Payment for additional erosion control practices shall be incidental to the Total Contract Price.



# **INSTALLATION OF SEWER MAIN AND APPURTENANCES**

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# **INSTALLATION OF SEWER MAIN AND APPURTENANCES**

## **Section 42**

### **42.01. 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 sewer mains by the trench method and for the installation of appurtenances as shown on the Drawings and/or herein specified.

Backfilling operations at fittings, valves, and connections to manholes or other structures 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 sewer main, control the bend of a pipe, or discarded in the trench.

### **42.02. 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, the more stringent specification will be followed. 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 material specifications to the material type of sewer main, fittings, and appurtenances to be utilized, refer to Section 52 "Sewer Main, Fittings, and Appurtenances" of these Specifications.

For installation criteria regarding the boring or boring and jacking of sewer mains and service lines, refer to Section 55 of these Specifications.

### **42.03. PIPE LAYING**

#### **A. General**

HDPE and/or PVC Water Quality pipe installed for use as force main shall be clearly labeled/marked as sanitary sewer force main, either by color or label installed every 4 feet on the force main.

Pipe laying, jointing, and testing for sewer pipe shall be as specified in Section 31 of the Standard Water and Sewer Specs except as herein supplemented or modified:

In addition to the requirements called for in Section 31-1.01 of the Standard Specifications, the following shall apply:

The locations of the sewers, conduits, and structures, as shown on the Drawings, have been selected to provide the least possible interference with, or the crossing of, existing utilities. The OWNER reserves the right to make minor variations in the location of these items during construction, to make any change or differing conditions discovered during construction, and no additional payment will be allowed the CONTRACTOR for such shifts in alignment.

Only competent persons at laying sewer main pipe shall be employed on this phase of the work, and complete suitable equipment necessary for the execution of same is required. Any incompetency observed by the OWNER must be removed at their request, and where improper equipment or lack of same appears to be impairing the quality or speed of the work, such adjustments in same shall be made to the OWNER's satisfaction.

The pipe, structures, fittings, and valves shall be placed in the trench with care. Under no circumstances shall pipe or other materials be dropped or dumped into the trench. The pipe shall not be dragged in a manner which would cause scratching on the surface of the pipe and will be considered cause for rejection. Pipe shall be installed in accordance with the manufacturer's recommendations, and with the Standard Water and Sewer Specs.

Polyethylene encasement shall be used to wrap the ductile iron pipe prior to installation. See Section 52.03.D. for specifications on the polyethylene encasement.

#### B. Bypass Pumping

The CONTRACTOR shall be responsible for design, installation, and maintenance of bypass pumping during sanitary sewer construction operations if required. Design, maintenance plan, and equipment shall be submitted for review and approval of ENGINEER.

#### C. Pipe Cleaning During Laying Operation

The pipe shall be kept clean during and after laying. At the termination of pipe laying, the open end of the pipeline shall be closed off by a suitable cover until laying operations are resumed. All dirt, debris and moisture shall be removed from the surfaces to be jointed.

If dirt or dust has been introduced into the length of pipe, a thorough cleaning of the pipe shall be done just before the joint of pipe is installed. At this time, a visual check shall be made by placing the pipe in an inclined position to assure that all foreign matter and dirt is removed from the inside of the pipe.

#### D. Inspection of Material During Construction

Any materials not meeting the specifications, or obviously faulty material, shall be rejected by the ENGINEER and removed from the job site by the CONTRACTOR. When ordered by the ENGINEER, joints may be cut from the pipeline for inspection. All ductile iron installation, **whether pipe or fittings**, shall be reviewed by the RPR before the trench is backfilled. Failure to allow for this observation shall result in the exposing of the pipe for review, and shall be incidental to the contract costs.

#### E. Fluid Tight Joints

Make sure the gasket is not twisted or turned to prevent proper sealing in the groove. Apply the lubricant to the gasket surface and to the spigot end of the pipe. The joint is made by

one quick easy motion making sure the guide mark has reached the end of the fitting. For RJ pipe, the CONTRACTOR should then insert the nylon spline through the spline hole in the assembled joint which engages with the spline groove in the pipe end.

F. Breaks in Pipe or Joints

All breaks in pipe and/or joints shall be repaired to the satisfaction of the ENGINEER and at the expense of the CONTRACTOR. The defective pipe or fittings shall be removed and replaced. Repair clamps will **not** be permitted on forced main.

G. Cutting Pipe

Cutting of RJ pipe shall **not** be allowed; only the installation of full length joints shall be allowed.

H. Bed and Cover

The CONTRACTOR shall follow Section 32 of these Specifications.

I. Measurement and Payment

Payment for all work described in this section shall be included in the CONTRACTOR's bid price for the respective sizes of lines, pressure class, depth, and material type, as shown in the Bid Schedule. Measurement in lineal feet shall be made along the centerline of the trench through all valves and fittings, starting and ending at the face of structures.

J. Service Connections

All service connections shall be made by means of tees, tapped couplings, service clamps and other fittings approved by the ENGINEER. The use of solvent weld plastic saddles will not be permitted.

#### **42.04. UTILITIES ENCOUNTERED**

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, they 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 15.02 of these specifications.)

The OWNER reserves the right to make minor variations in the location of these items during construction, to make any change or differing conditions discovered during construction, and no additional payment will be allowed to the CONTRACTOR for such shifts in alignment.

## **42.05. TESTING OF SEWER MAIN AND EQUIPMENT**

### **A. Gravity Pipe**

All sewers not passing any of the following referenced tests shall be considered unsatisfactory and shall be repaired by the CONTRACTOR at no additional compensation.

All tests and testing equipment, including a pressure gauge with maximum graduations of 0.5 psi and approved by the Resident Project Representative (RPR), shall be provided by the CONTRACTOR at no cost to the OWNER.

When pressure tests are to be conducted, the CONTRACTOR shall have the full test pressure applied to the sewer main segment, and verify that the sewer main segment is holding pressure, prior to notifying the RPR to observe the formal pressure test for the duration required. Pressure test observation requests after 3:30 P.M. will be performed the next working day.

RPR shall be present for all testing.

#### **1. Air/Leakage Test**

In reference to Section 31-1.12 of the Standard Water and Sewer Specifications, "Testing and Inspection for Acceptance of Sanitary Sewers," **all** (100%) of the wastewater sewers shall be tested for leakage using the pressure air testing method. The time required for a pressure drop from 3.5 to 2.5 PSIG shall not be less than the time specified in the 35 Illinois Administrative Code 370.APPENDIX C Table No. 3 - Air Test Table for Sanitary Sewer Leakage Testing. Air testing shall be incidental to the total Contract Price.

#### **2. Infiltration Test**

If approved by the ENGINEER, the infiltration test may be used if the water table is 18 inches or higher above the crown of the pipe and the exfiltration by water test may be used if the water table is less than 18 inches above the crown of the pipe.

#### **3. Video Taping**

In addition to the leakage test **all** sewers shall be subjected to Video Taping. The ENGINEER can request the lines to be videotaped at any time during construction. All lines will be televised by the end of the project. Each section of sanitary sewer line shall be cleaned of dirt and debris, then captured and removed at the next downstream manhole. The CONTRACTOR shall add water to the pipeline prior to the video inspection to help identify deficiencies. The recording shall be made using a color camera, self propelled or other, having sufficient light to show detail of problem areas and joints. The camera shall have a swivel head to look up each service connection. Camera speed shall not exceed three (3) feet per second. If problem areas or concerns are seen by the operator, then the camera shall be backed up, and an extended look at the area will be recorded. All recordings will have location (i.e. manhole # to manhole #), time, date, and footage displayed. A minimum of two (2) copies of the tapes and two (2) written inspection reports shall be furnished to the ENGINEER and OWNER. The Video Taping will be paid for on a unit price per installed footage basis.

#### 4. Lamping Test

Lamping tests may be required by the ENGINEER/OWNER at any time during construction and/or testing of the sanitary sewers. All sewers not passing the lamping tests shall be considered unsatisfactory and shall be repaired by the CONTRACTOR at no additional compensation.

#### 5. Mandrel/Deflection Test

Deflection testing shall be conducted in accordance with the Standard Water and Sewer Specifications, Section 31-1.12.

### B. Pressure Pipe

Pipe laying, jointing, and testing for pressure pipe shall be as specified in Division IV, Section 41 of the Standard Water and Sewer Specs, except as herein supplemented or modified. Where laying and jointing methods for an allowable type of pipe are not covered by the Standard Water and Sewer Specs, the pipe shall be installed in accordance with the manufacturer's recommendations and applicable standards of the AWWA, ASTM, ASA or ANSI.

1. Preliminary Pressure Testing: At the ENGINEER's option during the general construction period the following pressure testing procedure shall be followed:

After the PVC pipe is assembled trench side or in the trench, a test of not less than fifty percent (50%) above the system's anticipated working pressure shall be applied with either air or water. After two consecutive tests have been performed without any failure, the CONTRACTOR at their option and with the ENGINEER's approval may discontinue testing until the system is completed. A hydrostatic test shall then be run as outlined in 42.07.B.2, below.

If there is a change of laying conditions, technique or personnel after the testing has been discontinued, the CONTRACTOR should, and at the ENGINEER's request will, test additional sections to provide assurance that this change is satisfactory.

2. Pressure Testing: Hydrostatic and pressure testing shall conform with Section 41-2.14 of the Standard Water and Sewer Specs; the basic provisions of AWWA C600 and C605 shall apply. The leakage test is not an acceptable formal test for passing a pressurized sewer main, only the pressure test is allowable.

Prior to performance of the test all air shall be expelled from the pipeline to the satisfaction of the ENGINEER. 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 50 percent 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, and joints shall be carefully examined for defects. Leaking joints shall be remade and then retested.

### C. Manholes

Manholes shall be tested before the ring and cover and grade adjustment rings are installed, and before backfill and compaction is complete. Conduct test in conformance with ASTM C1244. Vacuum testing of manholes shall be incidental to the total Contract Price.

#### 1. Preparation for tests:

- a. All pipes entering the manhole shall be temporarily plugged beyond the boot seals, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manholes.
- b. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendation.

#### 2. Test Procedure:

- a. A vacuum of 10-inches mercury shall be drawn in the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off.
- b. The manhole shall pass if the time for the vacuum reading to drop from 10-inches mercury to 9-inches mercury meets or exceeds the values indicated in the following table:

	Diameter		
	4 ft	5 ft	6 ft
Depth (feet)*	Time (Seconds)		
8	20	26	33
10	25	33	41
12	30	39	49
14	35	46	57
16	40	52	67
18	45	59	73
20	50	65	81
22	55	72	89
24	59	78	97
26	64	85	105
28	69	91	113
30	74	98	121

\* Round actual depth of manhole to next depth up (i.e., 11 ft deep manhole, use depth of 10 feet)

If the manhole fails any test, the CONTRACTOR, at no additional costs, shall make all necessary repairs by an approved method and the manhole shall be retested until a satisfactory test is obtained. Written test results shall be provided to ENGINEER/OWNER.



#### **42.06. DRAINAGE DITCH / CREEK CROSSINGS**

Where sewer 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 48 inches 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 these specifications. 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 Drawings, the CONTRACTOR shall install the pipe according to Section 55 of these specifications. A minimum of 60 lineal feet of RJ PVC pipe with expansion couplings at both ends (see Section 52 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, mobilization, etc., shall be paid for each drainage ditch crossing requiring RJ PVC pipe.

Where a directional bore is specified on the Drawings, see section 55 of these Specifications.

#### **42.07. SEWERS NEAR WATER MAINS AND WATER SERVICE LINES**

Per 35 Illinois Administrative Code 370.350, there shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto, which would permit the passage of any sewage or polluted water into the potable supply.

No sewer shall be located closer than 10 feet from water works structures.

##### **A. Horizontal and Vertical Separation**

1. Sewer mains and connections shall be laid at least 10 feet horizontally from any existing or proposed water main or water service line.
2. Should local conditions exist which would prevent a lateral separation of 10 feet, sewer lines may be closer than 10 feet to a water main provided that the water main invert is at least 18 inches above the crown of the sewer line, and is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.
3. If it is impossible to obtain proper horizontal and vertical separation as described above, both the water main and sewer must be constructed with water main quality pipe and joints: slip-on or mechanical joint cast or ductile iron pipe, asbestos-cement pressure pipe, prestressed concrete pipe, or PVC pipe meeting the requirements of 35 Illinois

Administrative Code, 653.111. The pipes shall be pressure tested in accordance with "AWWA Standard for Installation of Ductile-Iron Water Mains and their Appurtenances," AWWA C600-93 (no later editions or amendments) for a working pressure equal to or greater than the maximum possible surcharge head to assure water tightness before backfilling.

#### B. Water-Sewer Line Crossings

1. Whenever possible, sewers crossing water mains shall be laid with the sewer below the water main with the crown of the sewer a minimum of 18 inches below the invert of the water main. The vertical separation shall be maintained on each side of the crossing until the perpendicular distance from the water main to the sewer is at least 10 feet. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Adequate support shall be provided for the water mains to prevent damage due to settling of the sewer trench.
2. Where a sewer crosses under a water main and it is not possible to provide an 18-inch vertical separation:
  - a. The sewer shall either be constructed with, or shall be encased in a carrier pipe with the ends sealed that is, water main quality pipe and joints: slip-on or mechanical joint cast or ductile iron pipe, asbestos-cement pressure pipe, prestressed concrete pipe, or PVC pipe meeting the requirements of 35 Illinois Administrative Code, 653.111. The pipes shall be pressure tested in accordance with "AWWA Standard for Installation of Ductile-Iron Water Mains and their Appurtenances," AWWA C600-93 (no later editions or amendments) for a working pressure equal to or greater than the maximum possible surcharge head to assure water tightness before backfilling. The water main quality sewer or carrier pipe shall extend on each side of the crossing to a point where the perpendicular distance from the water main to the sewer is at least 10 feet.
  - b. For the required length of the water main quality sewer or carrier pipe, omit the select granular cradle and granular backfill to one foot over the crown of the sewer and use selected excavated material (Class IV) and compact to 95% of Standard Proctor maximum density.
  - c. Point loads between the sewer or sewer casing and the water main are prohibited.  
Adequate support shall be provided for the water main to prevent damage due to settling of the sewer trench.
3. Where it is not possible for a proposed sewer to cross under an existing water main, the construction methods and materials described in 42.06.C.2 above shall be followed. Where a proposed sewer must cross over a proposed water main, an 18-inch vertical separation shall be maintained.

#### C. Sewer Manhole Separation From Water Main

No water pipe shall pass through or come into contact with any part of a sewer manhole.

#### **42.08. THRUST BLOCKS**

Thrust blocking is required on all pressure pipe. All bends of 11-1/4 degrees or greater, and all other fittings shall be thrust protected to prevent movement of the lines under pressure. Blocking shall be Portland Cement Concrete poured in accordance with Section 41.-2.10 of the Standard Water and Sewer Specs, 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.

#### **42.09. CONNECTION TO EXISTING LIFT STATION OR MANHOLE**

A portion of this work may require connection of the proposed sanitary sewer main to an existing lift station or manhole. The CONTRACTOR shall core drill the existing concrete lift station or manhole structure to accept the proposed sewer main. The core drill shall be of a sufficient size to allow for the use of a Calpico Pipe Lynx seal between the existing manhole and the sewer main. All fasteners/hardware shall be Type 314 stainless steel. The CONTRACTOR shall take care to accurately locate and drill the hole in the existing structure to ensure the proposed sewer main fits as intended. Any damage to the existing structure shall be repaired by the CONTRACTOR at no additional cost to the OWNER. Hammering, jack hammering, chiseling or other similar destructive methods shall not be allowed for making or altering the penetration.

#### **42.10. SERVICE LATERALS AND RISERS**

The service riser shall be constructed with a 6-inch wye, as shown on Standard Drawing No. 7 of the Standard Water and Sewer Specs, placed to receive the 6-inch service sewer. The riser pipe shall extend to the elevation as shown on the profile Drawings or as herein determined. The wye, or wye and riser combination shall be installed and bedded as shown on the Drawings.

The CONTRACTOR shall be responsible for connecting the existing residences to the proposed sewer main with a 6-inch PVC lateral after the sewer main has been installed, tested and is ready for service. The proposed 6-inch PVC lateral shall be extended from the 6-inch service wye and connected to the building lateral or existing septic tank inlet piping. The CONTRACTOR shall sever the existing septic tank inlet piping and reconnect the lateral from the building to the new 6-inch service lateral. The CONTRACTOR shall be responsible for

locating the existing service lateral or the septic tank inlet piping, and for closely checking its elevation and distance from the new sewer main in order to determine the necessary depths and slopes of the service riser. The service lateral shall be installed with a minimum 1% slope. The CONTRACTOR will be paid for the installation of the service lateral based on their unit bid price for “6 inch PVC Service Lateral”. The CONTRACTOR will be paid for the connection to the existing building lateral based on their bid price for “Connection to Existing Service Line”.

The CONTRACTOR is responsible for installing clean-outs at 100 foot intervals with one being within 50 feet of the sewer main. Clean-outs shall also be located at each bend in the service line. The CONTRACTOR will be paid for the installation of each clean-out based on their unit bid price for “Service Line Clean-out”.

Separately, the CONTRACTOR will be paid for making the connection of the 6-inch PVC service lateral to the existing building lateral or septic tank inlet piping. The CONTRACTOR shall include in their unit bid price all costs associated with locating the existing building lateral or septic tank inlet piping, and making the necessary transition from the existing lateral to the 6 inch PVC lateral.

The CONTRACTOR shall keep an accurate record of service locations as installed and turn this record over to the RPR at the job site.

Excavation, backfill, restoration of surface, and laying of service lateral piping shall be the same as for the main line wastewater sewers.

At any time after substantial completion and during construction of building sewers at current residences of the municipality, if any additional costs are incurred by the OWNER because wyes, risers and service laterals have been installed to elevations too high to serve basements, the CONTRACTOR or his surety shall reimburse the OWNER for said costs.

#### **42.11. SEPTIC TANK DECOMMISSIONING**

Once the residences service laterals have been transferred from the existing septic tanks to the new sanitary sewer main, the CONTRACTOR shall decommission the existing septic tanks by pumping the tanks empty, caving in the tops, filling the tanks with sand to six (6) inches below existing grade, placing dirt in the top six (6) inches and re-seeding the disturbed area. This work shall be paid for at the CONTRACTOR’s unit bid price for “Decommissioning Existing Septic Tanks”.

CONTRACTOR shall notify the County Health Department about each septic tank/system decommissioned.

#### **42.12. DRAIN TILE REPAIR**

The bid item for “Drain Tile Repair,” will be paid to the CONTRACTOR only when a tile or private drain line is not located or is improperly located, and the CONTRACTOR then damages and properly fixes the tile. If a tile is located to within 18 inches on either side of the mark (as for JULIE locates) and the CONTRACTOR damages the tile, then the

CONTRACTOR shall fix the tile and no payment will be allowed under this bid item. 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 bid price for "Field Drain Repair" shall include all necessary gravel backfill/support as shown on the Drawings and as defined in Illinois Department of Agriculture's (IDOA) requirements, included in these Specifications.

#### **42.13. OPEN-CUT PVC OR STEEL CASING**

Where called out on the plans, the sewer main shall be installed in PVC (See Section 52.03 and 52.04 for material requirements) or steel casing (see Section 55.04 for material requirements) of the size shown on the Drawings. The limits of the casing areas shall be staked by the ENGINEER. After the casing has been installed in the trench, the CONTRACTOR shall backfill portions of the trench with Select Granular Backfill as specified in Section 32.

The CONTRACTOR shall bid a lineal foot price for installing casing of the material and size specified on the Drawings. Earth backfill for Open-Cut PVC Casing Pipe or for the Open-Cut Steel Casing Pipe will be incidental to the unit price of the casing pipe installation and no additional compensation will be allowed. Measurement in lineal feet shall be made along the centerline of the casing as installed.

The sewer main installed through the casing pipe shall be restrained-joint pipe as specified in Section 52 of these specifications and sized as shown on the Drawings. End seals shall be used to seal the end of the casing. All restrained-joint pipe placed in casing pipe shall utilize casing spacers as specified in Section 52.04.08. Casing spacers shall be used for the full length of the casing. Payment for the restrained joint pipe through the casing shall be as specified in Section 55.13.B.



# **Piping and Appurtenances**

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## **Piping and Appurtenances**

### **Section 52**

#### **52.01. 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. They shall replace at their 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 check analysis for any of the materials specified herein.

Although they may not be specifically shown on the Drawings or called for elsewhere in the Technical Provisions, the CONTRACTOR shall include in their 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. Hanger shall be adjustable wrought clevis or adjustable wrought ring type.

#### **52.02. GENERAL INFORMATION**

##### **A. Piping Systems**

1. 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 non-mechanically induced pressure. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used.
  - a. 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.
  - b. Buried Gravity Pipe - The pipe shall be considered buried if placed below grade and fully supported by the earth. (Other types of pipe not covered in these technical provisions will be considered for use as buried gravity pipe; in general, these pipes are recently developed and are not presently covered by specifications from national testing organizations such as ANSI, ASTM, or ASA. Examples include spiral wound PVC pipe and spiral wound Polyethylene pipe. Use of such

pipng shall require the written approval of the ENGINEER prior to bidding; this approval will be based on his/her review of the pipe specifications. These specifications shall be submitted no later than 14 calendar days prior to the bid date, and they shall provide complete information on pipe raw materials, design and stiffness, marking, workmanship, fittings, joints, and installation.)

2. Pressure Pipe - The following items shall be considered "pressure pipe": force mains, pump intake lines, potable and non-potable water lines, air mains, where pressure rating is required due to proximity of gravity sewer to existing water main, and any other pipe which generally operates under mechanically induced pressure flow. Where a specific pipe material or pipe joint is shown on the Drawings, only that material or joint shall be used.
  - a. Exposed or Unsupported Pressure Pipe - Pressure pipe shall be considered exposed or 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 between supports.
  - b. Buried Pressure Pipe - Any pressure pipe placed below grade and fully supported by the earth shall be considered buried pressure pipe.

B. Standard Drawings

Unless otherwise shown on the Drawings, or called for in Technical Provisions, the Standard Drawings contained in Division VI of the Standard Specifications shall apply.

**52.03. PIPE MATERIAL, FITTINGS, AND JOINTS**

A. Polyvinyl Chloride Slip Joint Pipe

This section of the specifications covers rigid polyvinyl chloride pipe, hereinafter called PVC pipe.

The sewer main shall be PVC pipe with push-on gasketed joints, in accordance with Section 30 of the Standard Specifications.

ASTM Specification D1784 shall be conformed to in all respects.

1. PVC Slip Joint Pipe (4 to 16 inch)
  - a. Gravity and Drain Pipe: Minimum wall thickness shall be based on SDR 26. PVC sewer pipe shall conform to ASTM D3034. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477.
  - b. Pressure Pipe: SDR (Standard Dimension Ratio) - PR (Pressure Rated) PVC pipe shall be Type I, grade 1 or 2, with a hydrostatic design stress of 2000 psi for water at 73.4°F, designated as PVC 1120 or PVC 1220.

PVC pipe with SDR ratings of 13.5, 17, 21, and 26 are to be used or as indicated on the Drawings, and shall conform to the latest revision of ASTM Specification D2241. All joints shall conform to the latest revision of ASTM Specification D3139 and F 477. PVC pipe shall be push-on gasketed.

- c. For DR-PR (CIOD) PVC Pipe: DR (Dimension Ratio) - PR (Pressure Rated) PVC pipe shall be manufactured from unplasticized PVC compounds having a minimum cell classification of 12454, as defined in ASTM D 1784, providing a hydrostatic design stress of 4000 psi for water at 73.4°F in accordance with the requirements of ASTM D 2837. PVC pipe with DR ratings of 18 (PR 235), 21 (PR 200), and 25 (PR 165) are to be used as indicated on the bidding schedule and shall conform to the latest revision of AWWA Specification C900.
2. PVC Slip Joint Pipe (18 to 48 inch)

- a. Gravity and Drain Pipe: Minimum wall thickness shall be based on SDR 26. PVC sewer pipe and fittings shall conform to ASTM F 679. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477.
- b. Pressure Pipe: DR (Dimension Ratio) - PR (Pressure Rated) PVC pipe shall design with a hydrostatic design stress of 4000 psi for water at 73.4°F in accordance with the requirements of ASTM D2837 and AWWA C905. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477.

SDR (Standard Dimension Ratio) - PR (Pressure Rated) PVC pipe shall be Type I, grade 1 or 2, with a hydrostatic design stress of 2000 psi for water at 73.4°F, designated as PVC 1120 or PVC 1220. PVC pipe with SDR ratings of 21 (200 psi) and 26 (160 psi) are to be used or as indicated on the bidding schedule, and shall conform to the latest revision of ASTM Specification D2241.

For DR-PR (CIOD) PVC Pipe: DR (Dimension Ratio) - PR (Pressure Rated) PVC pipe shall be manufactured from unplasticized PVC compounds having a minimum cell classification of 12454, as defined in ASTM D 1784, providing a hydrostatic design stress of 4000 psi for water at 73.4°F in accordance with the requirements of ASTM D 2837. PVC pipe with DR ratings of 18 (PR 235), 21 (PR 200), and 25 (PR 165) are to be used as indicated on the bidding schedule and shall conform to the latest revision of AWWA Specification C900.

#### B. PVC Restrained Joint

This section of the specifications covers restrained-joint PVC pipe, hereinafter called RJ pipe.

The CONTRACTOR must use RJ pipe for drainage ditch crossings, road crossings, and creek crossings as well as directional bores (including sewer main inside of casing pipe), as shown on the Drawings.

The RJ pipe shall be furnished with twin gasket couplings, nylon splines, rubber rings, and lubricant. The rubber rings shall be shipped in place in the coupling. The RJ integral bell is also acceptable.

The transition from RJ pipe to slip PVC or ductile pipe shall be made by the use of a manufacturer supplied expansion coupling. This coupling shall be Restrained Joint PVC by IPS. Only the installation of full joints of RJ pipe with factory grooves shall be permitted.

The pipe shall be PVC, with a hydrostatic design stress of 4000 psi for water at 73.4 degrees F, designated as PVC 1120 or 1220, Class 12454B and made to iron pipe size

diameters. PVC sewer pipe joints shall be flexible elastomeric seals per ASTM 3212 and F 477. SDR and DR rating shall be as shown on the Drawings and as called for in these specifications.

As shown on the drawings and specified herein, 4 to 16-inch PVC pressure RJ pipe shall be:

1. Restrained Joint (PVC) Pipe, SDR 26, PR 160, for installation in directional boring and/or bore and jacked casing installations.
2. Restrained Joint (PVC) Pipe, SDR 21, PR 200, for installation in directional boring and/or bore and jacked casing installations.
3. Restrained Joint (PVC) Pipe, DR 18, PR 235, for installation in directional boring and/or bore and jacked casing installations.
4. Restrained Joint (PVC) Pipe, DR 21, PR 200, for installation in directional boring and/or bore and jacked casing installations.
5. Restrained Joint (PVC) Pipe, DR 25, PR 165, for installation in directional boring and/or bore and jacked casing installations.

#### C. Ductile Iron Pipe

Ductile iron pipe shall be as specified in Section 30-4.03 for gravity pipe and Section 40-2.01B for pressure pipe of the Standard Specifications.

All ductile iron pipe shall be manufactured in accordance with all requirements of AWWA Standard C151, class thickness designed per AWWA C150, cement lined with bituminous coating per AWWA C104. Flanged ductile iron pipe joints shall be designed per AWWA C110 or C153. Standard laying length is either 18 feet or 20 feet.

Polyethylene encasement shall be used on all ductile iron pipes and the polyethylene encasement shall conform to AWWA C105/A21.5. 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 (2) weeks (ie. Open trench) Type C (black) polyethylene material must be used.

Where/if the sewer main crosses an existing petroleum pipeline, restrained-joint ductile iron pipe with hydrocarbon resistant gaskets shall be used for a length as required to obtain at least 10 beyond each end of the PVC. The ductile iron pipe shall be installed within a PVC casing with the use of casing spacers and end-seals. The PVC casing shall extend a minimum of 25 feet (as measured perpendicularly to the petroleum pipeline) beyond each side of the Petroleum Pipeline easement limits.

All exposed or unsupported pipes shall be ductile iron with either flanged or grooved joints. Buried ductile iron pipe must have either mechanical or slip seal joints.

Pipe joints shall be manufactured in accordance with the following specifications:

1. Mechanical joint pipe shall be furnished with applicable gaskets, glands, and bolts. Bolts shall be stainless steel or corrosion resistant meeting the requirements of AWWA C111/A21.11 and ASTM A242. A manufacturer certification shall be

included with all shop drawing submittals as to the corrosion resistant material utilized. Joint shall be in accordance with AWWA Standard C110 and C111.

2. Slip-joint pipe shall be furnished with gaskets and lubricant, and be in accordance with AWWA Standard C111 and C600.
3. RJ pipe joint shall be furnished with gaskets, restraining ring, and lubricant, and be in accordance with AWWA Standard C153 and C111.
4. Ductile iron pipe inside of casing pipe shall use a joint restraint gasket at all joints. Joint restraint gaskets shall be Griffin Pipe Talon RJ Gasket, U.S. Pipe Field Lok 350 Gasket, or approved equal.

Ductile iron pipe utilizing joint restraint gaskets shall be pulled, NOT PUSHED, through the casing pipe. Assembly of joints using joint restraint gaskets must be controlled to prevent fully “homing” the spigot in the socket to allow for joint deflection.

5. Flanged ductile iron pipe joints shall be designed per AWWA C115 or C151.

#### D. Polyethylene Pipe

Pressure Pipe: SDR 9; Type III; Class C, Grade P33 or 34; thermal butt fused joint or grooved joint specifically adapted for PE pipe.

#### E. Fittings

All ductile iron fittings shall conform to AWWA C153, AWWA C 110, and AWWA C111, 2 inch to 48 inch, for 250 psi fluid pressure plus water hammer. All fittings except plugs and sleeves shall be cement lined to conform to AWWA C104 with a bituminous seal coat. Sleeves and plugs shall be bituminous seal coated. Application gaskets, standard transition gasket (SMJ gasket) for PVC, mechanical joint restraining glands, and bolts shall be furnished. All bolts shall be stainless steel or corrosion resistant meeting the requirements of ANSI/AWWA C111/A21.11 and ASTM A242.

1. Fittings include gate valves, tees, elbows, crosses, reducers, caps, plugs, and wyes.
2. All fittings associated with PVC or DI sewer force main installation shall be ductile iron. All ductile iron fittings shall mechanical-joint and utilize mechanical-joint restraining glands where anchor couplings are not required.
3. PVC fittings shall be used on gravity mains at service wyes and on service lines. The PVC fittings shall be Push-on gasketed PVC fittings and meet the requirements of ASTM D2729 .
4. Pressure rating of fittings shall be equal to or greater than the specified pipe.
5. Backfill operations at fitting and gate valve locations shall not occur until all materials and work have been viewed by the OWNER or resident project representative (RPR).
6. Any PVC slip-couplings utilized and allowed by the OWNER on pipe six (6) inches in diameter and smaller shall be 12 inches minimum length. Mechanical Joints shall be used and on all pipes greater than six (6) inches in diameter.

7. PVC Expansion Couplings shall be allowed when transitioning from PVC to RJ PVC Pipe. The expansion couplings shall be provided by the manufacturer and be RJ on one end and slip joint on the other. The fitting shall be of the same material as the pipe, and in no case shall have thinner walls than that of the pipe furnished. The fitting for gasketed joint, RJ PVC pipe shall be molded in one (1) piece.

Ductile Iron Expansion Couplings shall be a ductile iron sleeve with a restraint-joint fitting on one side and slip-joint fitting on the other side.

8. All fittings shall be of the same material and diameter as the pipe to which it is connected or of a compatible material approved by the ENGINEER.
9. Ductile Iron flanged fittings shall conform to all requirements of AWWA C115.
10. Grooved joint fittings for ductile iron pipe shall conform to all requirements of AWWA C606.

## **52.04. PIPE APPURTENANCES**

### **52.04.01. MANHOLES**

Manholes for gravity pipe shall be standard 4-foot diameter (unless otherwise noted on the plans) precast reinforced concrete and conform to the requirements of Section 32 of the Standard Specifications except as hereinafter supplemented or modified.

1. Manhole Material

Only precast reinforced concrete manholes will be allowed.

2. Manhole Steps

Polypropylene coated steel reinforcing rods are the required type of step.

3. Standard Frame and Grate

Unless otherwise called for on the Drawings, all manholes shall have a cast iron frame and lid equal to Neenah No. R-1772, East Jordan No. 1022, or equal, but frame and lid shall together weigh no less than 400 pounds. The lid shall be a self-sealing type with concealed pick hole and a machined groove on its underside for receiving an elastomeric, continuous gasket. The gasket shall act as a seal between the lid and frame to prevent entry of surface water. The frame and lids shall have machined bearing surfaces. The CONTRACTOR shall supply the OWNER with spare lid gaskets equal in number to 10% of the number installed, plus two (2) new and unused lid lifting tools especially designed for removing manhole lids with concealed pick holes. Manhole lids shall be marked "SANITARY".

4. Bolt Down Lid Frame and Grate

Wherever "Bolt Down Lid" is designated on the Drawings, the manhole shall have a cast iron frame and bolt down lid with gasket equal to Neenah No. R-1916-C, or equal; all bearing surfaces shall be machined; lid and frame shall weigh no less than 320 pounds.

Unless otherwise shown on the Drawings, manhole castings shall be set at finish earth grade or roadway surface; manholes in cultivated areas shall have castings set 24 inches below existing grade. Grade rings of various thickness may be required to adjust the lids to the final grading conditions and will be considered incidental to the cost of the manholes.

5. Rain Stopper/ Inflow Protection Cover

Manholes with top of rim elevations lower than surrounding ground elevation shall have an inflow protection cover, of the appropriate size, installed in addition to the standard lid. The inflow protector cover shall be manufactured by Syneco Systems, Inc., Chanhassen, MN or equal and shall consist of the following components:

- a. ABS plastic construction;
- b. Strap handle;
- c. Bottom seal surface with gasket;
- d. Gas relief valve to relieve at pressure of 1 psi;
- e. Leak down rate limited to 10 gal/24 hrs.

6. Manhole Joints

Manhole joints shall be sealed with bituminous material for water tightness.

7. Pipe Connections

All pipe connections at manholes and other structures shall be made with cast-in-place rubber gaskets cast into the wall of the Precast manhole and secured to the pipe with an adjustable, stainless band; a mechanical seal with tapered, precast opening; or other method approved by the ENGINEER which provides for a flexible, watertight penetration.

8. Chimney Seal

Wherever "Chimney seal" is designated on the Drawings an internal flexible rubber seal shall be provided between the manhole frame and chimney or corbel section of the manholes. The rubber seals shall be as manufactured by Cretex Specialty Products, Waukesha, Wisconsin or equal and shall consist of the following components:

- a. Rubber Sleeve - The flexible rubber sleeve shall be extruded from a high grade rubber compound conforming to the applicable requirements of ASTM C923, with hardness (durometer) of  $45 \pm 5$ .

The sleeve shall be double pleated with a minimum unexpanded vertical expansion when installed of no less than two (2) inches. The top and bottom section of the sleeve shall contain an integrally formed expansion band recess and multiple sealing fins.

Any splice used to fabricate the sleeve shall be hot vulcanized and have a strength such that the sleeve shall withstand a 180 degree bend with no visible separation.

- b. Expansion Bands - The expansion bands used to compress the sleeve against the manhole shall be 16 gauge stainless steel conforming to ASTM A240, Type 304, with a minimum width of 1-3/4 inches.

The expansion mechanism shall have the capacity to develop the pressures necessary to make a watertight seal and shall have a minimum adjustment range of two (2) diameter inches. Screws and nuts used for this mechanism shall be stainless steel conforming to ASTM F593 and 594, Type 304.

9. Manhole/Lift Station/Valve Vault Lining

- a. All new and existing manholes, lift stations, valve vaults, etc., shall be lined to protect the structure and prevent the infiltration of ground water. Said structures shall be lined before they are vacuum tested and put into service. They shall be thoroughly cleaned of all dust, dirt, and debris immediately before the lining process begins. The Liner System shall be a “stress skin” panel polymer consisting of three layers with a first barrier coat of polyuria, a surfacing coat of closed-cell urethane foam, and a final barrier coat of polyuria.

The system shall have a broad range of chemical resistance and the ability to stop infiltration.

The application thickness of the three-layer system shall be no less than 500 mils. The manufacturer and applicator shall warrant all work against defects in materials and workmanship for a period of ten (10) years from the date of final acceptance of the installation. Repairs to defects in materials or workmanship shall be accomplished within a reasonable time after receipt of written notice of said defect. The applicator must have a minimum of three (3) years experience and be certified by the manufacturer. The product shall have been installed in wastewater structures for a minimum of seven (7) years and be verifiable.

Payment for the liner shall be a lump sum for all structures shown on the plans.

**52.04.02. SANITARY SEWER SERVICES**

Service sewers shall conform to the requirements of Section 33 of the Standard Specifications.

- 1. Service laterals shall be six (6) inches and be of the same material as the main, unless specified otherwise on the Drawings. All service laterals shall have a slope not less than 1% and be terminated with a cap.
- 2. No service laterals will be allowed to tie into the new manhole but instead will be tied to the new sewer adjacent to the manhole.
- 3. Set over manholes are required when connecting the new sanitary sewer main to an existing sanitary sewer line. A manhole base shall be poured around the existing sewer pipe. After the precast manhole is set on a concrete base and the pipe connections has been completed the top half of the existing sewer pipe that is exposed in the manhole shall be cut off and removed.



### **52.04.03. QUICK COUPLER**

Quick couples for emergency connections shall be supplied as required. Cap shall be supplied/installed to keep dust and debris off/out of fitting.

### **52.04.04. GATE VALVE**

Gate valves shall be designed for a minimum 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 inch-12 inch gate valves shall be per Section 10.04.07.9.a with 'O' ring seals.

Gate valves shall have mechanical joints. No "push-on" joints will be allowed. All bolts for the bonnet shall be stainless steel. All bolts for the retainer glands shall be Cor Blue or an equivalent ASTM A 242 material. 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.

### **52.04.05. SWING CHECK VALVE**

The Swing Check Valve shall be of the full waterway body type, with a domed access cover and vent port. The shaft seals shall consist of V-type packing in a fixed gland with an adjustable follower designed to prevent over compression of the packing and to meet design parameter of the packing manufacturer. Removable, slotted shims shall be provided under the follower flanges to provide for adjustment and prevent over loading of the packing. The valve shall be factory equipped with a lever and weight assembly.

The lever shall be equipped with three holes for adjusting the bolted weight assembly. When the valve is closed, the lever and weight shall be located 30 degrees below horizontal. The valve body shall be full flow equal to nominal pipe diameter area at all points through the valve and shall be equipped with a threaded adjustable open stop. The body seat shall be O-ring sealed and field replaceable without removing the valve from the line. The end flanges shall contain integrally case mounting pads. The top access port shall be full size, allowing removal of the disc without removing the valve from the line. The access cover shall be domed in shape to provide flushing action over the disc for operating in lines containing high solids content. The disc shall be of one-piece construction and connected to the shaft with a disc arm and two pivot pins to provide pivot action to allow self-adjusting seating at all pressures.

The valve body, cover and disc shall be constructed of ASTM A536 Grade 65-45-12 ductile iron. The exterior and interior of the valve shall be coated with an NSF/ANSI 61 approved fusion bonded epoxy coating. The removable body seat shall be constructed of ASTM A276, Type 304 stainless steel. The removable resilient seat shall be precision

molded Buna-N (NBR), ASTM D2000-BG. The disc arm and external levers shall be ductile iron.

Valves shall not be located in the wet well or vertically mounted. Valves shall be able to pass a sphere not less than 80% of the diameter of the valve.

#### **52.04.06. PLUG VALVE**

Plug valves shall be of the nonlubricated eccentric type with resilient faced plugs. Valve bodies shall be composed of materials meeting the requirements of ASTM A126, Class B, with added nickel and chromium ("Semi-Steel"). Bearings shall be stainless steel. Resilient plug facings shall be Neoprene for use with water, sewage, and sludge and Isobutene-Isoprene for use with compressed air (maximum temperature 250F). Stem packing (and gland) shall be accessible without disassembly of the valve and of materials compatible with the valve's service conditions. All plug valves 6" and larger shall be furnished with gear type actuators, position indicators and adjustable memory stops; plug valves less than 6" in size shall be lever actuated with the same features. These valves have a preferred direction of shut off, and it is the responsibility of the contractor to see that they are properly installed. All exposed nuts, bolts, springs, washers, and other hardware shall be stainless steel for plug valves in buried or submerged service; otherwise, the hardware shall be zinc plated.

Valves shall not be located in the wet well or vertically mounted. Valves shall be able to pass a sphere not less than 80% of the diameter of the valve.

#### **52.04.07. BALL CHECK VALVE**

Ball check valves shall be designed to be non-clog, fully automatic, maintenance free and specifically suited for operation in sewage and storm water where solids, fibers, grit or highly viscous materials are encountered.

Ball check valves will have one moving part, the ball, which automatically rolls out of the path of flow, thus providing an unobstructed and "full flow" equal to nominal size. Upon discontinuation of flow the ball automatically rolls back to the closed position, thus providing a positive seal against back pressure or backflow.

The ball shall have an exterior coating of vulcanized nitrile rubber resistant to grease, petroleum products, animal and vegetable fats, dilute concentrations of acids and alkalies, tearing and abrasion. The body and cover shall be nodular cast iron type GGG 40/ASTM 65-45-12/SAE 4512. Ball check valves are designed to be maintenance-free and suited for installation in the horizontal or vertical position. The valve shall be so constructed that by unbolting and lifting off the cover, the ball may be removed and replaced without removing the valve from the line.

Ball check valves will be available with either a floating or sinking ball.

Valves shall not be located in the wet well or vertically mounted. Valves shall be able to pass a sphere not less than 80% of the diameter of the valve.

#### **52.04.08. COMBINATION AIR RELEASE VALVE**

Combination air release valves shall be installed at high points in the force main when directed by the ENGINEER. Valves shall have 2 inch inlet and outlet. All combination

valves shall be so designed as to permit the release of a large quantity of air during the filling of the pipeline and also permit a large quantity of air to reenter the pipeline to break the vacuum and eliminate any danger of collapse should the liquid suddenly leave the pipeline. The combination pressure unit operates independently and releases small accumulations of air which may collect while the line is in operation and working under pressure. Valves shall have cast iron bodies and be furnished with national pipe threads. Floats and trim shall be of a non-corrosive metal, standard with the manufacturer. Seats shall be of a material which will provide cushion for the float sufficient to receive float shock upon closing.

All 2 inch valves shall be per Section 10.04.07. Connections shall be made to the pipeline by the use of a 2 inch corporation stop. Combination air valves shall be installed in a standard 30 inch meter well with lid. Fittings shall be used for the 2 inch copper vent line piping, bending will not be allowed. A #22 mesh stainless steel screen shall be secured over the open end of the 2 inch copper vent line piping.

Combination air release valves shall be paid for at the contract unit price for each installed as specified. This price shall include all excavation, materials, dewatering, meter well, backfill, 4 inch x 4 inch treated post (for protection of copper vent line) with the top cut at a 45° angle, installation of a Valve Marker next to wood post, a meter skin insulator, over the top of the air release valve, painting vent pipe if requested by OWNER, and other miscellaneous work as necessary. These valves shall be Combination Air Release valve and shall be in a meter box.

#### **52.04.09. VALVE BOX**

Valve boxes shall be of 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 "SEWER" shall be cast in the cover. Boxes shall be installed over each plug valve and 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 sewer main is installed deeper than normal due to utilities, convenience, etc. This work shall be incidental to the Contract Price.

All valve boxes for valves in the upright position (operating nut in the 0° position) shall be installed upon the valve with the use of a Gate Valve Alignment Device to stabilize and center the valve box. All costs shall be incidental to the contract price. All valve boxes for valves installed on their side (operating nut in the 90° or 270° position) and requiring a bevel gear 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. 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.

#### **52.04.10. VALVE BOX MARKER**

Valve markers shall be per Section 10.04.07.15. The marker shall be two sided with identification stickers located on both sides containing OWNER's official name and telephone number. Color to be selected by OWNER. These markers shall be placed

either one per valve or one per cluster of valves. The markers shall be used to mark manholes in the fields unless alternate method is approved by ENGINEER and OWNER.

#### **52.04.11. DUCTILE IRON RESTRAINT GLANDS**

Restraint for PVC and ductile iron pipe joined with standardized mechanical joint fittings shall be incorporated in the design of the follower gland and the PVC pipe restraining glands shall provide full circle contact and support of the pipe wall. Restraint shall be accomplished by a series of ring segments mechanically retained inside the gland housing and designed to grip the pipe wall in an even and uniform manner. Restraining ring segments shall be actuated by bolts featuring twist off heads. All components of the restrainer, including the gland bolts, and restraint segments shall be of high strength ductile iron, ASTM A536, Grade 65-45-12. Restraining devices shall be UL Listed/FM approved on PVC pipe and shall be certified by an independent testing facility as meeting or exceeding ASTM F1674, Standard Test Method for Joint Restraint Products for Use with PVC Pipe. Joint restraints shall be used at all fittings, gate valves, and hydrants, not requiring an anchor coupling, and shall be incidental to the contract price. Restraints shall be rated at a minimum of 200 psi.

#### **52.04.12. CASING SPACERS**

Casing spacers for 6-inch sewer main and smaller shall be a polyethylene casing spacer which is injection molded from high density polyethylene. The compressive strength shall be greater than 3,100 psi and tensile strength shall be greater than 3,100 psi.

The casing spacers for sewer main larger than 6-inch shall be bolt on style with a shell made of two (2) sections of T-304 stainless steel or some other non-corrosive metal. All nuts and bolts are to be 18-8 stainless steel or equivalent non-corrosive material. The runners shall be made of ultra high molecular weight polymer with high abrasion resistance and a low coefficient of friction.

During installation, either lock washers or lock nuts shall be used when bolting the spacers together. Casing spacers shall be installed on six (6) foot centers or three (3) to a pipe segment and shall be included in bid price for casing pipe.

#### **52.04.13. COPPER TRACER WIRE**

Copper tracer wire shall be installed with all force main. The wire shall be copper-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) creating a continuous wire throughout all force main and appurtenances. All splices of tracer wire shall utilize direct bury splice kits per Section 10.04.07.5.c. During installation of the connector, the CONTRACTOR shall tie the tracer wire into a knot and leave approximately 4 inches to be inserted into the connector per manufacture's specifications. The CONTRACTOR shall install tracer wire per Section 10.04.07.5.b. for force main installed by trenching and per Section 10.04.07.5.a. for force main installed by directional boring. The Contractor shall include in his bid price for force 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.

**52.04.14. METER/AIR RELEASE BOX**

The CONTRACTOR shall furnish and install a meter/air release box as shown on the drawings and as approved by the ENGINEER. The meter box shall be plastic profiled-wall, as per Specification 10.04.07.17.a. The meter box shall be supported on a minimum of 4 - 18" x 18" paving stones. The lid shall be per section 10.04.07.18.a.



# **BORING SEWER MAINS**

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## **BORING SEWER MAINS**

### **Section 55**

#### **55.01. SCOPE OF WORK**

The CONTRACTOR shall furnish all equipment, machinery, labor and materials necessary to perform all operations in connection with the conventional boring and pulling or directional boring of sewer mains of the required diameter and type of material at locations that may be designated at time of construction. **Gravity pipe bores must be at grade with little or no tolerance, see below.**

The CONTRACTOR is responsible for any charges by IDOT and others during the course of the work and shall include such costs in their bid price.

Unless otherwise noted in these specifications, trenchless construction shall abide by Section 23 of the Standard Specifications.

#### **55.02. CONSTRUCTION DETAILS**

**The alignment and elevation of the forward end of the boring shall be checked and if it does not meet the requirements of the permit, the auger will be pulled and a new boring made at no additional cost to the OWNER.**

The CONTRACTOR shall fill over excavation of bore and recovery pits at entrance and exit of sewer main through bore hole with compacted sand or CA-6 to the bottom of the sewer main giving a sound foundation for the sewer main preventing the sewer main from shearing as the backfill settles. Payment for the sand or CA-6 shall be considered incidental to the contract price for bores.

Any cracking or damage caused by the boring operation to the traveled surfaces (regardless of the soil and/or rock type encountered) shall be repaired or replaced, at the CONTRACTOR's expense, as required by the OWNER.

#### **55.03. MINIMUM DISTANCE FROM PAVEMENT**

This section shows the maximum distance beyond road surfaces the bore payment will extend without approval of the ENGINEER.

State Highways	20 feet
County Highways	20 feet
Township Roadways	15 feet
Driveways	10 feet

#### **55.04. STEEL CASING MINIMUM SPECIFICATIONS**

Casing pipe used for sewer mains shall be ASTM A139 Grade B, welded pipe. The minimum wall thickness for casing pipe shall be as follows, unless otherwise noted on the Drawings:

Pipe Diameter (in.)	Wall Thickness (in.)*
6	0.28
8	0.322
10	0.365
12 – 48	0.375

\*Note: Railroad crossings require greater wall thickness. The CONTRACTOR shall use the steel casing wall thickness approved by the railroad.

The casing pipe shall be bituminous tar lined inside and coated outside. Where two (2) sections of casing are welded together, a bituminous tar coating shall be applied to the welded joint.

Certain installation practices are necessary to protect the sewer main that is required to go through the casing pipe. These practices are necessary to prevent the pipe from resting on the joints, and provide for retrieval if repairs are necessary in the future. Prior to inserting the sewer main in the casing, casing spacers as specified in Section 10 and 52.04.08 shall be installed on the full length of pipe.

Restrained-joint PVC pipe shall be used inside of the casing pipe, with expansion couplings at both ends exterior to the casing (see also Section 52 of these Specifications). After installing the carrier pipe, both ends of the casing pipe shall be sealed by a method approved by the ENGINEER.

#### **55.05. DIRECTIONAL BORE METHOD**

##### **A. GENERAL**

The CONTRACTOR shall bore where called for on the Drawings. Boring under state and federal interstate highways, under railroads, and all locations called out on the Drawings shall be accomplished from pits located per the boring permits. On-Grade bores must be at grade with an alignment tolerance of +/- 3 inches and a grade tolerance of +/- 2 inches. The CONTRACTOR shall be responsible for the cost to re-bore if it is outside of the tolerances listed above.

##### **B. PROCEDURE**

The CONTRACTOR shall use water, bentonite, polymer, or bentonite/polymer mixture for the mud mixture needed for the directional boring procedure and shall include the costs of these items in their unit bid price. The CONTRACTOR shall use the mixture required by the type of soil encountered.

The CONTRACTOR shall use the backreamer needed to satisfy the conditions of the directional bore and the type of soil encountered. Spiral or coned backreamers are

designed to push foreign objects such as rocks and tree roots out of the way or off to the side of the directional bore path. The surface area of the cone shaped backreamers is large so this will create a lot of drag. The wing cutter, which allows the mixed material to flow through, provides the best result in mixing.

For 8-inch or smaller pipe, a reamer larger than 1.5 times the diameter of the pipe should not be used without the permission of the ENGINEER. For 10-inch or larger pipe, a reamer of 1.3 times the diameter of the pipe or smaller is required, unless given permission by the ENGINEER.

It is recommended that the pipe follow immediately behind the backreamer or expander because the directional bore hole will start to close up instantly after the backreamer or expander is pulled through. This allows limited time, depending on the soil condition, to push the pipe in the hole.

#### C. DAMAGED PAVEMENT

Any cracking or damage caused by the directional boring operation to the traveled surfaces (regardless of the soil and/or rock type encountered) shall be repaired or replaced, at the CONTRACTOR's expense, as required by the OWNER, the ENGINEER, or the property owner.

#### D. SPECIFIED DISTANCE FROM WATERWAYS

Since waterway surfaces and streambed/streambank profiles occur in such a variety of configurations, and since CONTRACTOR's may employ a number of methods for directional boring depending on pipe installation angle, convenience, etc., it is not possible to come up with a single rule for specified directional bore distances. An estimated directional bore length has been indicated on the Drawings for IEPA purposes for each particular directional bore, and also constitutes the minimum length that will be allowed physically for the directional bore. However, the payment for lengths longer than the length indicated on the plans will only be paid with approval of the ENGINEER. In all cases, open cut excavations for bore pits shall remain at least 20 feet away from top of stream banks.

### **55.06. BORE AND JACK METHOD**

#### A. GENERAL

The CONTRACTOR shall bore and jack steel casing pipe where called for on the Drawings. Boring or jacking under state and federal interstate highways, under railroads, and all locations called out on the Drawings shall be accomplished from pits located per the boring permits. The bore must be at grade with an alignment tolerance of +/- 3 inches and a grade tolerance of +/- 2 inches.

#### B. DAMAGED PAVEMENT

Any cracking or damage caused by the bore and jack operation to the traveled surfaces (regardless of the soil and/or rock type encountered) shall be repaired or replaced, at the CONTRACTOR's expense, as required by the OWNER, the ENGINEER, or the property owner.

**55.07. DIRECTIONAL BORING ON GRADE CASING PIPE**

A. MATERIAL

Casing pipe shall be as specified on Drawings, Road Permit, and Rail Road Permits.

B. PAYMENT

This work shall be completed according to Sections 55.03, 55.04, and 55.05 above. The payment shall be per lineal foot per the bid schedule "Directional Boring Casing Pipe On-Grade" for the material, diameter, and class as called out on the drawings. Payment will only be made for bores meeting tolerances listing in section 55.05. Although the payment lengths may be less than these specified distances, depending on field conditions and actual boring lengths, no payment for borings will be allowed beyond these specified distances without approval of the ENGINEER.

**55.08. DIRECTIONAL BORING ON GRADE SEWER MAIN OR SERVICE LINE**

A. MATERIAL

Carrier pipe shall be as specified on Drawings.

B. PAYMENT

This work shall be completed according to Sections 55.03 and 55.05 above. The payment shall be per lineal foot per the bid schedule "Directional Boring On-Grade" for the material, diameter, and class as called out on the drawings. Payment will only be made for bores meeting tolerances listing in section 55.05. Although the payment lengths may be less than these specified distances, depending on field conditions and actual boring lengths, no payment for borings will be allowed beyond these specified distances without approval of the ENGINEER.

**55.09. DIRECTIONAL BORING CASING PIPE**

A. MATERIAL

Casing pipe shall be as specified on Drawings.

B. PAYMENT

This work shall be completed according to Sections 55.03 and 55.05 above. The payment shall be per lineal foot per the bid schedule "Directional Boring Casing Pipe" for the material, diameter, and class as called out on the drawings. Payment for length beyond the lengths on the plans shall only be paid with approval of the ENGINEER.

**55.10. DIRECTIONAL BORING FORCE MAIN OR FORCE SERVICE LINE**

A. MATERIAL

Carrier pipe shall be as specified on Drawings.

**B. PAYMENT**

This work shall be completed according to Sections 55.03 and 55.05 above. The payment shall be per lineal foot per the bid schedule “Direction Boring Force Main” for the material, diameter, and class as called out on the drawings. Although the payment lengths may be less than these specified distances, depending on field conditions and actual boring lengths, no payment for borings will be allowed beyond these specified distances without approval of the ENGINEER.

**55.11. BORE AND JACK CASING PIPE ON GRADE**

**A. MATERIAL**

Casing pipe shall be as specified on Drawings.

**B. PAYMENT**

This work shall be completed according to Sections 55.03, 55.04, and 55.06 above. The payment shall be per lineal foot per the bid schedule “Bore and Jack Casing Pipe On-Grade” for the material, diameter, and class as called out on the drawings. Payment will only be made for bores meeting tolerances listing in section 55.06. Although the payment lengths may be less than these specified distances, depending on field conditions and actual boring lengths, no payment for borings will be allowed beyond these specified distances without approval of the ENGINEER.

**55.12. BORE AND JACK CASING PIPE**

**A. MATERIAL**

Casing pipe shall be as specified on Drawings.

**B. PAYMENT**

This work shall be completed according to Sections 55.03, 55.04, and 55.06 above. The payment shall be per lineal foot per the bid schedule “Bore and Jack Casing Pipe” for the material, diameter, and class as called out on the drawings. Although the payment lengths may be less than these specified distances, depending on field conditions and actual boring lengths, no payment for borings will be allowed beyond these specified distances without approval of the ENGINEER.

**55.13. CARRIER PIPE IN CASING**

**A. MATERIAL**

Carrier pipe shall be as specified on Drawings.

**B. PAYMENT**

Payment for the restrained-joint (RJ) PVC installed shall be based on the unit price of the bid schedule line item, “Restrained-Joint PVC – in Casing” for the appropriate size and

pressure classification of RJ PVC pipe utilized. The payment length of the RJ PVC pipe shall be equal to the pay length determined for each bore and then rounded up to the next full length of pipe, measured in lineal footage, when the main extends in a straight line in at least one direction. The payment length of the RJ PVC pipe shall be equal to the length between fittings when there is a fitting adjacent to each end of the bore. If the CONTRACTOR elects to use additional RJ pipe, the difference will be paid at the normal PVC pipe price being installed adjacent to the bore. The cost of expansion couplings shall be incidental to the “Restrained-Joint PVC – in Casing” price.

**55.14. CARRIER PIPE IN DIRECTIONAL BORE**

Carrier pipe is included in the unit price for directional bores, see above sections.

# **PROCESS EQUIPMENT**

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## **PROCESS EQUIPMENT**

### **Section 65**

#### **65.01. SCOPE OF WORK**

The work to be performed under this section of the Technical Provisions shall include all labor, materials, equipment, and transportation necessary to provide and install process equipment and related appurtenances as shown on the drawings and specified herein.

The pump station structure shall consist of a wet well, a valve chamber and meter chamber constructed of pre-cast reinforced concrete design. The valve chamber and the meter chamber shall be separate structures adjacent to the wet well, unless otherwise shown on the Drawings.

The CONTRACTOR shall be responsible for all materials furnished under this section whether by himself or by others, and storage of the same, until final acceptance of the project.

#### **65.02. GENERAL**

##### **A. Responsibility and Coordination**

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 cost of all such details in the Bid.

It shall be the CONTRACTOR'S responsibility to ascertain that the equipment comprising the system is installed and operates properly and that the system functions as intended

##### **B. Guarantee**

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. The CONTRACTOR 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 (1) year from the date of substantial completion.

The pump shall be tested at start-up with the voltage, current and other significant parameters being recorded. The manufacturer shall provide a formal test procedure and forms for recording data. The recorded data shall be submitted to the ENGINEER in conjunction with the as-built electrical schematics before the pump station inspection is called for.

##### **C. Equipment**

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. Fabrication assemblies shall be shipped in the largest convenient sections permitted by carrier regulations, and adequately match marked for proper assembly.

##### **D. Spare Parts**

The CONTRACTOR shall be responsible for supplying spare parts as provided in these specifications and providing for the proper storage of same so that they are kept in operable condition.

E. Shop Drawings and Operation and Maintenance Manuals

The CONTRACTOR shall furnish for review complete equipment shop drawings in accordance with the Supplemental 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 CONTRACTOR must supply Operation and Maintenance manuals for all equipment in accordance with the General Conditions.

**65.03. SUBMERSIBLE WASTEWATER PUMPS**

A. General

The CONTRACTOR shall furnish and install dual submersible wastewater pumps as shown on the drawings and specified herein.

The pumps shall be as specified in below and in section 10 of these specifications. The installation shall be complete with electrical controls, electric cable, float switches, piping, valves, “easy out” removal and installation system, and valve vault access covers and appurtenances.

Each pump station shall consist of units with the following hydraulic and electrical characteristics:

Required Hydraulic Performance	Speed (rpm)	Max. Motor Size	Electrical Characteristics (phase/cycle/ voltage)
<u>Industrial Park Pump Station</u> - Xylem Model NP3153 HT 3 - 464  580 gpm @ 63' TDH	1755	15 HP	3/60/460
<u>LLCC Pump Station</u> - Xylem Model NP3171 SH 3 - 277  580 gpm @ 104' TDH	3520	35 HP	3/60/460

Electrical system and components in the raw sewage must comply with NEC requirements for Class 1, Group D, Division 1 locations.

B. Pumps

The two-pump basin shall be vertical, close coupled, self-priming, non-clog, totally submersible, and electrically powered. Each pump shall be fitted with thirty feet (30') of 304 or 316 stainless steel lifting chain. The working load of the lifting system shall be 50 %. Greater than the pump unit weight. The pump shall be supplied with a mating cast iron discharge connection and be capable of delivering the rated flow at the rated head as shown on the plans. The pump(s) shall be automatically and firmly

connected to the discharge connection, guided by no less than two guide bars extending from the top of the station to the discharge connection. There shall be no need for personnel to enter the wet-well. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal-to-metal watertight contact. Sealing of the discharge interface with a diaphragm, o-ring or profile gasket will not be acceptable. No portion of the pump shall bear directly on the sump floor.

The pumps shall be capable of handling raw, unscreened sewage. Each pump shall be capable of passing a 3-inch diameter sphere, however the pump suction and discharge openings shall be at least 6 inches in diameter.

### C. Pump Construction

All exposed nuts or bolts shall be AISI type 304 stainless steel construction. All metal surfaces coming into contact with the pump, other than stainless steel or brass, shall be protected by a factory applied spray coating of alkyd primer with an acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump. Sealing design shall incorporate metal-to-metal contact between machined surfaces. All major parts, such as the stator casing, oil casing, sliding bracket, volute and impeller shall be of gray cast iron.

#### 1. Impeller

The impeller(s) shall be gray cast iron, dynamically balanced, double shrouded non-clogging design having a long throughlet without acute turns capable of handling solids, fibrous material, heavy sludge and other matter found in normal sewage applications. Whenever possible, a full vaned, not vortex, impeller shall be used for maximum hydraulic efficiency thus, reducing operating costs. Mass moment of inertia calculations shall be provided by the pump manufacturer upon request. Impeller(s) shall be keyed to the shaft, retained with an allen head bolt and shall be capable of passing a minimum three (3) inch diameter solid. All impellers shall be coated with an acrylic dispersion zinc phosphate primer. Static and dynamic balancing operations shall not deform or weaken it.

#### 2. Wear rings

Each pump shall be equipped with a brass, or nitrile rubber coated steel ring insert that is drive fitted to the volute inlet.

#### 3. Mechanical seal

Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in a lubricant reservoir that hydrodynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and lubricant chamber, shall contain one stationary and one positively driven rotating tungsten carbide ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary tungsten-carbide seal ring and one positively driven rotating carbon seal ring. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment, nor depend on direction of rotation for sealing. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load. Seal lubricant shall be FDA approved, non-toxic.

#### 4. Motor

The pump shaft shall rotate on two bearings. Motor bearings shall be permanently grease lubricated. The upper bearing shall be a single deep groove ball bearing. The lower bearing shall be a two-row angular contact bearing to compensate for axial thrust and radial forces. Single row lower bearings are not acceptable.

Pump and motor shaft shall be the same unit. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The shaft shall be AISI type 420 stainless steel. If a shaft material of lower quality than 420 stainless steel is used, a shaft sleeve of 420 stainless steel shall be used to protect the shaft material. However, shaft sleeves only protect the shaft around the lower mechanical seal. No protection is provided in the oil housing and above. Therefore, the use of stainless steel sleeves will not be considered equal to stainless steel shafts.

The electric pump motors for the pumps shall be designed to operate on 230/460V, 3 phase, 60 cycle power. Each pump motor shall have moisture resistant Class F 15-degree Centigrade insulation. The motors shall be Nema Design B and designed for continuous duty. The motor design shall permit no fewer than fifteen (15) starts per hour under normal operating liquid levels and be capable of operating continuously for 24 hours with the liquid level no higher than sufficient to keep the pump volute submerged to its centerline.

The rotor bars and short circuit rings shall be made of cast aluminum. Thermal switches set to open at 125c (260f) shall be embedded in the stator lead coils to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the control panel.

The junction chamber containing the terminal board shall be hermetically sealed from the motor by an elastomeric compression seal. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board. Wire nuts or crimping type connection devices are not acceptable. The motor and pump shall be designed and assembled by the same manufacturer. The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15. The motor shall have a voltage tolerance of plus or minus 10 %. The motor shall be designed for operation up to 40C (104F) ambient and with a temperature rise not to exceed 176F (80C). A performance chart shall be provided showing curves for torque, current, power factor, input/output kw and efficiency. This chart shall also include data on starting and no-load characteristics. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shutoff through run-out.

The electric motors shall be designed for use with variable frequency drives (VFD).

The cable entry water seal design shall be such that precludes specific torque requirements to insure a watertight and submersible seal. Epoxies, silicones or other secondary sealing systems shall not be required or used. The cable entry junction box and motor shall be separated by a stator lead sealing gland or terminal board which shall isolate the motor interior from foreign materials gaining access through the pump top.

The cable entry shall consist of a single cylindrical elastomeric grommet, flanked by washers, all having a close tolerance fit against the cable outside diameter and entry inside diameter and compressed by the body containing a strain relief function, separate from the function of sealing the cable. The assembly shall provide ease of changing cable when necessary using the same entry seal.

All mating surfaces of major parts shall be machined and fitted with nitrile O-rings where watertight sealing is required. Machining and fitting shall be such that sealing is accomplished by automatic compression in 2 planes and O-ring contact made on four surfaces, without the requirement of specific torque limits to affect this. Rectangular cross sectioned gaskets requiring specific torque limits to achieve compression shall not be considered adequate nor equal.

Tolerances of all parts shall be such that allows replacement of any part without additional machining required to insure sealing as described above. No secondary sealing compounds, greases or other devices shall be used.

## 5. Protection

All stators shall incorporate thermal switches in series to monitor the temperature of each phase winding. At 125C (260F) the thermal switches shall open, stop the motor and activate an alarm. A leakage sensor shall be available as an option to detect water in the stator chamber. The float leakage sensor (FLS) is a small float switch used to detect the presence of water in the stator chamber. When activated, the FLS will stop the motor and send an alarm both local and/or remote. Use of voltage sensitive solid-state sensors and trip temperature above 125C (260F) shall not be allowed. The thermal switches and FLS shall be connected to a mini CAS (control and status) monitoring unit. The mini CAS shall be designed to be mounted in any control panel.

Each unit shall be provided with an adequately designed cooling system. Thermal radiators integral to the stator housing, cast in one unit, are acceptable. Where water jackets alone or in conjunction with radiators are used, separate circulation shall be provided. Cooling media channels and ports shall be nonclogging by virtue of their dimensions. Provision for external cooling and flushing shall be provided. The cooling system shall provide for continuous pump operation in liquid temperature of up to 104 degrees Fahrenheit.

Integral thermal sensors shall not be a requirement on any unit without a water jacket. Thermal sensors shall be used to monitor stator temperatures. There shall be one for each phase group in the motor. These shall be used in conjunction with and supplemental to external motor over current protection and available at the control panel.

The pumps shall contain a heat sensor thermostat connected in series with the magnetic contactor coil in the control box to stop the motor if the motor winding temperature reaches 200 degrees F. Thermostat to reset automatically when motor cools. An electric sensing probe shall be mounted in the seal chamber to detect any water leakage past the pump seals. The probe shall be connected to the alarm light on the control panel.

## D. Controls duplex control panel

A package control system shall be provided by the submersible pump manufacturer with features as listed below; each set of controls shall be factory tested before shipment. The shop drawings shall provide a description of the system's operation, an inner door layout and a component layout. A detailed component list (including manufacturer, catalog number, and volt and amp ratings) shall also be furnished.

The motor control center shall be located outside the wet well, readily accessible, and be protected by conduit seal in accordance with NEC. The seal shall be so located so that the motor may be removed and electrically disconnected without disturbing the seal.

The CONTRACTOR shall install one lockable automatic duplex pump control center in a Nema 4X, double door, heavy stainless steel factory enclosure for operation on a 230/460 volt, 3 phase, 60 Hz, 4 wire service.

The premanufactured panel shall have the following features:

- variable frequency drives for each pump sized per NEMA
- overload/circuit breaker protection for all circuits; protection in each phase for the motor; manual reset

- automatic alternator
- Programmable Logic Controller (PLC)
- nonresettable digital elapsed time meter for each pump
- disconnect capable of being locked in the open position
- pump "on" pilot lights
- H-O-A switch for each pump; when in the "automatic" mode the pumps shall function in a lead/lag sequence in accordance with the wet well level sensor and float switch signals; the pump shall alternate "lead" position after each cycle. When two pumps are started, they shall continue pumping until the "off" level switch is activated. The pumps shall automatically restart following a power failure.
- a wiring diagram and service information shall be laminated to the inner face of the door with a plastic protective covering.
- color coded and power wiring, labeled to conform to the wiring diagram.
- panel shall respond to following discrete level controls:

Lag "ON"  
 Lead "ON"  
 All "OFF"

- necessary level sensors
- heater strips sized for enclosure, thermostatically controlled, to prevent condensation inside the panel.
- cooling sized for enclosure, thermostatically controlled, to prevent condensate inside panel.
- duplex 115 VAC GFCI utility outlet receptacle mounted through the inner door.
- lightning arrestor (3 phase)
- seal failure circuitry with indicator light for each pump.
- Phase Monitor
- Surge Suppression
- Corrosion Inhibitor
- two IP, 15A circuit breakers for external devices.
- two 120V, 15A, 1 pole breakers for spare.
- two 120v, 15A, pole breakers for ventilation fans
- Elapsed time meters

#### E. Control Logic

The two (2) submersible pumps are controlled by the local PLC to either start/stop the pumps or vary their speed for a more efficient operation. The control panel has two selector switches "HAND-OFF-AUTO" and "FLOAT-XMTR". The submersible pumps speed is varied by the variable frequency drive (VFD) to vary the flow from 50% to full capacity. The selector switch in the "HAND" position, the pump will run regardless of any automatic signals, other than low level, high temperature, seal leak, or motor overload. The selector switch in the "OFF" position, the pump will not run. The selector switch in the "AUTO" position, the pump will be controlled by the PLC. The selector switch in the "FLOAT" position, the pump will run at full capacity based on float positions. The selector switch in the "XMTR" position, the pump will run at a varied capacity of from 50% to full capacity based on the level in the wetwell as measured by the submersible transmitter and calculated inflow from the system. The set point for this varied capacity is the point of 75% of the elevation change between LEAD-LAG.

Each pump shall be provided with a "PUMP RUN-OFF-PLC" selector switch. When the switch is placed in the "PUMP RUN" position, the pump will run regardless of any interlocks, with the exception of motor overload protection. The selector switch in the "OFF" position, the pump will not run. The switch placed in the "PLC" position, the above controls will govern the operation of the pump.

#### F. Alarm System

The alarm system with flashing red light ~~and automatic telephone (sensaphone)~~ shall be activated in the event of power failure and/or high water in the wet well; it shall be connected to the emergency battery pack on constant charge for service during power outage. The alarm system with battery pack shall be furnished in a separate weatherproof enclosure, and as a minimum shall have the following characteristics:

1. NEMA 4 tamperproof, lockable steel enclosure coated with baked on enamel
2. Gel-cell or nickel cadmium batteries with sufficient capacity to continuously operate both the flashing light and automatic dialer for 12 hours. (Vent batteries to atmosphere)
3. Automatic, solid-state trickle charger to maintain battery voltage at all times.
4. Designed to monitor a closed loop of alarm contacts and go into alarm condition upon a break in the loop, i.e., opening of any alarm contact.
5. Upon an alarm condition, both flash the alarm light and activate the automatic telephone dialer.
6. On-Off switch.
7. Test pushbutton.
8. Anti-condensation heater with on-off switch.
9. Automatic reset when station power has been restored.
10. Two-way amber or red flashing alarm light mounted directly on the unit (weather tight).

~~The automatic telephone dialer shall be a Sensaphone Model 1104. The operator called will have to touch tone an acknowledgement in order for the dialer to cease dialing the other phone numbers.~~ The alarm system shall be designed to operate seamlessly with the City's existing alarm system. Alarm conditions to be monitored initially are:

- a. High Water Level
- b. Low Water Level
- c. Pump 1 Failure
- d. Pump 2 Failure
- e. Loss of Power

#### G. Float Switches

Each float shall contain a single pole non mercury switch per Section 10, which activates when the longitudinal axis of the float is horizontal, and dictates when liquid level falls 1" below the actuation elevation.

The CONTRACTOR shall furnish and install sufficient electrical cable to allow settings at the elevations shown on the Drawings. Each cable shall be of sufficient length to run from bottom of wetwell to Motor Control Center without splices. The float cables shall hang from carriers which are intrinsically safe in accordance with Class I Group D, Division 1.

Cable holder: two (2) stainless steel cable holder constructed of type 304 SS per Section 10 shall be provided. Each cable holder shall have six (6) hooks and be wall mounted.

The following elevations shall guide the setting of the float levels:

- a. Low Level Alarm
- b. Pumps Off
- c. First Pump On
- d. Second Pump On
- e. High Level Alarm

Float location and settings

- a. Floats shall not be located near the flow of the incoming sanitary lines.
- b. Sewage shall not rise to the level of the incoming gravity lines during normal pump operation.
- c. All floats shall be located away from the turbulence of the incoming flow

#### H. Level Sensor – Submersible Transmitter

The CONTRACTOR shall furnish and install one (1) continuous level sensor in a stilling well and sufficient cable to measure the water level in the wet well as shown on the drawings. The instrument shall provide for continuous level indication, transmitting and control of the material in a vessel.

The level transmitter shall be installed on a 4" schedule 80 PVC stilling well supported with stainless steel friction clamps at 6'-0" o.c. with 3/8" stainless steel anchors. The stilling well shall stop 6" above the floor of the wet well. The level transmitter shall be hung 6" above the bottom of the stilling well (12" from floor). The 4" PVC stilling well shall pass through the top of the wet well and into a stainless steel electrical junction box.

The level sensor shall be as in Section 10. The probe cable shall be run to a junction box on top of the wetwell and another transmitter cable run to the PLC.

##### General Standard Features Include:

Level measurement, Hydrostatic

Level Probe

Process membrane: CERAPHIRE, dry, rugged.

Output 4-20mA analog

Typical ref. accuracy +/-0.2%

Integrated overvoltage protection

A Approval: Non-hazardous area

2 Connection: Suspension clamp, AISI 316L

D probe Tube: 316L, d = 22mm/0.87 in + potable water approval  
KTW/NSF/ACS

FE Measuring Range: 0 to 30ft H2O

2 Sensor Seal: EPDM

G Probe Cable: 70.00 ft, shortable, PE

7 Additional Option: Basic Version



## I. Power Cord

The power cable shall be sized according to the NEC and ICEA standards, have P-MSHA approval, and shall be of sufficient length to reach the junction box without the need of any splices. The outer jacket of the cable shall be all resistant chloroprene rubber. The motor and cable shall be all resistant chloroprene rubber. Pump motor power cords shall be designed for flexibility and serviceability under conditions of extra hard usage and shall meet the requirements of the National Electric Code for flexible cords in sewage pump stations. Ground fault interruption protection shall be used to de-energize the circuit in the event of any failure in the electrical integrity of the cable. Power cord terminal fittings shall be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, shall be provided with strain relief appurtenances, and shall be designed to facilitate field connecting.

## **65.04. METER VAULT, VALVE VAULT, AND WET WELL**

### A. General

Vaults shall be properly designed and sized for each specific application and site condition. Provide clearance between meters, valves and other equipment from walls, floors and other equipment at minimum clearances (or as approved by the OWNER). Provide adequate design for all site conditions to include but not limited to uplift forces, withstand a minimum h-20 class loading where applicable and others as required.

All measurements shall be verified as part of the shop drawing submittal process and documented record drawings in accordance with the specifications. The combined valve vault/meter pit submittal shall include a Structural Engineer's stamp/seal from a Structural Engineer licensed in the State of Illinois.

### B. Access Hatches

Aluminum Halliday access lids shall be cast in the top sections of the meter, wet well, and valve vault.

Access hatches shall be the wls series (single leaf) access frames and covers as manufactured by Halliday products, Inc. of Orlando, Florida shall have a 1/4" thick one-piece mill finish, extruded aluminum channel frame, incorporating a continuous concrete anchor. A 1 1/2" drainage coupling shall be located in the front left corner of the channel frame.

A bituminous coating shall be applied to the frame exterior where it will come in contact with concrete. Door panel shall be 1/4" aluminum diamond plate, reinforced to withstand a live load of 300 psf. Door shall open to 90 degrees and automatically lock with a stainless-steel hold open arm with an aluminum release handle for ease of operation. The hold open arm shall incorporate an enclosed stainless-steel compression spring assist. Door shall close flush with the frame and rest on a built-in neoprene cushion/gasket, hinges and all fastening hardware shall be stainless steel. Unit shall lock with a stainless-steel slam lock with removable key and have a non-corrosive handle and it shall be guaranteed against defects in material and/or workmanship for a period of 10 years.

The wet well access hatch shall have an integral nut rail. The upper guide rail brackets and lifting chain hooks shall be mounted to the nut rail. The access frame and door assembly shall be obtained from the pump manufacturer. Approved Shop Drawings must be obtained detailing reinforcement on the precast vault top prior to its shop fabrication.

Use aluminum hatch for pedestrian loading for off-street and non-traffic areas. Use aluminum hatch h-20 loading for off-street occasional traffic areas.

Door switches and lights shall be rated for damp and wet environments. Ventilation fan and lights shall be activated by a door switch on the hatch.

#### C. Ventilation

Unless a ventilation blower motor is called for on the drawings, it is the Owner's intent to utilize portable ventilation equipment to accomplish the required number of air changes during periods when maintenance is being performed.

#### D. Access Ladder

An all-aluminum ladder will be provided for access to the valves and piping in the valve vault. The ladder shall meet UL approval and OSHA qualifications under the Type I, Heavy Duty Specifications. It shall be attached to the valve vault door access frame

#### E. Padlocks

The CONTRACTOR shall provide padlocks, all keyed the same, for each access lid, electrical control panel, and electrical disconnect switch. They shall be keyed the same as the existing padlocks in use by the OWNER. The CONTRACTOR shall supply the OWNER with two keys for each set of padlock(s).

#### F. Pump Guides

Guide bars shall be stainless steel and of a diameter recommended by the pump manufacturer and cut to exact length. No pipe welding shall be made and no pipe splicer will be allowed. The slide rails shall be firmly braced to the wet well wall with stainless steel support brackets placed at least every 15 feet.

Lower guide bar holders shall be integral with the pump discharge connection.

All field installed bolts, nuts and washers used inside either the pump or valve chamber shall be made of 316 or 304 stainless steel. All concrete fasteners used for installation of braces, brackets or boxes shall be stainless steel wej-it type stud anchors. Anchor holes shall be drilled to the manufacturer's recommended depth. Anchors shall be hilti quick bolt two or approved equal. Pump brace anchor studs shall be 5/8" minimum.

#### G. Inside Drop

Drain lines from the valve vault and meter vault along with the gravity lines entering the wet well shall discharge to an inside drop consisting of a reliner-duran drop bowl design or equal. The optional hood is required for force main applications. Provide stainless steel straps with 3/8" stainless steel anchor bolts to secure the drop pipe at maximum 3'-0" o.c. evenly spaced. Extend the drop pipe to a minimum distance of one (1) pipe diameter from the floor. Extend the pipe below the low water level, cut the end of pipe to follow the angle of the floor.

#### H. Concrete Floor and Sump Pit

The floor of the meter vault and the valve vault shall be sloped towards the sump pit. The sump pit shall be per plans with a galvanized steel grating over the pit.

The drain from the meter vault and the valve vault shall include a backwater check valve, trap, and vented per the plumbing code.

#### I. Valve supports

After discharge piping and valves have been installed in the valve chamber, adjustable pipe cradle jacks shall be placed under the valves so that the valves and tee have a 10" clearance between the floor and valve bodies. The supports shall be firmly bolted to the floor.

An adjustable pipe cradle jack shall be placed against the back or the discharge tee and then bolted to the chamber tie wall to prevent piping thrust movement.

#### J. Additional wall/floor penetrations

Access openings in addition to the openings for the incoming gravity lines and pump discharge lines, the following accesses will be included:

1. A 4" diameter access shall be located in the center of both the wet well wall and valve vault wall. The centerline shall be 20" down from the structure top. This opening will be used for pump and control wire passage between vaults.
2. A 4" diameter access shall be located at the bottom of the valve vault wall and aligned with a 4" diameter access shall be located in the wet well wall. After the two vaults have been set, 4" P.V.C. pipe shall be glued into the couplers of each wall. This pipe is used for the valve chamber drain opening. These openings shall be plugged if the design calls for a sump pit.
3. One 2-1/2" diameter access shall be placed on each side of the valve vault sidewalls 18" from the top of the structure. One of the openings is to be used for the power and control wires from the panel board. Two openings are provided for flexibility. The opening not used shall be stubbed and capped with a piece of 2-1/2" PVC.
4. All gravity lines and discharge piping will have a "z-lock" or "a-lock" type compression fitting cast-in place where the piping passes through the valve and wet well vault walls.
5. All piping will be located a minimum of 1 foot above or below structure joints.

#### K. Meter vault

The meter vault shall include design, coordination, location and installation of the following but not limited to, piping, valves, meters, check valves, pressure regulating valve, sump, 1 or 2 sump pumps, ventilation systems, electrical lights, ladder, hatch, SCADA system and other critical systems (as determined by the OWNER).

Hatch shall be located over the meter and shall be located to allow entry without climbing over vault components. Hatch shall also be located and large enough to allow meters and valves to be easily passed through the opening without modification or damage.

All mechanical thrust restraints, tie rods and supports shall be correctly designed, sized and installed to prevent movement of vault components to include but not limited to dresser type couplings, gate valves, pipe, equipment and other items.

There shall be no valves, direction changes or anything on inflow side that will disrupt laminar flow through meter within 5 pipe diameters of the meter or as otherwise directed by the manufacturer or the city.

### **65.05. CONTROL PANEL PLACEMENT**

The station pump control panel shall incorporate the pump controls, alarm system, incoming utility power and water service into one structure. The panel shall be placed as follows:

1. The control structure shall be set on a 4" thick poured concrete pad reinforcement with 8 gauge 6 X 6 welded wire mesh. The concrete shall be laid over a well compacted 4" stone base.

2. The pad shall be laid parallel to the length of the station structure and centered between the two chambers.
3. Conduits shall be run into the power supply cabinet from beneath the structure per the detail drawing.
4. The panel shall be centered on the concrete pad.
5. The structure shall be firmly anchored to the concrete pad with six 3/8" stainless steel Wej-It type stud anchors. Anchor holes shall be drilled to the manufacturer's recommended depth. Anchors shall be Hilti Quick Bolt Two or approved equal.

#### **65.06. OWNER SUPPLIED EQUIPMENT**

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#### **65.07. FLOW METER**

##### A. Description

The CONTRACTOR shall furnish and install one (1) magnetic flow meter for each pump station meeting the requirements set forth in the following specifications and as shown on the drawings. The instrument shall provide for continuous flow measurement, transmitting, and control of the flow from the pump station. The magnetic flowmeter shall be as in Section 10.

General Standard Features Include: Promag 10W

Feature model text	Feature	Length	Feature text
Nominal Diameter	2H	0.00	8"
Liner:	U	0.00	Polyurethane
Process Connection:	L	0.00	CL.150, A105, flange ANSI B16.5
Electrodes:	0	0.00	1.4435/316L
Calibration:	A	0.00	0.5%
Additional Test:	1	0.00	w/o
Approval:	A	0.00	Non-hazardous area
Housing:	G	0.00	Field Alu, IP67 NEMA4X
Cable, Remote Version:	5	20.00	..... ft coil and signal cable
		20.00	

Cable Entry:	B	0.00	Thread NPT 1/2
Power Supply; Display:	4	0.00	85-250VAC; 2-line, push buttons
Adjustment; Software Feature:	A	0.00	Factory setup; basic version
Output:	A	0.00	4-20mA HART + pulse passive

#### B. Installation

The flow meter shall be installed as shown on the drawings complete with all cables, wires, mounting brackets, and support hardware. Installer shall follow manufacturers installation instructions provided with the unit. All field wiring and grounding shall be installed in strict accordance with the manufacturer's installation manual.

### **65.08. ODOR CONTROL EQUIPMENT**

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# **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.

### **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 shorts.
- B. Tests for open circuits.
- C. Voltage test at point furthest from electric service to determine that there is no excessive drop in potential.
- D. Test the insulation resistance of the system to ground with a Meggar.

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.

Rigid 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.

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 secondary wiring shall be color coded. Solid conductor wires shall have colored insulation stranded conductor cable shall be color taped.

Color Code is:

Neutral . . . . .	white or gray
Equipment. . . . .	green
Phase A. . . . .	black
Phase B . . . . .	red

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 THHN/THWN, 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).

#### **82.07. ELECTRICAL SERVICE REQUIREMENTS**

The CONTRACTOR 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 CONTRACTOR 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 CONTRACTOR shall immediately notify the ENGINEER.

The CONTRACTOR 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 CONTRACTOR, and shall include all such costs in his bid, in order to produce a complete and properly functioning system. The CONTRACTOR 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 CONTRACTOR 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.

#### **82.08. GENERATOR RECEPTACLE**

The CONTRACTOR shall furnish and install a manual transfer switch and a three phase, 480V generator receptacle. The CONTRACTOR shall determine and comply with in the requirements of the utility. The sleeve shall be compatible with the Owner's existing portable generator pin.

#### **82.09. INSTRUCTIONS, MANUALS, AND WARRANTY CARDS**

All instructions, operating manuals and warranty cards shall be delivered to the ENGINEER for forwarding to operating personnel. Wiring diagrams for each piece of equipment will be submitted to the ENGINEER.

#### **82.10. 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.

# IEPA Permit



# Easements





# Road Permit

