

Professional

Engineering

Services

Contract 14–
Distribution
System
Improvement
Projects (Rebid)

Contract
14-2023

Project Manual

Lake Village Water

Association

Mercer County, Kentucky

Issued for Bid

January 5, 2023



PLAN HOLDER: _____

Set No.: _____

PROJECT MANUAL

LAKE VILLAGE WATER ASSOCIATION
MERCER COUNTY, KENTUCKY
CONTRACT 14-DISTRIBUTION SYSTEM IMPROVEMENT PROJECTS (REBID)
CONTRACT 14-2023



Prepared by:

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www.strand.com

Issued for Bid
January 5, 2023



Section 00 01 10

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END OF SECTION

FOR INTERNAL USE ONLY

BIDDING AND CONTRACTING REQUIREMENTS

**LAKE VILLAGE WATER ASSOCIATION
MERCER COUNTY, KENTUCKY
CONTRACT 14–DISTRIBUTION SYSTEM IMPROVEMENT PROJECTS (REBID)
CONTRACT 14–2023**

ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the Contract 14–Distribution System Improvement Projects (Rebid) will be received by Lake Village Water Association at its office, 801 Pleasant Hill Drive, Burgin, KY 40310, until 11 A.M., local time, on January 26, 2023, at which time the Bids received will be publicly downloaded and read. The login information for the teleconference is as follows: (608) 571-7149, Conference ID 781222 24#.

The Project consists of constructing 10.5 miles of waterline replacement for 3-inch, 4-inch, 6-inch, and 8-inch pipes. Project also includes a portion of HDPE directionally drilled piping with manufacturer oversight requirements.

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

The Issuing Office is Strand Associates, Inc.[®], 651 Perimeter Drive, Suite 220, Lexington, KY 40517.

Bidding Documents may be viewed and ordered online by registering with the Issuing Office at www.strand.com or at www.questcdn.com. Following registration, complete sets of Bidding Documents may be downloaded from the Issuing Office’s website as “zipped” portable document format (PDF) files. Download the digital Bidding Documents for \$60 by inputting Quest project number 8359372 on the website’s Project Search page. Please contact QuestCDN.com at (952) 233-1632 or info@questcdn.com for assistance with free membership registration, downloading, and working with this digital project information.

For this Project, Bids will **ONLY** be received and accepted via the online electronic Bid service through QuestCDN.com. To access the electronic Bid Form, download the Project Documents and click the online Bidding button at the top of the Advertisement.

All Bidders submitting a sealed Bid shall obtain the Bidding Documents from QuestCDN.com.

Bidders who submit a Bid must be a Plan Holder of record at the Issuing Office. Bids from Bidders who are not on the Plan Holders List may be returned as not being responsive.

Plan Holders are requested to provide an e-mail address if they wish to receive addenda and other information electronically. Plan Holders are requested to designate whether they are a prime contractor, subcontractor, or supplier if they want this information posted on the project Plan Holders List.

The Lake Village Water Association reserves the right to reject any or all Bids, to waive any technicality, and to accept any Bid which it deems advantageous. All Bids shall remain subject to acceptance for 90 days after the time set for receiving Bids.

Contract award will be made based on the lowest responsive and responsible Bidder.

A pre-Bid conference will be held via teleconference at 10 A.M., local time on January 12, 2023. Bidders are encouraged to attend and participate in the conference. The login information for the teleconference is as follows: (859) 551-3998, Conference ID 192 979 651#.

Bid security shall be furnished in accordance with the Instructions to Bidders.

The Strand Associates, Inc.® project manager is Liz A. Dienst, P.E. and can be contacted at Strand Associates, Inc.®, 651 Perimeter Drive, Suite 220, Lexington, KY 40517, (859) 225-8500, liz.dienst@strand.com regarding the Project.

Owner: Lake Village Water Association

By: Mike Sanford

Title: Executive Director

Date: January 5, 2023

++ END OF ADVERTISEMENT FOR BIDS ++

FOR INTERNAL USE ONLY

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 digitally as 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.

2.04 Drawings and specifications for the project are being offered to Bidders in electronic form (.pdf format). Such Bidder must have Adobe Reader 6.0 or later to access the electronic files. Paper copies will be used for Contract execution.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

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

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

B. Bidder's state or other contractor license number, if applicable.

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

D. Other required information regarding qualifications.

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. The Supplementary Conditions identify:

- a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.
- b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
- d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

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

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

C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

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

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.
- B. Paragraph 7.12.C of the General Conditions states that 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 including but not limited to the AIS requirements as mandated and any subsequent statutes mandating domestic preference which apply to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the 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 via teleconference at 10 A.M., local time on January 12, 2023. Bidders are encouraged to attend and participate in the conference. The login information for the teleconference is as follows: (859) 551-3998, Conference ID 192 979 651#.

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 five percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of Surety2000 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. A PDF copy of the Bid Bond can be attached to electronically submitted bids.
- 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. Each request shall include Manufacturer's Certification letter (Exhibit D) for compliance with AIS requirements and any subsequent statutes mandating domestic preference, if applicable. 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: Directional Drilling.

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.
- 12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.
- 12.04 The Contractor shall not award work to Subcontractor 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 and the Bid Form signed. 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 All blanks on the Bid Form must be filled and all required documents uploaded before QuestCDN.com will accept the bid. The Bid shall be signed electronically where required and in accordance with the instructions included in this Article.
- 13.03 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.
- 13.04 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.
- 13.05 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.
- 13.06 A Bid by an individual shall show the Bidder's name and address for receiving notices.
- 13.07 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.
- 13.08 All names shall be printed below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.10 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.11 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 *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.

14.02 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. Discrepancies between words and figures will be resolved in favor of the words.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 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.
- 15.02 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 modified or 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 receiving of Bids.
- 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 downloaded at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

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

19.03 Evaluation of Bids

- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- B. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.

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

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

19.06.1 If a Contract is to be awarded, it will be awarded to the responsive and responsible Bidder with the lowest bid whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project.

19.06.2 This Bid is subject to Kentucky Revised Statutes Section 45A.490 through 45A.494, which in general provides that a “resident bidder” of Kentucky is to be given a bidding preference over a “nonresident bidder” who is registered in a state that gives preference to its in-state resident bidders over a Kentucky resident bidder. The bidding preference is to be the same as that stipulated for the state of the “nonresident bidder.” If the state of a “nonresident bidder” provides no specific preference, then “resident” and “nonresident bidders” are to be treated the same when evaluating Bids.

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 – FEDERAL REQUIREMENTS

22.01 Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.

22.02 Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A–Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations

Act, 2017) and subsequent statutes mandating domestic preference applies an American Iron and Steel requirement to this project. All iron and steel products used in this project must be produced in the United States. The term "Iron and Steel Products" as defined in Section 1.b.2. The de minimis and minor components waiver *{add project specific waivers as applicable}* apply to this contract.

ARTICLE 23 – WAGE RATE DETERMINATION

23.01 A wage rate determination is not a requirement of this Project.

ARTICLE 24 – PERFORMANCE BOND FOR WAGES DUE

24.01 Successful Bidders, whether a corporation, partnership, or individual, who has not been doing business in the State of Kentucky for five consecutive years, shall comply with KRS 337.200.

ARTICLE 25 – LICENSES, FEES, AND TAXES

25.01 The Bid shall include all taxes in effect at the time the Bid is submitted, unless specifically exempted in the Bidding Documents. No change will be allowed for taxes from which Owner is exempt. Bidders who are uncertain as to what items are subject to tax, or who require further explanation or clarification, are requested to contact the State of Kentucky Revenue Cabinet. Refer to the Supplementary Conditions SC-7.09 for additional information on taxes.

ARTICLE 26 – KICKBACK STATUTES

26.01 Bidders shall comply with Kentucky Statute KRS 45A.455 Prohibitions Against Conflicts of Interests, Gratuities, and Kickbacks. See Supplementary Conditions 6.09.

ARTICLE 27 – OTHER BID REQUIREMENTS

27.01 Bidders shall complete the following documents attached to the Bid:

Campaign Finance Disclosure

Labor Law Disclosure

Certificate of Resident Bidder Status

Other documents specific to the Project as listed in the Bid

ARTICLE 28 – LAWS, ORDINANCES, AND REGULATIONS

28.01 Bidder must familiarize itself with all laws, ordinances, and regulations by federal, state, city, or other governmental agency, which by reason of being neglected or violated may affect the Work contemplated and must secure and pay the fee required for any permits which may be necessary unless such fees are otherwise indicated to be paid in the Bidding Documents.

ARTICLE 29 – INSURANCE

29.01 Before execution of Contract by Owner, the successful Bidder shall furnish Owner a certificate or certificates issued by or on behalf of insurers or a self-insurance program or group self insurance program, qualified to do business in the Commonwealth of Kentucky under KRS Chapter 304 or KRS Chapter 342, certifying that the successful Bidder complies with the Worker's Compensation

laws of Kentucky and is insured or indemnified against public liability claims which may arise out of the performance of the Work under the proposed Contract.

ARTICLE 30 – EEO REQUIREMENTS

30.01 Bidder shall abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the Equal Opportunity Clause set forth in the General Conditions.

FOR INTERNAL USE ONLY

BID FORM

CONTRACT 14-DISTRIBUTION SYSTEM IMPROVEMENT PROJECTS (REBID)

CONTRACT 14-2023

LAKE VILLAGE WATER ASSOCIATION

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Bid Recipient

- 1.01 Bids to be received until 11 A.M. Local Time, January 26, 2023.
- 1.02 Online electronic bidding through QuestCDN.com is the only way the Bid will be accepted. To access the electronic bid form, download the project documents and click the online bidding button at the top of the advertisement.
- 1.03 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

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

ARTICLE 3 – BIDDER’S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
 - A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the Addenda.

- 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 and including all AIS Requirements.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

FOR INTERNAL USE ONLY

ARTICLE 5 – BASIS OF BID

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

The following abbreviations may be used in this Bid:

CIP	-	Complete in Place	LS	-	Lump Sum
CY	-	Cubic Yard	LT	-	Left
DI	-	Ductile Iron	MBF	-	Thousand Board Feet
DIA	-	Diameter	MFOB	-	Thousand Freight-On-Board
EA	-	Each	MH	-	Manhole
EST	-	Estimate(d)	RCP	-	Reinforced Concrete Pipe
EXCL	-	Excluding	RT	-	Right
FT	-	Feet	SF	-	Square Foot
GAL	-	Gallon	STA	-	Station
HERCP	-	Horizontal Elliptical RCP	SY	-	Square Yard
HRS	-	Hours	T	-	Ton
IN	-	Inch	VLF	-	Vertical Linear Foot
INCL	-	Including	W/	-	With
LBS	-	Pounds	W/O	-	Without
LF	-	Linear Foot			

BIDDERS SHOULD NOT ADD ANY CONDITIONS OR QUALIFYING STATEMENTS TO THIS BID OR THE BID MAY BE DECLARED IRREGULAR AS NOT BEING RESPONSIVE TO THE INSTRUCTIONS TO BIDDERS.

Bid

CONTRACT 14-DISTRIBUTION SYSTEM IMPROVEMENT PROJECTS (REBID)

CONTRACT 14-2023

LAKE VILLAGE WATER ASSOCIATION

The following prices per item shall be for furnishing and installing the various items of material and Work as specified and shown on the Drawings. Bidder agrees to perform the Work as shown on the Drawings and described in the Specifications for the following listed prices. Bidder acknowledges that unit prices have been computed in accordance with Paragraph 13.03.B of the General Conditions. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

NOTE: A price must be bid for each item in the Bid, even though the estimated quantity is zero. Unbalanced or unreasonable unit prices may cause rejection of the Bid.

Item No.	Description	Estimated Quantity	Unit	Bid Unit Price	Bid Price
1.	Install new customer service on the same side of the road as the waterline. Furnished and installed per detail B/Sheet C8.0. Note: Owner to provide meter.	90	EA	\$	\$
2.	Install new customer service on the opposite side of the road from the waterline. Furnished and installed per detail B/Sheet C8.0. Note: Owner to provide meter.	81	EA	\$	\$
3.	1-IN PVC-Schedule 40 Pipe	22	LF	\$	\$
4.	2-IN PVC ASTM D2241, CL. 200, SDR 21 Pipe	12	LF	\$	\$
5.	3-IN PVC ASTM D2241, CL.200, SDR 21 Pipe	7,228	LF	\$	\$
6.	4-IN PVC ASTM D2241, CL. 200, SDR 21 Pipe	6,150	LF	\$	\$
7.	4-IN PVC ASTM D2241, CL. 250, SDR 17 Pipe	10	LF	\$	\$

Item No.	Description	Estimated Quantity	Unit	Bid Unit Price	Bid Price
8.	6-IN PVC ASTM D2241, CL. 200, SDR 21 Pipe	1,309	LF	\$	\$
9.	8-IN PVC ASTM D2241, CL. 200, SDR 21 Pipe	40,659	LF	\$	\$
10.	4-IN HDPE-CL. 250, DR 9 Pipe	288	LF	\$	\$
11.	Horizontal Directional Drill 8-IN HDPE Casing Pipe, DR-9	223	LF	\$	\$
12.	Bore Watermain Under Concrete Drive Surface	152	LF	\$	\$
13.	10-IN Steel Casing Installed by Open Cut	135	LF	\$	\$
14.	14-IN Steel Casing Installed by Open Cut	146	LF	\$	\$
15.	14-IN Steel Casing Installed by Jack and Bore	340	LF	\$	\$
16.	2-IN Gate Valve and Box	2	EA	\$	\$
17.	3-IN Gate Valve and Box	10	EA	\$	\$
18.	4-IN Gate Valve and Box	3	EA	\$	\$
19.	6-IN Gate Valve and Box	2	EA	\$	\$
20.	8-IN Gate Valve and Box	25	EA	\$	\$
21.	RR ROW Pipeline Marker	2	EA	\$	\$
22.	Stream Crossing W/ Encasement Pipe and Concrete Cap (detail F/C8.0)	86	LF	\$	\$
23.	Creek Crossing Special Meter Box (Detail K/C8.1)	2	EA	\$	\$
24.	Automatic Air Release Assembly	19	EA	\$	\$
25.	Blowoff Assembly	7	EA	\$	\$

Item No.	Description	Estimated Quantity	Unit	Bid Unit Price	Bid Price
26.	Remove Valve Box	23	EA	\$	\$
27.	4-IN Pressure Reducing Valve	1	EA	\$	\$
28.	4-IN Tapping Sleeve, Valve, and Box	2	EA	\$	\$
29.	6-IN Tapping Sleeve, Valve, and Box	3	EA	\$	\$
30.	8-IN Tapping Sleeve, Valve, and Box	4	EA	\$	\$
31.	Restraining Collar W/ PVC to HDPE Transition	1	EA	\$	\$
32.	PVC to HDPE Transition	1	EA	\$	\$
Total of All Unit Price Bid Items					\$

COMPUTED TOTAL BID CONTRACT 14-2023 (ITEMS 1 THROUGH 32)

Dollars \$ _____

(Words)

(Numbers)

ARTICLE 6 – TIME OF COMPLETION

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

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security (Bond, Certified Check, Surety2000).
 - B. Statement pursuant to Labor Law Disclosure (KRS 45A.343).
 - C. Campaign Finance Disclosure (KRS 45A.395).
 - D. Statement pursuant to (KRS 45A.395).
 - E. Affidavit for Bidders Claiming Kentucky Resident Bidder Status.
 - F. Conflict of Interest (KRS 45A.455).
 - G. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplemental General Conditions.
 - H. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions (AD-1048).
 - I. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans.
 - J. Qualifications Statement.

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)

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

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*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

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

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

By:

Signature

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Attest:

Signature

Signature

Title

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.

STATEMENT REQUIRED PURSUANT TO KRS 45A.343

The undersigned, as a duly authorized officer of _____ hereinafter called the company, pursuant to KRS 45A.343 states;

1. To the best of my knowledge, information and belief, the company has not been finally determined to have violated any of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, or 342 that apply to it within the five year period preceding this statement.
2. The company acknowledges that it will be required to be in compliance with those provisions of KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that apply to it for the duration of the Contract to be entered into with Owner.
3. The company acknowledges that if it fails to reveal any final determination of violation of KRS Chapters 136, 139, 141, 337, 338, 341, or 342, or to comply with the applicable provision of those statutes for the duration of the aforesaid Contract, such shall be grounds for Owner to:
 - a. Cancel its contract with the company, and,
 - b. Disqualify the company from eligibility for future contracts awarded by Owner for a period of two years.

This the _____ day of _____, _____.

(Company Name)

By: _____
(Typed or printed name)

Title: _____

45A.395 Determination of responsibility – Right of nondisclosure.

- (1) A written determination of responsibility of a bidder or offeror shall be made, based on a reasonable inquiry conducted by the local public agency. The unreasonable failure of a bidder or offeror to promptly supply information upon request may be grounds for a determination of nonresponsibility of such bidder or offeror.
- (2) A written determination of responsibility of a bidder or offeror shall not be made until the bidder or offeror provides the local public agency with a sworn statement made under penalty of perjury that he has not knowingly violated any provision of the campaign finance laws of the Commonwealth and that the award of a contract to the bidder or offeror will not violate any provisions of the campaign finance laws of the Commonwealth. “Knowingly” means, with respect to conduct or circumstances described by a statute defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.
- (3) Except as otherwise provided by law, information furnished by a bidder or offeror pursuant to this section may not be disclosed outside of the local public agency without prior written consent of bidder or offeror.

Effective: July 14, 1992

History: Amended 1992 Ky. Acts ch. 288, sec. 19.

STATEMENT REQUIRED PURSUANT TO KRS 45A.395

The provisions of KRS 45A.395 required that any bidder or offeror submit a sworn statement in conformity with such statute as a prerequisite to a determination that such bidder or offeror is a responsible bidder.

The undersigned, individually and as the _____
(Office or Title)

of _____
(Bidder or Offeror)

states under penalty of perjury that neither he (she), nor, to the best of his (her) knowledge, anyone acting on behalf of Bidder or Offeror, has knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to the Bidder or Offeror will not violate any provision of the campaign finance laws of the Commonwealth. "Knowingly" means, with respect to conduct or to a circumstance described by a statute defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

This the _____ day of _____, _____.

(Company Name)

By: _____
(Typed or Printed Name)

(Signature)

Title: _____

Contract: _____

REQUIRED AFFIDAVIT FOR BIDDERS CLAIMING KENTUCKY RESIDENT BIDDER STATUS

FOR BIDS AND CONTRACTS IN GENERAL:

Bidder hereby swears and affirms under penalty of perjury that, in accordance with KRS 45A.494(2), Bidder is an individual, partnership, association, corporation, or other business entity that, on the date the Contract was first advertised or announced as available for bidding, Bidder:

- 1. Is authorized to transact business in the Commonwealth of Kentucky, and
- 2. Has for one year prior to and through the date of advertisement:
 - a. Filed Kentucky corporate income taxes,
 - b. Made payments to the Kentucky unemployment insurance fund established in KRS 341.490, and
 - c. Maintained a Kentucky workers' compensation policy in effect.

OWNER reserves the right to request documentation supporting a Bidder's claim of resident bidder status. Failure to provide such documentation upon request shall result in disqualification of the Bidder or contract termination.

Signature Printed Name

Title (if signing on behalf of an entity) Date

Company Name _____

Address _____

Subscribed and sworn to before me by _____
Affiant Title

of _____, this _____ day of _____, 201__.
Company Name

Notary Public

[Seal of Notary]

My commission expires: _____

45A.455 Conflict of interest—Gratuities and kickbacks—Use of confidential information.

- (1) It shall be a breach of ethical standards for any employee with procurement authority to participate directly in any proceeding or application; request for ruling or other determination; claim or controversy; or other particular matter pertaining to any contract, or subcontract, and any solicitation or proposal therefor, in which to his knowledge:
 - a. He, or any member of his immediate family has a financial interest therein; or
 - b. A business or organization in which he or any member of his immediate family has a financial interest as an officer, director, trustee, partner, or employee, is a party; or
 - c. Any other person, business, or organization with whom he or any member of his immediate family is negotiating or has an arrangement concerning prospective employment is a party. Direct or indirect participation shall include but not be limited to involvement through decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or purchase standard, rendering of advice, investigation, auditing, or in any other advisory capacity.
- (2) It shall be a breach of ethical standards for any person to offer, give, or agree to give any employee or former employee, or for any employee or former employee to solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment, in connection with any decision, approval, disapproval, recommendation, preparation of any part of a purchase request, influencing the content of any specification or purchase standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any proceeding or application, request for ruling or other determination, claim or controversy, or other particular matter, pertaining to any contract or subcontract and any solicitation or proposal therefor.
- (3) It is a breach of ethical standards for any payment, gratuity, or offer of employment to be made by or on behalf of a subcontractor under a contract to the prime contractor or higher tier subcontractor or any person associated therewith, as an inducement for the award of a subcontract or order.
- (4) The prohibition against conflicts of interest and gratuities and kickbacks shall be conspicuously set forth in every local public agency written contract and solicitation therefor.
- (5) It shall be a breach of ethical standards for any public employee or former employee knowingly to use confidential information for his actual or anticipated personal gain, or the actual or anticipated personal gain of any other person.

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(Name of borrower or grantee)

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

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

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

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

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

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

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

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

DATE _____

(Signature of Bidder or Prospective Contractor)

Address (including Zip Code)



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

The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552a, as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 CFR §§ 180.300, 180.335, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.

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

(Read instructions on page two before completing certification.)

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

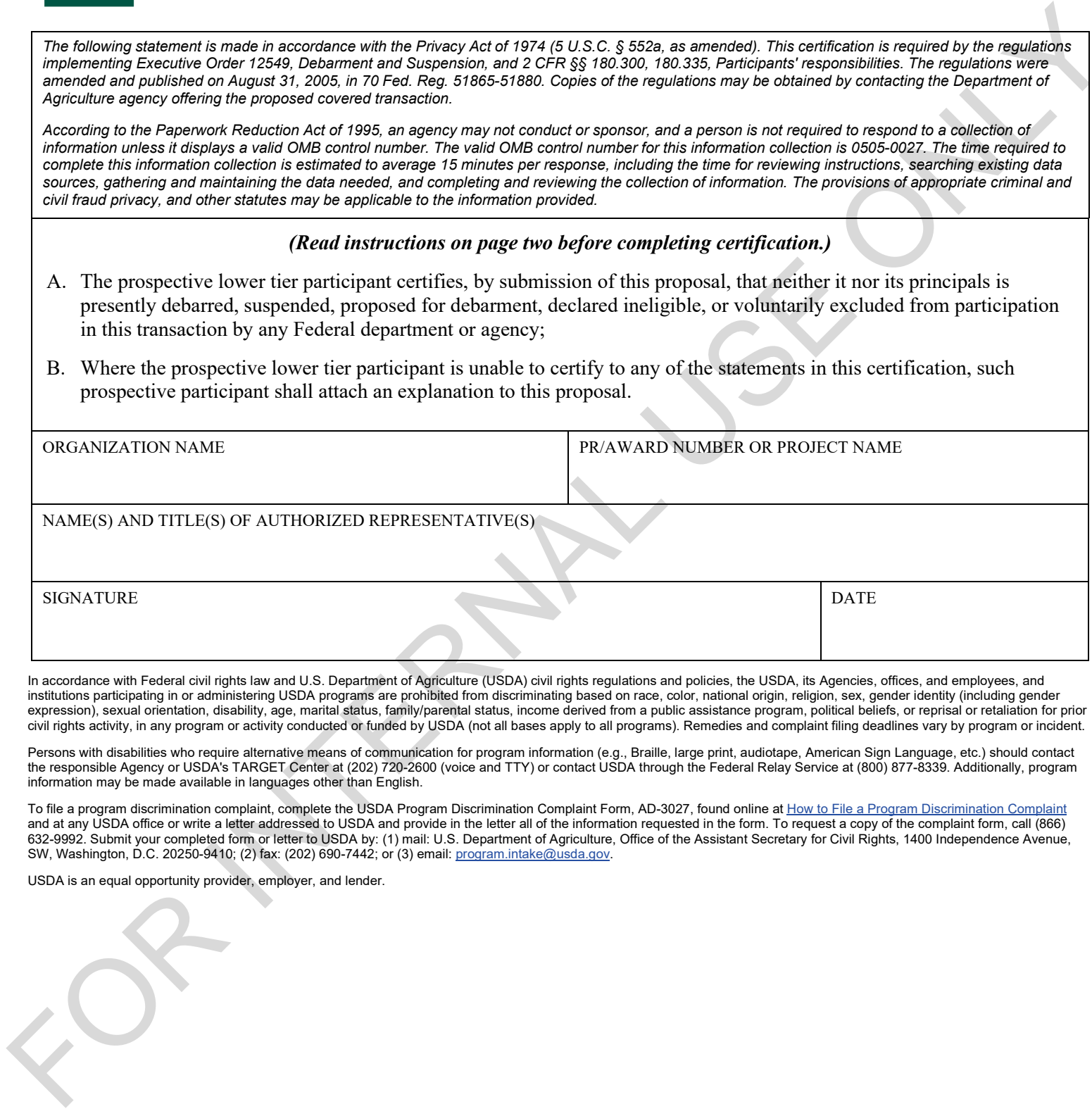
ORGANIZATION NAME	PR/AWARD NUMBER OR PROJECT NAME
NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S)	
SIGNATURE	DATE

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotope, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.



Instructions for Certification

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

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

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

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

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

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

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

(name)

(date)

(title)

QUALIFICATIONS STATEMENT

Prepared by



Issued and Published Jointly by



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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: _____

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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

State 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:

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- 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:

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Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

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. 500 300- Log & Summary of Occupational Injuries & Illnesses for the past 5 years.

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

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

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

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

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

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

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

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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:				
	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:				
	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:				
	Name: Address: Telephone:	Name: Company: Telephone:				

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SCHEDULE C - LIST OF MAJOR EQUIPMENT AVAILABLE

ITEM	PURCHASE DATE	CONDITION	ACQUIRED VALUE

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NOTICE OF AWARD

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's
Address:

TO BIDDER:

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

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

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

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

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

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

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

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

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

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

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

THIS AGREEMENT is by and between _____ (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: replacement of existing watermain.

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by Strand Associates, Inc.[®]

3.02 The Owner has retained Strand Associates, Inc.[®] (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 213 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 230 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such

proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$1,100 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$1,100 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages*

[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 Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

Unit Price Work					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities)					\$

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- B. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$_____.
- C. 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 30th 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. Ninety-five percent of Work completed (with the balance being retainage); and
 - b. Ninety-five 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 98 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 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

[DELETED]

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to ____, inclusive).
 - 2. Performance bond (pages ____ to ____, inclusive).
 - 3. Payment bond (pages ____ to ____, inclusive).
 - 4. Other bonds.

- a. ___ (pages ___ to ___, inclusive).
5. General Conditions (pages ___ to ___, inclusive).
6. Supplementary Conditions (pages ___ to ___, inclusive).
7. Specifications as listed in the table of contents of the Project Manual.
8. Drawings (not attached but incorporated by reference) consisting of ___ sheets with each sheet bearing the following general title: ___ [or] the Drawings listed on the attached sheet index.
9. Addenda (numbers ___ to ___, inclusive).
10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages ___ to ___, inclusive).
11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

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

10.05 Contractor's Certifications

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

10.06 Other Provisions

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

10.07 Hierarchy

- A. In resolving inconsistencies among two or more section of the Contract Documents, precedence shall be given in the following order:

- | | |
|---------|--------------------------|
| First: | WRITTEN AMENDMENTS |
| Second: | AGREEMENT |
| Third: | CHANGE ORDERS |
| Fourth: | ADDENDA |
| Fifth: | SUPPLEMENTARY CONDITIONS |
| Sixth: | GENERAL CONDITIONS |

Seventh: SPECIFICATIONS

Eighth: DRAWINGS

Figure dimensions (numerical) on Drawings shall take precedence over dimensions measured utilizing a scale.

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)

CERTIFICATE OF OWNER’S ATTORNEY AND AGENCY CONCURRENCE

CERTIFICATE OF OWNER’S ATTORNEY

PROJECT NAME: _____

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.

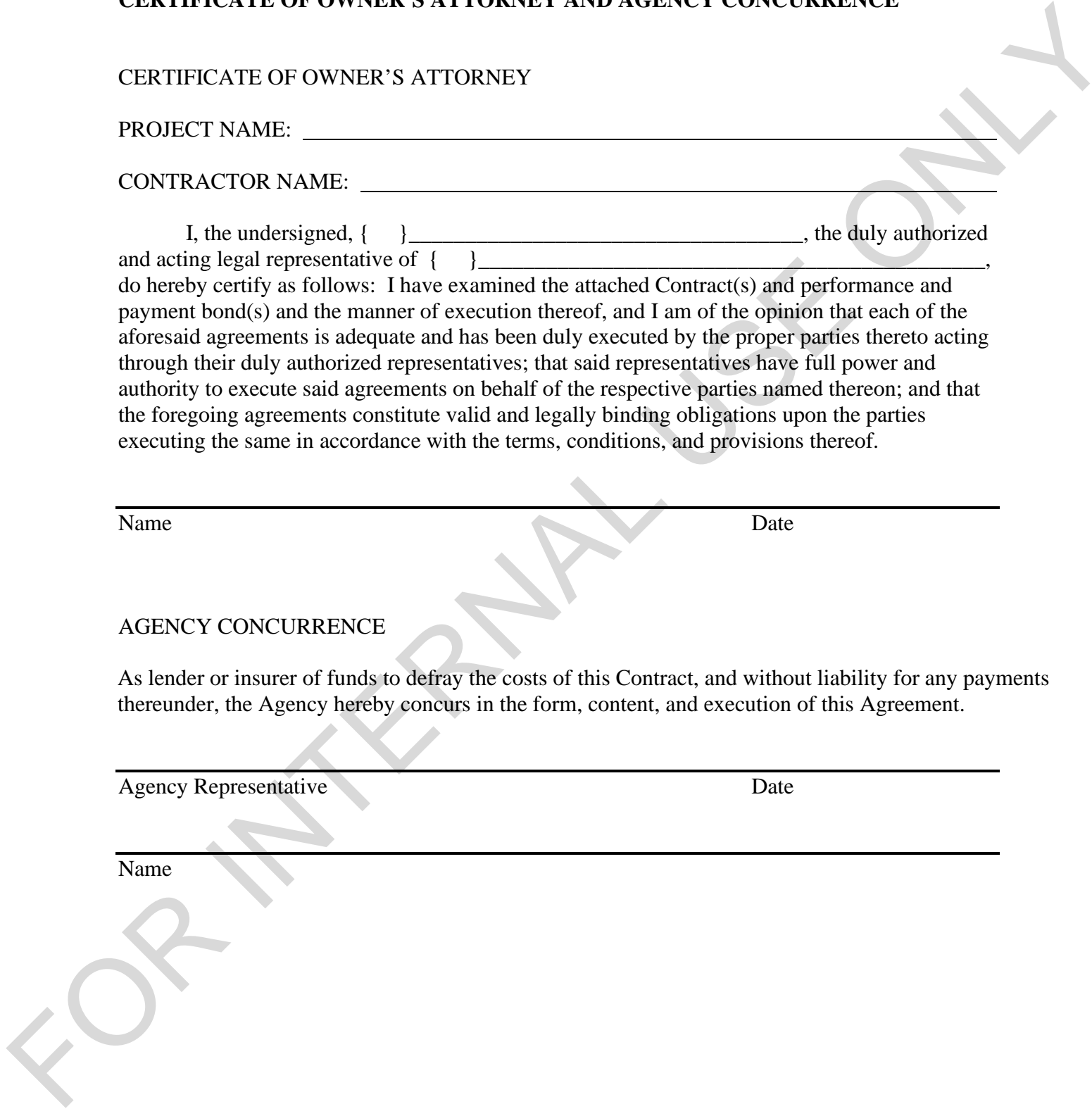
Name Date

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



SECTION 00 55 10

EROSION CONTROL CERTIFICATION

Dated _____

TO OWNER: _____

ADDRESS: _____

PROJECT: _____

OWNER'S CONTRACT NO. _____

CONTRACT FOR _____

I certify under penalty of law that I understand the terms and conditions of the General National Pollutant Discharge Elimination System (NPDES) Permit that authorizes the stormwater discharges associated with industrial activities from the construction site and as may be detailed in the Contract Documents.

I agree to indemnify and hold OWNER harmless from any claims, demands, suits, causes of action, settlements, fines, or judgments and the costs of litigation, including, but not limited to, reasonable attorneys fees and costs of investigation and arising from a condition, obligation, or requirement assumed or to be performed by CONTRACTOR for storm water pollution and erosion control.

Fines and other costs incurred against OWNER for CONTRACTOR's failure to provide the required erosion control practices will be paid by CONTRACTOR.

(CONTRACTOR)

By: _____
(Authorized Signature)

(Title)

END OF SECTION

PERFORMANCE BOND

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: None See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

SURETY

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

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

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

the Owner or its heirs, executors, administrators, successors, and assigns.

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

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

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

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

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction

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

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

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

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

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

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

~~16. Modifications to this Bond are as follows:~~

PAYMENT BOND

CONTRACTOR *(name and address)*:

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

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form: None See Paragraph 18

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

CONTRACTOR AS PRINCIPAL

SURETY

(seal)
Contractor's Name and Corporate Seal

(seal)
Surety's Name and Corporate Seal

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

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

16. Definitions

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

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

6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

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

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

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

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

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

~~18. Modifications to this Bond are as follows:~~

NOTICE TO PROCEED

Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	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 number of days to achieve Substantial Completion is 213, and the number of days to achieve readiness for final payment is 230.

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

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



Endorsed by



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

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

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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FOR INTERNAL USE ONLY

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

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

has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

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

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

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

1.02 Terminology

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

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

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

2.02 *Copies of Documents*

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

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Initial Acceptance of Schedules*

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

2.06 *Electronic Transmittals*

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

computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

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

3.02 *Reference Standards*

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

3.03 *Reporting and Resolving Discrepancies*

- A. *Reporting Discrepancies:*
 - 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict,

error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

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

B. *Resolving Discrepancies:*

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

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

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

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

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

5.01 *Availability of Lands*

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

5.02 *Use of Site and Other Areas*

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

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

by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

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

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

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

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after

becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

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

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

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

6.02 *Insurance—General Provisions*

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

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

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

6.03 *Contractor's Insurance*

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

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

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

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

6.04 *Owner's Liability Insurance*

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

6.05 *Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).

5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

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

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

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

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and

guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and

- 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
 - C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
 - D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
 - E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
 - F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

O. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 *Patent Fees and Royalties*

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

7.08 *Permits*

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

7.09 *Taxes*

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

7.10 *Laws and Regulations*

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

7.11 *Record Documents*

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

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;

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

7.13 *Safety Representative*

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

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or

exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

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

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

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

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

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to

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

2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
 1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.

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

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

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

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

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop

Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

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

8.02 *Coordination*

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

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.

- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

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

9.03 *Furnish Data*

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

9.04 *Pay When Due*

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

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

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

9.06 *Insurance*

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

9.07 *Change Orders*

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

9.08 *Inspections, Tests, and Approvals*

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

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

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

9.11 *Evidence of Financial Arrangements*

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

9.12 *Safety Programs*

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

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

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

or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

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

10.04 *Rejecting Defective Work*

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

10.05 *Shop Drawings, Change Orders and Payments*

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

10.06 *Determinations for Unit Price Work*

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

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

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

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

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

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

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an

adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

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

11.03 *Unauthorized Changes in the Work*

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

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on

the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

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

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

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

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

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

11.08 *Notification to Surety*

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

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim

submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

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

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable

thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes

other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

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

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

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

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

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

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

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

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

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

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

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

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

14.06 *Owner May Stop the Work*

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

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will

include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments:*

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

C. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

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

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

- 1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
- 2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount

remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

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

15.02 *Contractor's Warranty of Title*

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

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

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

15.05 *Final Inspection*

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

15.06 *Final Payment*

- A. *Application for Payment:*
 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of

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

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

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

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

- C. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

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

15.08 *Correction Period*

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

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

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

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

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses,

and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

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

16.04 *Contractor May Stop Work or Terminate*

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

expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

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

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

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

18.02 *Computation of Times*

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages*

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

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

Section 00 73 00

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

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

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

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SC-1.01.A.3. Add the following language to the end of Paragraph 1.01.A.3:

The Application for Payment form to be used on this project is EJCDC C-620 (2013), or RD Form 1924-18.

SC-1.01.A.8. Add the following language to the end of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is EJCDC No. C-941 or RD Form 1924-7. Agency approval is required before Change Orders are effective or eligible for payment.

SC-1.01.A.48. Add the following language to the end of Paragraph 1.01.A.48:

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC-1.01.A.49. Add the following new Paragraph after Paragraph 1.01.A.48:

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.

SC-1.01.A.50. Add the following new Paragraph after Paragraph 1.01.A.49:

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.

SC-1.01.A.51. Add the following new Paragraph after 1.01.A.50:

Manufacturer's Certification letter (Exhibit D) is documentation provided by the manufacturer, supplier, distributor, vendor, fabricator, etc. to various entities stating that the AIS products to be used in the project are produced in the US in accordance with AIS requirements.

SC-1.01.A.52. Add the following new Paragraph after 1.01.A.51:

AIS—refers to requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 and any subsequent statutes mandating domestic preference. "Iron and Steel Products" is defined in Section 1.b.2.

SC-2.02.A. Amend the first sentence of Paragraph 2.02.A. to read as follows:

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.

SC-4.01. Amend the last sentence of Paragraph 4.01.A by striking out the following words:

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

SC-4.05.C.2. Amend Paragraph 4.05.C.2 by striking out the following text: “abnormal weather conditions;” and inserting the following text:

Abnormal Weather Conditions;

SC-7.03. Add the following new paragraph after Paragraph 7.03.C:

D. All iron and steel products must meet AIS requirements.

SC-7.04.A. Amend the third sentence of Paragraph 7.04.A by striking out the following words:

Unless the specification or description contains the following words reading that no like, equivalent, or ‘or-equal’ item is permitted.

SC-7.04.A.1. Amend the last sentence of paragraph a.3 by striking out “and;” and adding a period at the end of the paragraph.

SC-7.04.A.1. Delete Paragraph 7.04.A.1.a.4 in its entirety and insert the following in its place:

[Deleted]

SC-7.04.B. Add the following paragraph at the end of Paragraph 7.04.B:

1. Contractor shall include a Manufacturer’s Certification Letter (Exhibit D) for compliance with AIS requirements in support data, if applicable. In addition, for the Deminimis Waiver, Contractor shall maintain an itemized list of incidental components and ensure that the cost is less than 5% of total materials cost for project; for the Minor Components Waiver, the Contractor shall maintain a list of products to which the minor components waiver applies and the cost of the non-domestically produced component is less than 5% of total materials cost of that product.

SC-7.05. Add the following new paragraph immediately after Paragraph 7.05.A.3.a.3:

4. comply with American Iron and Steel by providing Manufacturer’s Certification (Exhibit D), if applicable.

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

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

SC-7.06.B. Delete Paragraph 7.06.B in its entirety and insert the following in its place:

[Deleted]

SC-7.06.E. Amend the second sentence of Paragraph 7.06.E by striking out “Owner may also require Contractor to retain specific replacements; provided, however, that”.

SC-7.11.A. Add the following language after “written interpretations and clarifications” in the first sentence of Paragraph 7.11.A:

Manufacturer’s Certification Letter (Exhibit D) is documentation provided by the manufacturer, supplier, distributor, vendor, fabricator, etc. to various entities stating that the iron and steel products to be used in the project are produced in the United States in accordance with AIS Requirements.

SC-7.16.A.1.e. Add the following new paragraph immediately after Paragraph 7.16.A.1.d:

- e. obtained Manufacturer’s Certification Letter (Exhibit D) for any item in the submittal subject to AIS requirements and include the Certificate in the submittal.

SC-7.16.D.8. Add the following new paragraph immediately after Paragraph 7.16.D.8:

9. Engineer’s review and approval of Shop Drawings or Sample shall include review of compliance with AIS requirements, as applicable.

SC-7.17.D. Add the following new paragraph immediately after Paragraph 7.17.D:

- E. Contractor shall certify upon Substantial Completion that all Work and Materials has complied with AIS requirements as mandated and any subsequent statutes mandating domestic preference. Contractor shall provide Contractor’s Certification Letter (Exhibit C) to Owner.

SC-10.10.A. Add the following section after Article 10.09 with the title “American Iron & Steel”:

- A. Services required to determine and certify that to the best of the Engineer’s knowledge and belief all iron and steel products referenced in engineering analysis, the plans, Specifications, Bidding Documents, and associated Bid Addenda requiring design revisions are either produced in the United States or are the subject of an approved waiver. Services required to determine the best of the Engineer’s knowledge and belief that approved substitutes, equals, and all iron and steel products proposed in the shop drawings, Change Orders and Partial Payment Estimates are either produced in the US or are the subject of an approved waiver under the Consolidated Appropriations Act of 2017.

SC-11.06.A.1. Modify Paragraph 11.06.A.1 by inserting the following sentence after “within 15 days after the submittal of the Change Proposal.”:

Include supporting data (project name, name of manufacturer, city and state where the product was manufactured, description of product, signature of authorized manufacturer’s representative) in the Manufacturer’s Certification Letter (Exhibit D), as applicable.

SC-11.07.C. Add the following new Paragraph to replace Paragraph 11.07.B:

- B. All Contract Change Orders must be concurred by Agency before they are effective or can be eligible for reimbursement.

SC-13.02.C. Delete Paragraph 13.02.C in its entirety and insert the following in its place:

[Deleted]

SC-14.03.G. Add the following new paragraph immediately after Paragraph 14.03.H:

- I. Installation of Materials that are non-compliant with AIS requirements shall be considered defective work.

SC-15.01.B. Amend the second sentence of Paragraph 15.01.B.1 by striking out the following text: “a bill of sale, invoice, or other.”

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

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

SC-15.01.B.4. Add the following new Paragraph after Paragraph 15.01.B.3:

- 4. The Application for Payment form to be used on this Project is EJCDC No. C-620 or Form RD 1924-18, unless another form is agreed upon by the Engineer, Owner, and Agency. The Agency must approve all Applications for Payment before payment is made. By submitting Materials for payment, Contractor is certifying that the submitted Materials are compliant with AIS requirements. Manufacturer’s Certification letter for Materials satisfy this certification. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

SC-15.01.C.2.d. Add the following Paragraph immediately after Paragraph 15.01.C.2.c:

- d. The materials presented for payment comply with AIS requirements.

SC-15.01.D.1. Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

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 due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-15.01.D.2. Add the following new paragraph immediately after Paragraph 15.01.D.1:

2. An updated AIS Materials List (See Exhibit J) included in these contract documents must be dated and signed and submitted with each pay request prior to payment being authorized. An excel version that will compute all totals can be obtained from the RD State Office that can be used as a working copy.

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

SC-15.03.A. Add the following language to the end of Paragraph 15.03.A:

Services required to determine and certify that to the best of the Contractor's knowledge and belief, all substitutes, equals, and all iron and steel products proposed in the shop drawings, Change Orders, and Partial Payment Estimates, and those installed for the project are either produced in the US or are the subject of an approved waiver. Services required to certify that, to the best of the Contractor's knowledge, all those products installed for the project are either produced in the U.S. or are the subject of an approved waiver.

SC-19. Add Article 19 titled "FEDERAL REQUIREMENTS"

SC-19.01. Add the following language as Paragraph 19.01 with the title "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.

SC-19.02. Add the following section after Article 19.01 with the title "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 F) before Owner submits the executed Contract Documents to Agency for approval.

SC-19.03. Add the following language after Article 19.02.B with the title "Conflict of Interest and Gratuities":

- A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the drawings 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 or other interest or other interest in or a tangible personal benefit from the Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or Subcontractor.

SC-19.04. Add the following language after Article 19.03.A with the title "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.

SC-19.05. Add the following language after Article 19.04 with the title "Small, Minority and Women's Businesses":

- A. Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms. If Contractor intends to let any subcontracts for a portion of the work, Contractor must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps must include:
- (1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
 - (2) Assuring 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 small tasks or quantities to permit maximum participation by small and minority businesses, and women's businesses;
- (4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and
- (5) Using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the US Department of Commerce.

SC-19.06. Add the following after Article 19.05 with the title "Anti-Kickback":

- A. Contractor shall comply with the Copeland Anti-Kickback Act (40 U.S.C 3145) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Work Financed in Whole or in Part by Loans or Grants from 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 he or she is otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC-19.07. Add the following after Article 19.06 with the title "Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended":

- A. Contractor to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act and the Federal Water Pollution Control Act. Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

SC-19.08. Add the following after Article 19.07 with the title "Equal Employment Opportunity":

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

SC-19.09. Add the following after Article 19.08 with the title "Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)":

- A. Contractors that apply or bid for an award exceeding \$100,000 must file the required certification (RD Instruction 1940-Q, Exhibit A-1). The Contractor certifies to the Owner and every subcontractor certifies to the Contractor that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in

connection with obtaining the Contract if it is covered by 31 U.S.C. 1352. The Contractor and every subcontractor must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

SC-19.10. Add the following after Article 19.09 with the title “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 (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, e.g., alluvial soils on NRCS Soil Survey Maps.
- C. Historic Preservation—Any excavation by Contractor that uncovers an historical or archaeological artifact or human remains 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—The following environmental mitigation measures are required on this Project: {NONE}.

SC-19.11. Add the following after Article 19.10 with the title “Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)”:

- A. Where applicable, for contracts awarded by the Owner in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor must compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the

worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

SC-19.12. Add the following after Article 19.11 with the title “Debarment and Suspension (Executive Orders 12549 and 12689)”:

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

SC-19.13. Add the following after Article 19.12 with the title “Procurement of recovered materials”:

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

SC-19.14. Add the following after Article 19.13 with the title “Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017)”:

- A. Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A-Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference applies an AIS requirement to this project. All iron and steel products used in this project must be produced in the US. The term “iron and steel products” is defined in Section 1.b.2. The de minimis and minor components waiver-apply to this contract.

SC-19.15. Add the following after Article 19.14 with the title “Definitions”:

“Assistance recipient” is the entity that receives funding from programs required to comply with AIS requirements in the Consolidated Appropriations Act of 2017 and subsequent statutes mandating domestic preference. This term includes owner and/or applicant.

“Certifications” means the following:

- Manufacturers’ certification is documentation provided by the manufacturer or fabricator to various entities stating that the iron and steel products to be used in the project are produced in the US in accordance with AIS

Requirements. If items are purchased via a supplier, distributor, vendor, etc. vs. direct from the manufacturer or fabricator directly, then the supplier, distributor, vendor, etc. will be responsible for obtaining and providing these certification letters to the parties purchasing the products.

- Engineers' certification is documentation that plans, specifications, and bidding documents comply with AIS.
- Contractors' certification is documentation submitted upon substantial completion of the project that all iron and steel products installed were produced in the US.

“Coating” means a covering that is applied to the surface of an object. If a coating is applied to the external surface of a domestic iron or steel component, and the application takes place outside of the US, said product would be considered a compliant product under the AIS requirements. Any coating processes that are applied to the external surface of iron and steel components that would otherwise be AIS compliant would not disqualify the product from meeting the AIS requirements regardless of where the coating processes occur, provided that final assembly of the product occurs in the US. This exemption only applies to coatings on the external surface of iron and steel components. It does not apply to coatings or linings on internal surfaces of iron and steel products, such as the lining of lined pipes. All manufacturing processes for lined pipes, including the application of pipe lining, must occur in the United States for the product to be compliant with AIS requirements.

“Contractor” is the individual or entity with which the applicant has contracted (or is expected to) to perform construction services (or for water and waste projects funded by the programs subject to AIS requirements). This includes bidders and/or contractors that have received an award from the applicant and any party having a direct contractual relationship with the owner/applicant. A general contractor is often referred to as the prime contractor.

“Construction materials” are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered “structural steel”.

Note: Mechanical and electrical components, equipment and systems are not considered construction materials. See definition of mechanical and electrical equipment.

“De minimis incidental components” are various miscellaneous low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. Examples of incidental components could include small washers, screws, fasteners (such as “off the shelf” nuts and bolts), miscellaneous wire, corner bead, ancillary tube, signage, trash bins, door hardware etc.

Costs for such de minimis incidental components cumulatively may comprise no more than a total of five percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed one percent of the total cost of the materials used in and incorporated into a project.

“Engineer” is an individual or entity with which the owner has contracted to perform engineering/architectural services for water and waste projects funded by the programs subject to AIS requirements).

“Iron and steel products” are defined as the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials. Only items on the above list made primarily of iron or steel, permanently incorporated into the project must be produced in the US. For example trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. Iron or Steel.

“Manufacturers” meaning a supplier, fabricator, distributor, materialman, or vendor is an entity with which the applicant, general contractor or with any subcontractor has contracted to furnish materials or equipment to be incorporated in the project by the applicant, contractor or a subcontractor.

“Manufacturing processes” are processes such as melting, refining, forming, rolling, drawing, finishing, and fabricating. Further, if a domestic iron and steel product is taken out of the United States for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-U.S. sources.

“Mechanical equipment” is typically that which has motorized parts and/or is powered by a motor. “Electrical equipment” is typically any machine powered by electricity and includes components that are part of the electrical distribution system. AIS does apply to mechanical equipment.

“Minor components” are components within an iron and/or steel product otherwise compliant with the American Iron and Steel requirements. This is different from the de minimis definition where de minimis pertains to the entire project and the minor component definition pertains to a single product. This waiver, would allow non-domestically produced miscellaneous minor components comprising up to five percent of the total material cost of an otherwise domestically produced iron and steel product to be used. However, unless a separate waiver for a product has been

approved, all other iron and steel components in said product must still meet the AIS requirements. This waiver does not exempt the whole product from the AIS requirements. Only minor components within said product and the iron or steel components of the product must be produced domestically. Valves and hydrants are also subject to the cost ceiling requirements described here. Examples of minor components could include items such pins and springs in valves/hydrants, bands/straps in couplings, and other low cost items such as small fasteners etc.

“Municipal castings” are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and solid waste infrastructure.

“National Office” refers to the office responsible for the oversight and administration of the program nationally. The National Office sets policy, develops program regulations, and provides training and technical assistance to help the state offices administer the program. The National Office is located in Washington, D.C.

“Owner” is the individual or entity with which the general contractor has contracted regarding the work, and which has agreed to pay the general contractor for the performance of the work, pursuant to the terms of the contract for water and waste projects funded by the programs subject to AIS requirements. For the purpose of this Bulletin, this term is synonymous with the term “applicant” as defined in 7 CFR 1780.7 (a) (1), (2) and (3) and is an entity receiving financial assistance from the programs subject to the AIS requirements.

“Pig Iron” is a product of iron ore smelting in a blast furnace. It is made from molten iron, which has been cast in the shape of “pigs” as it comes from the blast furnace.

Direct reduced iron is produced from iron ore, pellets or fines which are reduced in a solid state using natural gas or another reductant. Pig iron and direct reduced iron are used by the manufacturing industry to supplement their iron and steel scrap material feed source to achieve required composition to achieve the quality required by the industry.

This waiver permits the use of pig iron and direct reduced iron manufactured outside of the United States in domestic manufacturing processes for iron and steel production that are subsequently used in iron and steel products for water and waste projects funded by WEP. Approval of this waiver is supported by Section 746 (b)(2), which allows for a waiver in cases where “...iron and steel products are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality.” The effective date of this waiver will be retroactive to 5 May 2017.

“Primarily iron or steel” is defined as a product made of greater than 50 percent iron or steel, measured by cost. The cost should be based on the material costs. An

exception to this definition is reinforced precast concrete (see Definitions). All technical specifications and applicable industry standards (e.g. NIST, NSF, AWWA) must be met. If a product is determined to be less than 50 percent iron and steel, the AIS requirements do not apply.

For example, the cost of a fire hydrant includes:

- (1) The cost of materials used for the iron portion of a fire hydrant (e.g. bonnet, body and shoe); and
- (2) The cost to pour and cast to create those components (e.g. labor and energy).

Not included in the cost are:

- (1) The additional material costs for the non-iron and steel internal workings of the hydrant (e.g. stem, coupling, valve, seals, etc.); and
- (2) The cost to assemble the internal workings into the hydrant body.

“Produced in the United States” means that the production in the United States of the iron or steel products used in the project requires that all manufacturing processes must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives.

“Project” is the total undertaking to be accomplished for the applicant by consulting engineers, general contractors, and others, including the planning, study, design, construction, testing, commissioning, and start-up, and of which the work to be performed under the contract is a part. A project includes all activity that an applicant is undertaking to be financed in whole or part by programs subject to AIS requirements. The intentional splitting of projects into separate and smaller contracts or obligations to avoid AIS requirements is prohibited.

“Reinforced Precast Concrete” may not consist of at least 50 percent iron or steel, but the reinforcing bar and wire must be produced in the United States and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in the United States. The cement and other raw materials used in concrete production are not required to be of domestic origin. If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered to be a construction material and must be produced in the United States.

“Stainless steel Nuts and Bolts” are defined as steel nuts and bolts that are used in bolting-type pipe couplings, restraints, joints, flanges and repair saddles.

This waiver permits the purchase and use of stainless steel nuts and bolts of unknown or nondomestic origin in bolting-type pipe couplings, restraints, joints, and repair saddles for water and waste projects funded by WEP. Approval of this stainless steel nuts and bolts waiver is supported by Section 746 (b)(2), which allows for a waiver in cases where “...iron and steel products are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality.”

The effective date of this waiver will be retroactive to 5 May 2017. This waiver will expire on 24 February 2020, concurrent with the EPS's national short-term waiver for stainless steel nuts and bolts. Concurrence of the content and sunset dates of the two agencies' waivers will facilitate continued coordination between the two agencies on co-funded projects, while providing certainty to domestic manufacturers to enable plans for ramping up production.

"Steel" means an alloy that includes at least 50 percent iron, between 0.02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel, and other specialty steels.

"Structural steel" is rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-flange shapes, standard I-beams, channels, angles, tees, and zees. Other shapes include but are not limited to, H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

"United States" means each of the several states, the District of Columbia, and each Federally Recognized Indian Tribe.

Contractor's Application for Payment No. _____

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

**Application For Payment
Change Order Summary**

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

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

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

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

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

5. RETAINAGE:

a. X _____ Work Completed..... \$ _____

b. X _____ Stored Material..... \$ _____

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

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

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

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

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

Contractor's Certification

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

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and

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

Contractor Signature

By: _____ Date: _____

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

is recommended by: _____ (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)

CONTRACTOR'S CERTIFICATION LETTER

DATE:

**RE: APPLICANT
PROJECT NAME
CONTRACT NUMBER**

I hereby certify that, to the best of my knowledge and belief, all iron and steel products installed for this project by my company and by any and all subcontractors and manufacturers my company has contracted with for this project, comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 and any subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

Name of Construction Company (Print)

By Authorized Representative (Signature)

Title

This certification is to be submitted upon completion of the project to the project engineer.

MANUFACTURER'S CERTIFICATION LETTER

Date:

Company Name:

Company Address:

Subject: AIS Step Certification for Project (X), Owner's Name, and Contract Number

I, (company representative), certify that the (melting, bending, galvanizing, cutting, etc.) processes for (manufacturing or fabricating) the following products and/or material shipped or provided for the subject project is in full compliance with the mandated AIS requirements.

Item, Products and/or Materials, and location of delivery (City, State)

- 1.
- 2.
- 3.

Such process for AIS took place in the following location:

City, State

This certification is to be submitted upon request to interested parties (e.g. municipalities, consulting engineers, general contractors, etc.)

If any of the above compliance statements change while providing materials to this project, please immediately notify the person(s) who is requesting to use your product(s).

Authorized Company Representative

(Note: Authorized signature shall be manufacturer's representative and not the materials distributor or supplier)

EXAMPLES OF MUNICIPAL CASTINGS *(includes but not limited to):*

Access Hatches
Ballast Screen
Benches (Iron or Steel)
Bollards
Cast Bases
Cast Iron Hinged Hatches, Square and Rectangular
Cast Iron Riser Rings
Catch Basin Inlet
Cleanout/Monument Boxes
Construction Covers and Frames
Curb Corner Guards
Curb Openings
Detectable Warning Plates
Downspout Shoes (Boot, Inlet)
Drainage Grates, Frames and Curb Inlets
Inlets
Junction Boxes
Lampposts
Manhole Covers, Rings and Frames, Risers
Meter Boxes
Service Boxes
Steel Hinged Hatches, Square and Rectangular
Steel Riser Rings
Trash Receptacles
Tree Grates
Tree Guards
Trench Grates
Valve Boxes, Covers and Risers

EXAMPLES OF CONSTRUCTION MATERIALS (included but not limited to)

Wire rod, bar, angles
Concrete reinforcing bar, wire, wire cloth
Wire rope and cables
Tubing
Framing
Joists
Trusses
Fasteners (i.e., nuts and bolts)
Welding rods
Decking
Grating
Railings
Stairs
Access ramps
Fire escapes
Ladders
Wall panels
Dome structures
Roofing
Ductwork
Surface drains
Cable hanging systems
Manhole steps
Fencing and fence tubing
Guardrails
Doors
Stationary screens

FOR INTERNAL USE ONLY

EXAMPLES OF NON-CONSTRUCTION MATERIALS- (includes but not limited to):

(Note: includes appurtenances necessary for their intended use and operation and are not subject to AIS requirements)

Pumps
Motors
Gear Reducers
Drives (including variable frequency drives (VFD's)
Electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators).
Mixers
Gates (e.g. sluice and slide gates)
Motorized screens (such as traveling screens)
Blowers/aeration equipment
Compressors
Meters (flow and water meters)
Sensors
Controls and switches
Supervisory control data acquisition (SCADA)
Membrane filtration systems (includes RO package plants)
Filters
Clarifier arms and clarifier mechanisms
Rakes
Grinders
Disinfection systems
Presses (including belt presses)
Conveyors
Cranes
HVAC (excluding network)
Water heaters
Heat exchangers
Generators
Cabinetry and housing (such as electrical boxes/enclosures)
Lighting fixtures
Electrical conduit
Emergency life systems
Metal office furniture
Shelving
Laboratory equipment
Analytical instrumentation
Dewatering equipment

INFORMATIONAL CHECKLIST FOR PROJECT SPECIFIC WAIVER REQUEST

Please reference the specifications of the product.

Information	<input type="checkbox"/>	Note
<p>General</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> — Description of the foreign and domestic construction materials — Unit of measure — Quantity — Price — Date that product is needed (e.g. time of delivery or availability) — Location of the construction project — Name and address of the proposed supplier — A detailed justification for the use of foreign construction materials • Waiver request was submitted according to the instructions in the memorandum • Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime 		
<p>Cost Waiver Requests</p> <ul style="list-style-type: none"> • Waiver request includes the following information: <ul style="list-style-type: none"> — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products (Exhibit J) — Relevant excerpts from the bid documents used by the contractors to complete the comparison — Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers 		
<p>Availability Waiver Requests</p> <ul style="list-style-type: none"> • Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: <ul style="list-style-type: none"> — Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials — Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers. — Date that product is needed (e.g. time of delivery or availability) to provide justification — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials • Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought • Has the State received other waiver requests for the materials described in this waiver request, for comparable projects? 		

AIS Materials Tracking

Project Name: _____
 Contract Number: _____

Engineer:
 Name and Title: _____
 Signature and Date: _____

Contractor:
 Name and Title: _____
 Signature and Date: _____

Total Cost of Materials as Specified in the Bid Tabs:	0
Allowable Total De Minimus Amount (5% of all materials)	0
Total Cost of De Minimus Items	0
Remaining Amount Allowed for Future De Minimus Items	0

Note 1: No single De Minimus item can be greater than 1% of total materials cost.

Note 2: All listed qualifying AIS must have a manufacturer's certification unless a waiver is obtained.

Bid Item No.	Detailed Description of Qualifying or De Minimus Material	Quantity Delivered	Date Delivered	Manufacturer's Name City, State of Production	Certification Date	De Minimus Only	
						Cost per Item	Total Item Cost
1							
2							
3							

American Iron and Steel (AIS) Qualifying and De Minimus Materials List
 Note: This form must be updated and submitted with every pay estimate.

Project Name: ABC Waterline Extension
 Contract Number: Contract #2

Engineer:
 Name & Title: John Doe
 Signature & Date: _____

Contractor:
 Name & Title: John Smith
 Signature & Date: _____

Total Cost of All Materials as Specified in the Bid Tabs:	\$5,000,000.00
Allowable Total De Minimus Amount (5% of all materials)	\$250,000.00
Total Cost of De Minimus Items	\$587.88
Remaining Amount Allowed for Future De Minimus Items	\$249,412.12

Note 1: No single De Minimus item can be more than 1% of the total material cost.
Note 2: All listed AIS Qualifying Materials must have a manufacturer's certification unless a waiver is obtained.

No.	Bid Item No.	Detailed Description of Qualifying or De Minimus Material	Quantity Delivered	Date Delivered	Manufacturer's Name	Date of Manufacturer's Certification	Cost Per Item	Total Item Cost
1	1	Flange bolts	4	12/21/2014	Acme	N/A	\$75.00	\$300.00
2	3	Valve Box covers	300	12/23/2014	Acme	12/5/2014		
3	6	Rebar tie wire	12	12/29/2014	Wire-R-Us	N/A	\$23.99	\$287.88
4	7	12" DIP Pipe	1000	12/30/2014	Ciow	12/15/2014		
5	8	12" Gate Valve	7	1/3/2015	Acme	12/20/2014		
6								
7								
8								
9								
10								
11								
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CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Owner's Contract No.:
Contractor:	Contractor's Project No.:
Engineer:	Engineer's Project No.:
Project:	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:

- Lump Sum Unit Price
- Cost of the Work 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: _____

Date of Issuance:

Effective Date:

Owner:

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

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

Description:

Attachments: *[List documents supporting change]*

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

RECOMMENDED:

ACCEPTED:

ACCEPTED:

By: _____
Engineer (if required)

By: _____
Owner (Authorized Signature)

By: _____
Contractor (Authorized Signature)

Title: _____
Date: _____

Title: _____
Date: _____

Title: _____
Date: _____

Approved by Funding Agency (if applicable)

By: _____
Title: _____

Date: _____

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: _____ By: _____
Engineer (Authorized Signature) Contractor (Authorized Signature)
Title: _____ Title: _____
Date: _____ Date: _____

Copy to: Owner

Section 00 80 10

Supplemental Supplementary Conditions

A. These Supplemental Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

B. When conflicts exist between Supplementary Conditions and Supplemental Supplementary Conditions, the Supplemental Supplementary Conditions control.

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

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

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SC-1.01.A.8 Change Order

Insert a comma and the word “Engineer” immediately after the word “Contractor” in this definition.

SC-1.01.A.18 Drawings

Add the following to the end of Paragraph 1.01.A.18:

The following Drawings are part of the Contract Documents:

Drawings titled “Contract 14-Distribution System Improvement Projects, Contract 14-2020, Lake Village Water Association,” Sheets No. 1 through No. 60, prepared by Strand Associates, Inc.® and Drawings listed in the table of contents that are bound at the back of these Specifications.

Electronic files were provided for the convenience of Contractor. The data on which CONTRACTOR may rely is limited to the paper copy.

SC-1.01.A.48 Work Change Directive

Amend the phrase “signed by Owner” in the first sentence of Paragraph 1.01.A.48 to read as follows:

“signed by Owner and Contractor.”

SC-1.01.A.53 Request for Information

Add the following new paragraph immediately after Paragraph 1.01.A.52:

53. Request for Information:

Written request submitted by Contractor to Engineer on a form supplied by Engineer requesting clarification, interpretation, or additional information pertaining to Contract Documents.

SC-2.01 Delivery of Bonds and Evidence of Insurance

Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:

B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

SC-2.03 Before Starting Construction

Add the following subparagraph to Paragraph 2.03:

4. a proposed listing of subcontractors and major material and equipment suppliers. The list shall include any proposed substitutions in accordance with Paragraph 7.05.

SC-2.03, 2.04, 2.05 Schedules and Conferences

Add the following language to the end of Paragraph 2.05.A.3:

The Bid will be considered the Schedule of Values of the Work required by the General Conditions.

SC-2.05 Initial Acceptance of Schedules

Add the following language to the end of Paragraph 2.05.A.2:

The schedule for shop drawings shall show all submittals complete before 50% of completion of the Work and the schedule for maintenance manuals shall show all submittals complete before 75% of completion of the Work.

Add the following new paragraph immediately after Paragraph 2.05.A:

B. The times included in this paragraph apply to the preliminary schedules. See Division 01 for other submittal and time requirements for the construction progress schedule and submittal schedule.

SC-3.03 Reporting Discrepancies

Add the following language at the end of Paragraph 3.03.A:

4. Contractor shall report apparent discrepancies to Engineer using a Request for Information form on a form supplied by Engineer. The Request for Information form shall:

- a. be submitted by Contractor only;
- b. be legible and complete;
- c. not be used for the purposes of only confirming or verifying issues; and,
- d. be prioritized by Contractor in the event that multiple Requests for Information are outstanding.

Requests for Information that are not in conformance with the requirements above shall be returned to Contractor without response.

5. Contractor shall not be relieved of its responsibility to coordinate the Work to prevent adverse impacts to Contractor's Project Schedule while submitting Requests for Information.

6. If Contractor believes the Scope of Work included in the Request for Information has a cost and/or time impact, Contractor should submit a claim in accordance with Article 12 of these General Conditions.

7. If Contractor proceeds with work when Contractor had actual knowledge or should have known that a conflict, error, ambiguity, or discrepancy existed as indicated above, correction of work constructed without such notification to Engineer shall be at Contractor's expense, (except in an emergency as authorized by Paragraph 7.15.A).

SC-3.04 Requirements of the Contract Documents

Delete Paragraph 3.04.C in its entirety.

SC-4.03 Reference Points

Add the following new paragraph immediately after Paragraph 4.03.A:

B. Contractor is referred to the General Requirements for additional requirements for laying out the work.

SC-5.03 Subsurface and Physical Conditions

Add the following new paragraph(s) immediately after Paragraph 5.03.B:

C. No reports of explorations or tests of subsurface conditions at or adjacent to the Site are known to Owner. Contractor shall conduct its own personal investigation to determine conditions at the site which may affect the Work, including compliance with OSHA excavation and trenching requirements.

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

1. Drawings dated 1969, prepared by G. Reynolds Watkins Consulting Engineers, of Lexington, KY, titled: Water Distribution System, for Lake Village Water Association, consisting of 34 sheets numbered 1 to 34, inclusive.

a. None of the contents of such drawings is Technical Data on whose accuracy Contractor may rely.

E. Contractor may examine copies of reports and drawings identified in SC 5.03.D that were not included with the Bidding Documents and Lake Village Water Association during regular business hours.

SC-5.05 Underground Facilities

Add the following paragraph immediately after Paragraph 5.05.E:

F. Contractor is referred to the General Requirements for requirements for keeping records of Underground Facilities and allowing facility owners to inspect.

SC-5.06 Hazardous Environmental Conditions

Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

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

B. Not Used.

SC-6.01 Performance and Payment Bonds

Add the following new paragraphs immediately after Paragraph 6.01.F:

G. The forms of the performance and payment Bonds attached hereto shall be used for the Contract. Note instructions thereon as to the form applicable. Each form contemplates one corporate surety only. In case co-sureties or individual sureties will be furnished, proper forms therefore shall be obtained. Besides the stipulations of Paragraphs 6.01 through 6.03, the surety on the Bonds shall provide a certificate indicating

surety is licensed to underwrite contracts in the jurisdiction of the project location which shall be attached to the Bonds.

H. Bonds shall be placed with surety with a Best's rating of no less than A++.

SC-6.03 Contractor's Insurance

Add the following to the end of Paragraph 6.03.C.7:

All additional insureds shall be endorsed on the policy as required in Paragraph 6.03.C.7.

Delete Paragraph 6.03.C.8 in its entirety and add the following new paragraphs immediately after Paragraph 6.03.C.7:

8. Insurance certificates for commercial general, automobile, and umbrella shall specifically indicate by name the additional insureds which are to include Owner and Engineer as well as other persons or entities so identified. Certificates shall be Acord 25-S or equivalent.

9. Endorsements or General Liability policy shall not exclude supervisory or inspection services.

Add the following new language to the end of Paragraph 6.03.D:

Contractor shall also provide an Additional Insured Endorsement for the automobile policy. Endorsement form shall be CA 20 48, or equal.

Add the following new language to the end of Paragraph 6.03.G:

Contractor shall provide an executed endorsement form GC 20 01 04 13, or equal, supporting this requirement.

Change in Paragraph 6.03.I.3 the phrase "materially changed" to read "materially changed with respect to coverage on the project."

Add the following new paragraph immediately after Paragraph 6.03.I.5:

6. Include a Waiver of Subrogation: Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall provide a waiver of subrogation covering Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions. Contractor shall obtain all necessary endorsements to support these requirements. Endorsement shall be CG 24 04 05 09, or equal.

Delete Paragraph 6.03.J in its entirety and insert the following new paragraph in its place:

J. The stated limits of Paragraphs 6.03.K.1, 6.03.K.2, and 6.03.K.3 can be obtained through individual policies or in conjunction with an umbrella policy (pay on behalf form) to arrive at the total limits requested.

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

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

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

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Employer's Liability:	
Bodily injury, each accident	\$ <u>1,000,000</u>
Bodily injury by disease, each employee	\$ <u>500,000</u>
Bodily injury/disease aggregate	\$ <u>1,000,000</u>
Foreign voluntary worker compensation	<u>Statutory</u>

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

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

General Aggregate Limits specified above shall apply separately to this project by attachment of:

"Amendment of Limits of Insurance-Designated Location(s) General Aggregate Limit Endorsement (ISO Form No. CG 25040509) or "Designated Construction Project(s) General Aggregate Limit" Endorsement (ISO Form CG 25030509) or equivalent endorsement coverage.

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

Bodily Injury:	
Each person	\$ <u>500,000</u>

	Bodily Injury:		
	Each accident	\$	<u>1,000,000</u>
	Property Damage:		
	Each accident	\$	<u>500,000</u>
	or		
	Combined Single Limit of	\$	<u>1,000,000</u>
4.	Excess or Umbrella Liability:		
	Per Occurrence	\$	<u>1,000,000</u>
	General Aggregate	\$	<u>1,000,000</u>
5.	Contractor's Pollution Liability:		
	Each Occurrence	\$	<u>NA</u>
	General Aggregate	\$	<u>NA</u>

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

Contractor's Pollution Liability coverage shall include coverage for fungus, mold, and bacteria.

6. General Liability, Automobile Liability, and Umbrella Liability shall include coverage for mental anguish, and punitive damages.

SC-6.05.A Property Insurance

Delete from the first sentence of Paragraph 6.05.A.2, the phrase "All-risk" policy form and insert the following in its place:

"Cause of Loss-Special Form"

Delete from the first sentence of Paragraph 6.05.A.2, the phrase "(other than caused by flood)" and insert the following in its place:

"(including that caused by flood and hydrostatic pressure)"

Delete Paragraph 6.05.A.10 and insert the following in its place:

10. Not used.

Delete Paragraph 6.05.A.12 and insert the following in its place:

12. Not used.

SC-7.02.B Labor; Working Hours

Add the following new paragraph immediately after Paragraph 7.02.B:

C. See the General Requirements for special requirements concerning the Work sequence and waterline shutdowns.

SC-7.03.B Materials and Equipment Warranty

Add the following to the end of Paragraph 7.03.B:

Suppliers shall be deemed to impliedly warrant that their products and all component materials incorporated into them are suitable and fit for the intended use of such products and shall be free from defect in material, workmanship or design, such warranty to run to the benefit of Owner and Engineer. The foregoing applies whether the products or their component materials are specified in the Contract Documents or are of Supplier's design.

SC-7.08 Permits

Delete last sentence of Paragraph 7.08.A and add the following in its place:

See General Requirements and technical specification sections for utility charge provisions.

Add Paragraph 7.08.B as follows:

B. See General Requirements for additional permit information.

SC-7.09 Taxes

Add the following new paragraph immediately after Paragraph 7.08.A:

B. Fees and Licenses—Contractor shall comply with Mercer/Boyle County ordinances relating to Occupational License Fees, Business Licenses, payroll, and net profits, taxes and any other ordinances which may apply to the Work.

B. Contractor shall have City of Burgin business license prior to conducting work in the City.

SC-7.10 Laws and Regulations

Add the following new paragraphs immediately after Paragraph 7.10.C:

D. Kickback Statutes—Contractor shall comply with the requirements of KRS 45A.455 with respect to gratuities and kickbacks among other matters.

E. Campaign Finance Disclosure–Contractor shall comply with requirements of KRS 45A.395 with respect to campaign finance laws.

F. Labor Law Disclosures–Contractor shall comply with requirements of KRS 45A.343 with respect to labor law disclosure.

G. Payment Bond for Wages Due–Contractor, whether a corporation, partnership, or individual, who have not been doing business in the State of Kentucky for five consecutive years, shall comply with KRS 337.200 which requires a Performance Bond to assure payment of wages.

SC-7.11 Record Documents

In Paragraph 7.11.A delete last sentence and insert the following:

Upon completion of the Work, these record documents, samples, and shop drawings shall be delivered by Contractor to Owner.

SC-7.13 Competent Person

Add the following new paragraph immediately after Paragraph 7.13.A:

B. Contractor shall keep at the Site at all times during the progress of the Work a competent person to comply with OSHA trenching and excavation requirements. The competent person shall be one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

SC-7.16 Shop Drawings

Add the following new paragraphs immediately after Paragraph 7.16.E:

F. Contractor shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three submittals. Engineer will record Engineer’s time for reviewing subsequent submittals of Shop Drawings, samples or other items requiring approval and Contractor shall reimburse Owner for Engineer’s charges for such time.

G. In the event that Contractor requests a substitution for a previously approved item, Contractor shall reimburse Owner for Engineer’s charges for its review time unless the need for such change is beyond the control of Contractor.

SC-7.17 Contractor’s General Warranty and Guarantee

Add the following new paragraph immediately after Paragraph 7.17.D:

E. At a minimum, Contractor’s general warranty shall extend throughout the correction period as defined in Paragraph 15.08.

SC-7.18 Indemnification

Add the following to the end of Paragraph 7.18.A:

In addition, Contractor shall indemnify, hold harmless, and pay for the defense of Owner and Engineer from and against claims, losses, or damages in regard to any act or failure to act by Owner or Engineer in connection with general supervision, inspection and/or coordination of Contractor's operations.

Contractor shall, at its own expense, appear, defend, and pay all fees of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith; and, if any judgments shall be rendered against any individual or entity indemnified hereunder in any such action, Contractor shall, at its own expense, satisfy and discharge same. Contractor expressly understands and agrees that any Letter of Credit or insurance protection required by the Contract, or otherwise provided by Contractor, shall in no way limit the responsibility to indemnify, keep and, save harmless, and defend any individual or entity indemnified hereunder as herein provided.

Delete Paragraph 7.18.C.1 and 7.18.C.2. Insert new Paragraphs 7.18.C.1 and D:

1. the preparation of Drawings, Specifications, or Property Surveys.

D. For any matter for which Owner and Engineer are indemnified under Paragraph 7.18.A, Contractor shall pay for Owner's and Engineer's reasonable defense, 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 or awards until Owner or Engineer are found negligent. If Owner or Engineer are found negligent, Owner or Engineer shall reimburse Contractor for the prorata extent of Owner's or Engineer's negligence for the cost of Owner's or Engineer's reasonable defense.

SC-7.19 Delegation of Professional Design Services

Add the following new paragraphs immediately after Paragraph 7.19.E:

F. The design professional providing the design calculations and design drawings shall be licensed in the State of the Project.

G. The design calculation and design drawings are not shop drawings, but shall be submitted to ENGINEER separately along with the required shop drawings for the system, material, or equipment specified. These calculations will be forwarded to OWNER for their records.

SC-10.03 Project Representative

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

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.

SC-11.01 Amending the Contract Documents; Changes in the Work

Delete Paragraph 11.01.A.1.b in its entirety.

SC-11.02 Owner-Authorized Changes in the Work

Amend the second sentence in Paragraph 11.02.A to read as follows:

Such changes shall be supported by Engineer's recommendation.

SC-11.04 Change of Contract Price

Add the following sentence at the end of Paragraph 11.04.B.2:

Any overhead and profit allowance for lump sum work shall be in accordance with Paragraph 11.04.C.2. unless Owner and Contractor agree that these allowances are not appropriate for the Work involved.

SC-11.06.B Change Proposals

Delete Paragraph 11.06.B in its entirety.

SC-11.07 Execution of Change Orders

Delete Paragraphs 11.07.A and 11.07.B in their entirety and insert the following in their place:

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

1. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of 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;

2. Changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. Changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 12.01; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 4.04.B.

SC-11.08 Notification to Surety

Add the following new paragraphs immediately after Paragraph 11.08.A:

B. Contractor shall be responsible for notifying the surety of any assignment, modification, or change of the Contract, change in the Work covered thereby, or extension of time for the completion of the project.

C. Failure to provide notice to the surety of any such change shall not exonerate the surety from its obligations under the bond.

SC-12.01.A Claims Process

Insert the following immediately after “Claims Process” in Paragraph 12.01.A:

All Claims, except those waived pursuant to Paragraph 15.07, shall be referred to Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

Delete Paragraph 12.01.A.3 in its entirety.

SC-13.03 Unit Price Work

Delete Paragraph 13.03.E in its entirety and insert the following in its place:

E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. If the Bid price of a particular item of Unit Price Work amounts to 15% or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 25% from the estimated quantity of such item indicated in the Agreement; and

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

3. If Contractor believes that it has incurred additional expense as a result thereof; or

4. If Owner believes that the quantity variation entitles it to an adjustment in the unit price,

either Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

SC-14.02.A Tests and Inspections

Add the following to the beginning of Paragraph 14.02.A:

All Work is subject to testing to indicate compliance with Contract Document requirements. Duplicate copies of test results of all tests required shall be submitted to Engineer. Tests and inspection of work may be conducted by Owner or an independent laboratory employed by Owner. Tests may also be performed in the field by Engineer as a basis for acceptance of the Work.

Add the following to the end of Paragraph 14.02.A:

Samples required for testing shall be furnished by Contractor at no cost to Owner. In the event that completed Work does not conform to specification requirements during the initial test, the Work shall be corrected and retested for conformance. The entire cost of retesting completed Work shall be borne by Contractor. This shall include the extra cost for inspection to Owner which will be deducted from the final amount due Contractor.

SC-15.01.B Applications for Progress Payment

Add the following paragraph after Paragraph 15.01.B.4:

5. Contractor shall submit with each pay request Contractor's partial waiver of lien for the full amount of the requested payment. Beginning with the second pay request, and with each succeeding pay request, Contractor shall submit partial waivers of lien for each Subcontractor and Supplier showing that the amount paid to date to each is at least equivalent to the total value of Subcontractor's or Supplier's work, less retainage, included on the previous pay request. Contractor shall submit with each pay request a signed Waiver of Lien Log clearly documenting the following:

- a. The names of all Subcontractors/Suppliers on the project.
- b. Contract amounts for each Subcontractor/Supplier.
- c. Amount paid to date to each Subcontractor/Supplier.

- d. Lien waivers provided with current pay application for previous month's payments.
 - e. Amount to be paid to each Subcontractor/Supplier included in the pending pay request.
 - f. Remaining balance for each Subcontractor/Supplier.
6. Contractor shall submit one original and one copy on 8-1/2 by 11 paper of each lien waiver submitted.
 7. Contractor shall submit five copies of each pay request for approval.
 8. No advanced payment for shop drawing preparation will be made. Shop drawing costs will be paid when equipment and materials are delivered and suitably stored on the site.
 9. All stored equipment and materials for which payment is requested shall have two copies of invoices included with the pay request. Equipment shall be identified thoroughly on the invoices, including serial numbers.
 10. Payment for the stored equipment and material which are on the site shall not exceed the invoiced amount for each item, less the Contract retainage. The overhead and profit for the stored items shall not be invoiced until the item is installed.
 11. Payment for off-site storage is normally reserved for sensitive or very large pieces of equipment that in Engineer's opinion would not be practical to have stored on the site. Payment for off-site stored items shall be limited to 75% of the invoiced value of the item, less Contract retainage. Contractor shall reimburse Owner the cost of inspecting off-site stored items. When off-site storage is approved, Contractor shall provide Insurance Certificates and Document of Ownership to Owner.

SC-15.03 Substantial Completion

Delete Paragraph 15.03.A in its entirety and insert the following in its place:

- A. When Contractor considers any one of the seven portions of the Work ready for its intended use Contractor shall notify Owner and Engineer in writing that said portion of the Work is substantially complete and request that Engineer issue a certificate of Substantial Completion for that portion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items for that portion to be completed or corrected before final payment.

SC-15.04 Partial Utilization

Add the following new paragraph immediately after Paragraph 15.04.A.3:

4. Owner may at any time request Contractor in writing to permit Owner to take over operation of any part of the Work although it is not substantially complete. A copy of such request will be sent to Engineer, and within a reasonable time thereafter, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If Contractor does not object in writing to Owner and Engineer that such part of the Work is not ready for separate operation by Owner, Engineer will finalize the list of items to be completed or corrected and will deliver such lists to Owner and Contractor together with a written recommendation as to the division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, maintenance, utilities, insurance, warranties, and guarantees for that part of the Work which will become binding upon Owner and Contractor at the time when Owner takes over such operation (unless they shall have otherwise agreed in writing and so informed Engineer). During such operation and prior to Substantial Completion of such part of the Work, Owner shall allow Contractor reasonable access to complete or correct items on said list and to complete other related Work.

Paragraph 15.04.A.4 shall be renumbered to 15.04.A.5.

SC-15.08.A Correction Period

Delete in Paragraph 15.08.A the phrase “If within one year after the date of Substantial Completion” and insert in its place the following:

“If within one year of the date of final payment or from the date established by Engineer that the Work or portion thereof began operating or was used in a continuous, satisfactory manner for its intended purpose, whichever is earlier,”

SC-16.02 Owner May Terminate for Cause

Add the following new paragraphs immediately after Paragraph 16.02.B.2:

3. complete the Work as Owner may deem expedient at the expense of Contractor and surety;
4. apply the amounts retained from partial payments to the completion of the Work; and
5. authorize the surety to complete the steps in Paragraphs 16.02.B.1 through 4.

SC-16.03 Owner May Terminate for Convenience

Add the following paragraph after Paragraph 16.03.B:

C. Contractor shall require similar provisions contained in Paragraph 15.03 in each of its subcontracts to protect Contractor from claims by Subcontractors arising from the Owner's termination for convenience, or to minimize claims by such subcontractors. The remedy provided to Contractor under this Paragraph 16.03 shall be Contractor's sole remedy in the event of termination for convenience by Owner.

END OF SECTION

FOR INTERNAL USE ONLY

FOR INTERNAL USE ONLY

SPECIFICATIONS

SECTION 01 11 00

SUMMARY OF WORK

PART 1—GENERAL

1.01 DIVISION ONE

- A. The requirements of Division 01 apply to all sections of the Contract.

1.02 PROJECT SCOPE

- A. CONTRACTOR shall provide all items, articles, materials, operations or methods mentioned or scheduled on the Drawings or herein specified: including all labor, supervision, equipment, incidentals, taxes, and permits necessary to complete the Work as described within the Contract Documents. CONTRACTOR shall install all items provided by OWNER as mentioned or scheduled on the Drawings or herein specified.

1.03 CONTRACT DOCUMENTS—INTENT AND USE

A. Intent of Documents:

1. Singular notations and specifications shall be considered plural where application is reasonably inferred.
2. Mention or indication of extent of work under any division or Specification section is done only for convenience of CONTRACTOR and shall not be construed as describing all work required under that division or section.
3. Some individual sections may contain a list of related sections. The list of related sections in individual sections is provided for the convenience of CONTRACTOR and is not necessarily all-inclusive. CONTRACTOR may not rely upon this listing for determination of scope of work. Other sections of the Specifications not referenced in individual sections shall apply as required for proper performance of the Work.
4. Command type sentences may be used in the Contract Documents. These sentences refer to and are directed to CONTRACTOR.
5. Symbols for various elements and systems are shown on the Drawings. Should there be any doubt regarding the meaning or intent of the symbols used, a written interpretation shall be obtained from ENGINEER.

B. Use of Documents:

1. CONTRACTOR shall examine all Specifications and Drawings for the Work, including those that may pertain to Work CONTRACTOR does not normally perform with its own forces.
2. CONTRACTOR shall use all of the Project Drawings and Specifications:
 - a. For a complete understanding of the Project.
 - b. To determine the type of construction and systems required.
 - c. For coordination with other contractors.
 - d. To determine what other work may be involved in various parts or phases.
 - e. To anticipate and notify others when work by others will be required.
 - f. And all other relevant matters related to the project.
3. CONTRACTOR is also bound by all requirements of the Contract Documents which are applicable to, pertain to, or affect its Work as may be shown or inferred by the entire set of Project Drawings and Specifications.

1.04 CONSTRUCTION REQUIREMENTS

A. General Information and Requirements:

1. Waterlines are currently in service in project area. CONTRACTOR shall coordinate shut downs of water lines with Lake Village Water Association.
2. Access: CONTRACTOR shall maintain roadways open at all times. Any traffic control that is required shall comply with the Manual on Uniform Traffic Control Devices and Kentucky Transportation Cabinet requirements.

1.05 CONTRACTOR USE OF SITE

A. General:

1. The "area of the site" referred to in these Specifications shall be as shown on the Drawings. If the "area of the site" is not shown, OWNER's property lines, the Project right-of-way and/or any easements obtained for the Project shall be considered the "area of the site."
2. Construction activities shall be confined within the "area of the site" limits.
3. From the start of work to completion CONTRACTOR is responsible for the care of the site and the premises which are affected by operations of Work of this Contract.
4. Except for permanent site improvements provided under the Contract, CONTRACTOR shall restore property disturbed during the Work, to the conditions which previously existed.
5. Work in occupied spaces shall be restricted to specified Work and essential activities, such as making necessary connections and extending services or constructing temporary access ways. Such work shall be scheduled in advance with OWNER.

B. Parking and Deliveries:

1. CONTRACTOR is responsible for control of traffic by vehicles and persons within the limits of its operations.
2. Parking for employees, subcontractors, and agents of CONTRACTOR shall be in areas subject to approval of OWNER.
3. Access to the site for delivery of construction material or equipment shall be subject to approval of OWNER.

1.06 EXISTING SERVICES, OVERHEAD UTILITIES, AND UNDERGROUND FACILITIES INCLUDING STRUCTURES

- A. Interruption of existing services and systems including water, sanitary, lighting and power, signal and security will not be permitted unless specifically indicated otherwise. Provide temporary facilities to maintain services.
- B. Work shall not commence until all labor, materials, and equipment are available so Work can continue without interruption or delay.
- C. Should uncharted or incorrectly charted services or Underground Facilities be encountered during installation, notify OWNER and consult with utility owner immediately.
- D. Cooperate with OWNER and utility companies in keeping respective services and Underground Facilities in operation and repair any damage.
- E. CONTRACTOR shall not interrupt existing services and Underground Facilities occupied and used by OWNER or others, except when permitted in writing by OWNER.

- F. Any accidental interruption of services and Underground Facilities shall be repaired immediately, including provision of temporary facilities until permanent repairs can be made.
- G. Prior to any excavation, demolition, or drilling on site, CONTRACTOR shall contact owners of the Underground Facilities in and near the construction area of the intent to excavate, demolish, or drill. As part of this notification requirement, CONTRACTOR shall contact the utility notification service Kentucky 811 (811 or 1-800-752-6007) at least two but not more than 10 business days in advance of any work. CONTRACTOR shall be aware that not all owners participate in Kentucky 811. A call to this agency shall not absolve CONTRACTOR of the requirements for contacting all owners of Underground Facilities in and near the construction area. CONTRACTOR shall give reasonable advance notice to Kentucky 811 and other owners—such notification shall not be less than the minimum advance notification required.
- H. Locations and elevations of services and Underground Facilities as shown on the Drawings are approximate. It shall be CONTRACTOR's responsibility to determine their exact location when in their vicinity. To this end, CONTRACTOR shall proceed with caution in the excavation and preparation of the Site so the exact location of services and Underground Facilities can be determined. CONTRACTOR shall include in the Contract Price any costs for temporary or permanent relocations of such services and Underground Facilities required to complete the Work unless specifically indicated otherwise in the Specifications.
- I. Where potential grade conflicts might occur with existing services and Underground Facilities, CONTRACTOR shall uncover such services and Underground Facilities sufficiently in advance of construction so that elevations may be determined to allow any necessary adjustments to be made.
- J. CONTRACTOR shall coordinate with overhead utility companies prior to the Work. CONTRACTOR shall provide all necessary temporary and permanent support relocation or temporary and permanent restraint to maintain overhead utilities in service.
- K. CONTRACTOR shall keep an accurate and complete record of all such services and Underground Facilities encountered and shall provide OWNER a copy of this record. The record shall include a description of the item encountered, opinion as to conditions, and adequate measurements and depths so that the item can be located in the future.
- L. CONTRACTOR shall inspect all services and Underground Facilities for condition and soundness. Unsound conditions shall be reported to OWNER immediately after exposing. CONTRACTOR shall not proceed with the Work until the service or facility owner has been notified. Service or facility owner shall then be given time to inspect and correct, if required, the service or Underground Facility. CONTRACTOR may make claim under the provisions of Articles 11 and 12 of the General Conditions should CONTRACTOR feel a price or time adjustment is justified.
- M. Any additional costs incurred because of failure of CONTRACTOR to report the condition of any and all existing services and Underground Facility encountered shall be paid for by CONTRACTOR.
- N. Whenever ENGINEER feels it is necessary to explore and excavate to determine the location of existing services and Underground Facilities, CONTRACTOR shall make explorations and excavations for such purposes. If CONTRACTOR is required to perform

additional Work in making the explorations and excavations, extra compensation will be allowed as provided for in the General Conditions.

1.07 PROTECTION OF WORK AND IMPROVEMENTS

- A. CONTRACTOR shall protect the property of OWNER, existing improvements, and the Work installed by CONTRACTOR and others from abuse, damage, debris, and other objectionable materials resulting from construction activities.
- B. CONTRACTOR shall keep property, existing improvements, and the Work including structures, mains, fittings, and accessories free from dirt and foreign matter at all times.
- C. CONTRACTOR shall provide temporary plugging of openings, holes, and pipe ends that are existing or that CONTRACTOR has installed.
- D. Property, improvements, and Work damaged by CONTRACTOR shall be repaired or replaced by CONTRACTOR to the satisfaction of OWNER.

1.08 OWNER-FURNISHED PRODUCTS

- A. OWNER is responsible for the following items when supplying material or equipment to CONTRACTOR for installation.
 - 1. Arrange for delivery of shop drawings, product data, samples, manufacturer's instructions, and certificates to CONTRACTOR.
 - 2. Deliver supplier's bill of material to CONTRACTOR.
 - 3. Arrange and pay for delivery to site.
 - 4. Inspect deliveries jointly with CONTRACTOR.
 - 5. Submit claims for transportation damage and arrange for replacement of damaged, defective, or missing items.
- B. CONTRACTOR's responsibilities for OWNER-furnished products are:
 - 1. Receive and unload products at the site.
 - 2. Inspect deliveries jointly with OWNER and record shortage and damaged or defective items. Any materials and equipment furnished by OWNER and found to be defective shall be clearly marked and set aside to be removed by OWNER. Any materials and equipment furnished by OWNER and installed by CONTRACTOR without discovery of such defects will be replaced with sound materials and equipment by OWNER. CONTRACTOR, however, shall at its own expense furnish all equipment, labor, and facilities necessary to remove the defective materials and equipment and install the sound materials and equipment.
 - 3. Handle products at the site, including uncrating and storage.
 - 4. Protect products from damage and from exposure to the elements.
 - 5. Assemble, install, correct, adjust, and finish products in accordance with the appropriate technical section of these specifications.
 - 6. Repair or replace items damaged by CONTRACTOR at no additional cost to OWNER.
- C. CONTRACTOR's responsibility for materials and equipment furnished by OWNER shall begin at the point of delivery to CONTRACTOR. Materials and equipment already on the site shall become CONTRACTOR's responsibility on date of Notice to Proceed with Contract.
- D. OWNER-Purchased Equipment and Materials: OWNER has purchased materials and equipment and has an agreement with some manufacturers and suppliers. It is the intent of

the Contract Documents for the CONTRACTOR to use the provided materials as part of the construction, install the provided equipment, and accept reassignment of the agreement that OWNER has with the manufacturers and suppliers when indicated in the Contract Documents. The materials, equipment, and agreement provided by OWNER are referred to throughout the Contract Documents. CONTRACTOR shall also furnish and install any additional equipment required to provide a complete working system as shown on the Drawings and as specified in this Contract Document. To identify the scope of the OWNER-provided material, equipment supplier, and agreements, the language in the Specification has been typed in an italic font and framed as shown in the example below:

OWNER-supplied equipment and material to be installed by CONTRACTOR and agreement to be assumed by CONTRACTOR as part of this Contract have been typed in this text font and framed in this format and inserted in the appropriate Specification sections.

1.09 AVAILABILITY OF LANDS

- A. Easements were obtained for this Project. CONTRACTOR shall confine its operations, equipment and storage areas to the easements, lands and rights-of-way in which the Project is to be located. CONTRACTOR may enter into written agreements with property owners for use of other lands during construction. Copies of such agreements shall be provided to OWNER.

PART 2-PRODUCTS

2.01 OWNER-FURNISHED PRODUCTS

- A. The following is a reference list of the OWNER-furnished equipment, materials, and agreements with reference to sections of the Contract Documents for detailed information. List of OWNER-Furnished Materials and Equipment: water meters.

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 29 00

CONTRACT CONSIDERATIONS

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included: Measurement and Payment–Unit Prices.

1.02 MEASUREMENT AND PAYMENT–UNIT PRICES

- A. Measurement methods are delineated in the individual Specification sections.
- B. CONTRACTOR shall take measurements and compute quantities. ENGINEER will check measurements and quantities.
- C. Incidental Items of Work: Any items of Work shown on the Drawings or called for in the Specifications, but not included in the Bid Form, shall be considered incidental items of Work. The cost of incidental items of Work shall be included in the prices bid for adjacent Work.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 31 00

COORDINATION, FIELD ENGINEERING, AND MEETINGS

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Coordination.
 - 2. Field engineering.
 - 3. Progress meetings.

1.02 COORDINATION

- A. CONTRACTOR shall coordinate scheduling, submittals, and work of the various sections of the work to provide an efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. CONTRACTOR shall coordinate completion and cleanup of Work of separate sections in preparation for substantial completion and for portions of Work designated for OWNER's occupancy.
- C. After OWNER occupancy of premises, CONTRACTOR shall coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents to minimize disruption of OWNER's activities.

1.03 FIELD ENGINEERING

- A. CONTRACTOR shall locate and protect property stakes, legal survey monuments, benchmarks, and survey control and reference points. CONTRACTOR shall pay for replacement of disturbed property stakes and legal survey monuments by a Registered Land Surveyor acceptable to OWNER and for replacement of benchmarks and survey control and reference points provided by ENGINEER.
- B. CONTRACTOR shall provide field engineering services as required to establish elevations, lines, and levels utilizing recognized engineering survey practices.
- C. CONTRACTOR shall furnish all required plummets and graduated poles to check all Work.
- D. If stakes and boards have to be reset because of negligence of CONTRACTOR, CONTRACTOR shall bear the cost of such work.
- E. If laser beam is used, CONTRACTOR shall check its Work against intermediate grade stakes provided between manholes. Prior to initial use of the laser, CONTRACTOR shall set up laser on ground surface and check line and gradient controls. Lasers not functioning properly shall be immediately removed.
- F. If existing property stakes not within the limits of the trench are removed or damaged by CONTRACTOR, CONTRACTOR shall bear the cost of replacement. Replacement shall be made by a legal survey performed by a licensed Land Surveyor hired by OWNER. Cost for survey shall be deducted from the Contract Price.

- G. CONTRACTOR shall be responsible for all lines, elevations, and measurements of buildings, structures, piping, utilities, and other work executed by CONTRACTOR under the Contract. CONTRACTOR must exercise proper precaution to verify figures before laying out the Work and will be held responsible for any error resulting from its failure to exercise such precaution.

1.04 PROGRESS MEETINGS

- A. Progress meetings will be held throughout progress of the Work at intervals agreed to by OWNER, ENGINEER, and CONTRACTOR. Interval will generally be monthly.
- B. CONTRACTOR's project manager, job superintendent, major subcontractors, and suppliers shall attend as appropriate to address agenda topics for each meeting. CONTRACTOR's representatives shall have authority to bind CONTRACTOR to decisions at the meetings.
- C. The project schedule shall be updated monthly and shall be reviewed at each progress meeting.
- D. CONTRACTOR shall also provide the following information in written form at each meeting.
 - 1. Construction progress, including:
 - a. Activities completed this reporting period.
 - b. Activities in progress this reporting period.
 - c. Activities scheduled to commence this reporting period.
 - 2. Description of problem areas.
 - 3. Current and anticipated delays.
 - a. Cause of the delay.
 - b. Corrective action and schedule adjustments to correct the delay.
 - c. Impact of the delay on other activities and on completion dates.
 - 4. Changes in construction sequence.
- E. ENGINEER will prepare and distribute minutes to all attending parties.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Whenever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards.
 - 2. To facilitate CONTRACTOR's understanding of the design intent, procedures have been established for advance submittal of design data and for its review or rejection by ENGINEER.
 - 3. The type of submittal requirements specified in this section include construction progress schedule, submittal schedule, shop drawings, product data, samples, maintenance manuals, and other miscellaneous work-related submittals.
- B. Related work described elsewhere: More detailed requirements for submittals are described in other sections of these specifications for some materials and equipment. They are to be considered additional requirements to supplement the requirements specified in this section. Submittals shall conform to Article 7 of the General Conditions.
- C. Definitions: "Electronic Submittal" is defined as any submittal transmitted electronically to ENGINEER for review.

1.02 IDENTIFICATION OF SUBMITTALS

- A. CONTRACTOR shall completely identify each submittal and resubmittal by showing at least the following information:
 - 1. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
 - 2. Name and location of project and identification number.
 - 3. Drawing number and specifications section number to which the submittal applies.
 - 4. Include the date of each submittal or resubmittal.

1.03 GROUPING OF SUBMITTALS

- A. Unless otherwise specifically permitted by ENGINEER, CONTRACTOR shall make all submittals in groups containing all associated items so that information is available for checking each item when it is received.
- B. Partial submittals may be rejected as not complying with the provisions of the Contract Documents.

1.04 TIMING OF SUBMITTALS

- A. CONTRACTOR shall make all submittals far enough in advance of scheduled dates of installation to provide required time for reviews, for securing necessary approval, for possible revision and resubmittal, and for placing orders and securing delivery.

- B. The review period for submittals that are received after 3 P.M. shall commence on the following business day.

1.05 CONSTRUCTION PROGRESS AND SUBMITTAL SCHEDULES

- A. Submit preliminary schedules within 10 days of the effective date of the Contract.
- B. Revise schedules incorporating any comments provided at the schedule review conference required in GC.2.05 and resubmit.
- C. As a minimum, the construction progress schedule shall consist of a horizontal bar chart with a separate line for each major portion of Work or operation, identifying first workday of each week.
- D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration for each activity. Identify activities that are on the critical path.
- E. Include line items for milestones (if any), Substantial, and Final Completion.
- F. Submit updated schedules with each Application for Payment, identifying changes since previous version.
- G. Indicate estimated percentage of completion for each item of Work at each submission.
- H. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.

1.06 SHOP DRAWINGS

- A. Shop drawings shall include specially prepared technical data for this project including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements, and similar information not in standard printed form for general application to a range of similar projects. Shop drawings shall be submitted for all manufactured or fabricated items. See individual technical sections for special requirements.
- B. CONTRACTOR shall make all shop drawings accurately to scale and sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
- C. Shop drawings shall be checked, approved, and stamped by CONTRACTOR in accordance with the General Conditions before transmittal to ENGINEER for review and approval.
- D. Complete shop drawings and descriptive data shall be submitted on all manufactured or fabricated items prior to 50% completion of the Work. Applications for payment beyond 50% of the Contract amount will not be recommended for payment until all shop drawings are submitted, including the required hard copies, or a revised schedule for any remaining submittals is agreed to by OWNER and ENGINEER.
- E. CONTRACTOR shall submit shop drawings following the electronic submittal procedure described below. If electronic submittal is impossible, CONTRACTOR may request ENGINEER to review hard copy submittals on a limited basis. ENGINEER may request to review hard copy submittals on a limited basis for submittals that are over 100 pages in

length. If ENGINEER agrees to or requests hard copy submittal review, CONTRACTOR shall submit six color copies of shop drawings and descriptive data to ENGINEER for approval. Three copies of these will be returned to CONTRACTOR if approved. If shop drawings are not approved or if they are stamped "Approved as Noted-Resubmit," two corrected copies will be returned to CONTRACTOR for use in resubmittal. If CONTRACTOR desires more than three approved copies, submitted quantity shall be increased accordingly.

- F. Hard copy shop drawings shall be submitted in 3-tab report covers, binder clips, or large envelopes.
- G. Shop drawings submitted to ENGINEER will be reviewed and stamped "Approved," "Approved as Noted," "Approved as Noted-Resubmit," or "Not Approved." CONTRACTOR shall resubmit the above number of corrected shop drawings for all shop drawings stamped "Approved as Noted-Resubmit" and "Not Approved" and will continue this process until shop drawings are stamped "Approved" or "Approved as Noted." If drawings are stamped "Approved as Noted-Resubmit," fabrication may proceed in accordance with the marked-up shop drawings. Installation shall not proceed until shop drawings have been resubmitted and stamped "Approved" or "Approved as Noted."
- H. If shop drawings are stamped "Approved as Noted" or "Approved as Noted-Resubmit" and CONTRACTOR does not agree with revisions or cannot conform with revisions, fabrication shall not proceed and shop drawings shall be resubmitted with explanation of CONTRACTOR's position.
- I. All shop drawings used for construction site activities shall bear the "Approved" or "Approved as Noted" stamp of ENGINEER.
- J. Arrangements may be made between CONTRACTOR and ENGINEER to provide additional copies of "Approved" shop drawings for field activity purposes.
- K. PDF Submittal Procedures:
 - 1. Summary:
 - a. Shop drawing and product data submittals shall be transmitted to ENGINEER in electronic (PDF) format.
 - b. The intent of PDF submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
 - c. The PDF submittal process is not intended for color samples, color charts, or physical material samples.
 - 2. Procedures:
 - a. CONTRACTOR shall review and apply a stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer/product, dimensions and coordination of information with other parts of the work.
 - b. CONTRACTOR shall transmit each cover letter and submittal to ENGINEER as an e-mail attachment.
 - c. ENGINEER will return the reviewed shop drawing via e-mail with a transmittal letter, after review, indicating the status of the shop drawing review.
 - d. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of CONTRACTOR.
 - e. Electronically submitted shop drawings shall follow the following format:
 - f. All files shall be delivered in PDF format with a minimum resolution of 300 dpi unless otherwise requested by ENGINEER. Scanned in material shall be scanned in color

and any markings by CONTRACTOR shall be made in red. Pages shall be rotated to the appropriate position for easy reading on a computer monitor such that the majority of text is vertical.

- g. Files shall be delivered without security features activated.
- h. Shop Drawings shall be uploaded as individual files. Files combined into a zip drive are not acceptable. All pages of one submittal should be contained in one file.
- i. The file shall open to a cover page containing, at a minimum, the following information:
 - (1) CONTRACTOR's stamp.
 - (2) Name, e-mail, and telephone number of the individual who may be contacted for further information.
 - (3) Project number.
 - (4) Submittal number.
 - (5) Submission date, if resubmittal, all previous submission dates.
 - (6) Index detailing contents and the total number of pages in the submittal.
- j. Once a shop drawing has been "Approved" or "Approved as Noted," CONTRACTOR shall provide three hard color copies of the "Approved" or "Approved as Noted," shop drawings to ENGINEER. CONTRACTOR is responsible for the hard copy color replication of ENGINEER's "Approved" or "Approved as Noted," shop drawings for use by CONTRACTOR. Hard copy shop drawings shall be submitted in 3-ring binders or 3-tab report covers.

L. Shop drawings shall include verification that the item meets applicable codes and standards.

1.07 PRODUCT DATA

- A. CONTRACTOR shall provide product data as required to supplement shop drawings.
- B. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by CONTRACTOR to illustrate a material, product, or system for some portion of the work.
- C. CONTRACTOR shall collect required product data into one submittal for each unit of work or system.
- D. CONTRACTOR shall include manufacturer's standard printed recommendations for application and use, compliance with standards, performance characteristics, wiring and piping diagrams and controls, component parts, finishes, dimensions, required clearances, and other special coordination requirements.
- E. CONTRACTOR shall mark each copy of standard printed data to identify pertinent products, models, options, and other data.
- F. CONTRACTOR shall supplement manufacturer's standard data to provide information unique to the work.

1.08 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals required by ENGINEER.

- B. Shop Drawings and Product Data:
 - 1. Revise initial drawings or data and resubmit as specified for initial submittal.
 - 2. Itemize in a cover letter any changes which have been made other than those requested by ENGINEER.
- C. See SC-7.16 for additional information regarding resubmittals.

1.09 MANUFACTURER'S DIRECTIONS

- A. Manufactured articles, materials, and equipment shall be stored, commissioned, operated, applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, unless specified to the contrary.
- B. Wherever specifications call for work to be performed or materials to be installed in accordance with the manufacturer's printed instructions or directions, CONTRACTOR shall furnish copies as required for shop drawings of those instructions or directions to ENGINEER before installing the material or performing the work.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. OSHA requirements.
 - 2. Roadway limits.
 - 3. Permits.
 - 4. Wage rates.
 - 5. Recording and preserving historical and archaeological finds.
 - 6. American Iron and Steel requirements.

1.02 OSHA REQUIREMENTS

- A. All work including site safety, equipment, materials, and fabricated items provided under the Contract shall comply with the provisions of the "Occupational Safety and Health Act" (OSHA), the Kentucky Occupational Safety and Health Act (KYOSH), and all other applicable federal, state, county and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of these Contract Documents. Where any of these are in conflict, the more stringent requirements shall be followed.
- B. The CONTRACTOR's failure to thoroughly familiarize itself with the aforementioned safety provisions shall not relieve CONTRACTOR from compliance with the obligations and penalties set forth therein.

1.03 ROADWAY LIMITS

- A. CONTRACTOR shall comply with roadway weight restrictions including seasonal weight restrictions.

1.04 PERMITS

- A. The following permits were obtained by OWNER:
 - 1. Norfolk Southern Pipe Occupancy Permit.
 - 2. U.S. Army Corps of Engineers, Nationwide Permit No. 12.
 - 3. Kentucky Transportation Cabinet Encroachment Permits.
- B. They are included as attachments to this division. CONTRACTOR shall comply with all provisions of these permits and shall be responsible for notifications as required by these permits. CONTRACTOR shall obtain all other permits required for the Work. Where the requirements of any permit is more restrictive than the Drawings or the Specifications, the permit requirements shall govern.
- C. Any permits required for dewatering operations shall be obtained and paid for by CONTRACTOR.

1.05 WAGE RATES

- A. A state wage rate determination is not a requirement of this project.

1.06 RECORDING AND PRESERVING HISTORICAL AND ARCHAEOLOGICAL FINDS

- A. In the event archaeological materials (arrowheads, stone tools, stone axes, prehistoric and historic pottery, bottles, foundations, Civil War artifacts, and other types of artifacts) are uncovered during the construction of the Project, Work is to immediately cease at the location and the Kentucky Heritage Council shall be contacted. The telephone number is (502) 564-7005. Construction shall not commence at this location until a written release is received from the Kentucky Heritage Council. Failure to report a find could result in legal action.

1.07 AMERICAN IRON AND STEEL REQUIREMENTS

- A. CONTRACTOR shall comply with the American Iron and Steel (AIS) requirements of the Consolidated Appropriations Act of 2017 (Section 746 Division A, Title VII). CONTRACTOR shall submit, with each shop drawing, step certification that regulated iron and steel products meet AIS requirements. A sample certification letter is attached in these Specifications. Certification letters shall include the following at minimum:
 - 1. Identification of the product.
 - 2. City and State where the product was manufactured.
 - 3. Reference to OWNER and/or project.
 - 4. Signature of authorized manufacturer employee.
 - 5. Reference to current AIS requirements.
- B. The Consolidated Appropriations Act of 2017 (Section 746 Division A, Title VII) does grant the possibility of a De Minimis waiver and exclusions if certain conditions are met.
- C. CONTRACTOR shall provide required AIS documentation prior to installation of regulated iron and steel product.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 42 00

REFERENCE STANDARDS AND DEFINITIONS

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included:
1. Reference Standards:
 - a. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
 - b. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is CONTRACTOR's responsibility to provide materials and workmanship which meet or exceed that specifically named code or standard.
 - c. It is also CONTRACTOR's responsibility, when so required by the Contract Documents, to deliver to ENGINEER all required proof that the material or workmanship, or both, meet or exceed the requirements of the specifically named code or standard.
 2. Definitions:
 - a. A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including the Drawings which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon.
 - b. Certain terms used in the Contract Documents are defined generally in this section to supplement definitions of the Agreement, General Conditions, Supplementary Conditions, and other general contract documents.
 - c. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the Work.
- B. Related Work Described Elsewhere: The specific naming of codes or standards occurs on the Drawings and in other sections of these Specifications.

1.02 QUALITY ASSURANCE

- A. Familiarity with Pertinent Codes and Standards:
1. It is CONTRACTOR's responsibility to verify the requirements of the specifically named codes and standards and to verify that the items procured for use in this Work meet or exceed the specified requirements.
 2. When required by individual sections of these specifications, CONTRACTOR shall obtain a copy of each pertinent code or standard and maintain the copies at the job site during submittals, planning, and progress of the Work until Substantial Completion of the Work is attained.
- B. Overlapping or Conflicting Requirements:
1. Where compliance with two or more industry standards or sets of requirements are specified, and the overlapping of those standards or requirements establishes different or conflicting minimums or levels of quality, the most stringent requirement (which is

generally recognized to be also most costly) is intended and will be enforced, unless more detailed language written directly into Contract Documents clearly indicates that a less stringent requirement is acceptable.

2. Refer all uncertainties to ENGINEER for decision before proceeding.

1.03 REFERENCE STANDARDS

- A. Applicable standards of the construction industry are made a part of the Contract Documents by reference as if copied directly into the Contract Documents, or as if published copies were bound herewith. See Article 3.02 of the General Conditions for additional provisions regarding references.
- B. Standards referenced directly in the Contract Documents or by governing regulation, have precedence over nonreferenced standards which are recognized in industry for applicability to the Work.
- C. Nonreference standards are hereby defined to have no particular applicability to the work except as a general measurement of whether the Work complies with standards recognized in the construction industry.
- D. Reference standards and codes listed in these specifications may include, but are not necessarily limited to, standards or codes published by the following agencies and organizations:

1. AA Aluminum Association
1525 Wilson Boulevard, Arlington, VA 22209
2. AAMA American Architectural Manufacturer's Association
1827 Walden Office Square Suite 550, Schaumburg, IL 60173-4268
3. AASHTO American Association of State Highway & Transportation Officials
444 North Capitol Street NW Suite 249, Washington, DC 20001
4. ACI American Concrete Institute
38800 Country Club Drive, Farmington Hills, MI 48331-3439
5. AI Asphalt Institute
2696 Research Park Drive, Lexington, KY 40511-8480
6. AISC American Institute of Steel Construction
One East Wacker Drive Suite 700, Chicago, IL 60601-1802
7. AISI American Iron and Steel Institute
25 Massachusetts Avenue NW Suite 800, Washington, DC 20001
8. ANSI American National Standards Institute
25 West 43rd Street, New York, NY 10036
9. APA American Plywood Association
7011 South 19th, Tacoma, WA 98466-5333

- FOR INTERNAL USE ONLY
10. API American Petroleum Institute
1220 L Street NW, Washington, DC 20005-4070
 11. ARI Air-Conditioning & Refrigeration Institute
4100 North Fairfax Drive Suite 200, Arlington, VA 22203
 12. ASHRAE American Society of Heating, Refrigerating, and Air Conditioning Engineers
1791 Tullie Circle NE, Atlanta, GA 30329
 13. ASME American Society of Mechanical Engineers
Two Park Avenue, New York, NY 10016-5990
 14. ASSE American Society of Sanitary Engineering
901 Canterbury Suite A, Westlake, OH 44145
 15. ASTM ASTM International
100 Barr Harbor Drive, West Conshohocken, PA 19428-2959
 16. AWI Architectural Woodwork Institute
46179 Westlake Drive Suite 120, Potomac Falls, VA 20165-5874
 17. AWPA American Wood Protection Association
P.O. Box 361784, Birmingham, AL 35236-1784
 18. AWS American Welding Society
8669 Doral Boulevard Suite 130, Doral, FL 33166
 19. AWWA American Water Works Association
6666 West Quincy Avenue, Denver, CO 80235
 20. BHMA Builder's Hardware Manufacturers Association
355 Lexington Avenue 15th floor, New York, NY 10017
 21. BIA Brick Industry Association
1850 Centennial Park Drive Suite 301, Reston, VA 20191
 22. CRSI Concrete Reinforcing Steel Institute
9333 North Plum Grove Road, Schaumburg, IL 60173
 23. U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20540
 24. EJMA Expansion Joint Manufacturers Association
25 North Broadway, Tarrytown, NY 10591
 25. FM FM Global
FM Global Corporate Offices, 270 Central Avenue, Johnston, RI 02919

26. FTI Facing Tile Institute
Box 8880, Canton, OH 44711
27. GA Gypsum Association
6525 Belcrest Road Suite 480, Hyattsville, MD 20782
28. GANA Glass Association of North America
800 SW Jackson Street Suite 1500, Topeka, KS 66612-1200
29. ICC International Code Council
500 New Jersey Avenue NW 6th Floor, Washington, DC 20001
30. IES Illuminating Engineering Society
120 Wall Street, Floor 17, New York, NY 10005-4001
31. MIL Military Specifications
Naval Publications and Forms Center
5801 Tabor Avenue, Philadelphia, PA 19120
32. NAAMM National Association of Architectural Metal Manufacturers
800 Roosevelt Road Building C Suite 312, Glen Ellyn, IL 60137
33. NCMA National Concrete Masonry Association
13750 Sunrise Valley Drive, Herndon, VA 20171-4662
34. NECA NECA
National Electrical Contractors Association
3 Bethesda Metro Center Suite 1100, Bethesda, MD 20814
35. NEMA National Electrical Manufacturers Association
1300 North 17th Street Suite 1752, Rosslyn, VA 22209
36. NFPA National Fire Protection Association
1 Batterymarch Park, Quincy, MA 02169-7471
37. NIST National Institute of Standards and Technology
(U.S. Department of Commerce), 100 Bureau Drive, Stop 1070
Gaithersburg, MD 20899-1070
38. NRCA National Roofing Contractors Association
10255 West Higgins Road Suite 600, Rosemont, IL 60018-5607
39. NSF National Sanitation Foundation International
P.O. Box 130140, 789 North Dixboro Road, Ann Arbor, MI 48113-0140
40. OSHA Occupational Safety & Health Administration
200 Constitution Avenue NW, Washington, DC 20210
41. PCA Portland Cement Association
5420 Old Orchard Road, Skokie, IL 60077

42. PCI Prestressed Concrete Institute
200 West Adams Street Suite 2100, Chicago, IL 60606
43. SAE Society of Automotive Engineers
SAE World Headquarters
400 Commonwealth Drive, Warrendale, PA 15096-0001
44. SDI Steel Deck Institute
P.O. Box 25, Fox River Grove, IL 60021
45. SDI Steel Door Institute
30200 Detroit Road, Westlake, OH 44145-1987
46. SIGMA Sealed Insulating Glass Manufacturers Assoc.
401 North Michigan Avenue Suite 2400, Chicago, IL 60611
47. SJI Steel Joist Institute
234 Cheves Street, Florence, SC 29501
48. SMACNA Sheet Metal and Air Conditioning
Contractor's National Association
4201 Lafayette Center Drive, Chantilly, VA 20151-1219
49. SSPC Society for Protective Coatings
40 24th Street 6th Floor, Pittsburgh, PA 15222-4656
50. TCA Tile Council of America
100 Clemson Research Boulevard, Anderson, SC 29625
51. UL Underwriters Laboratories
333 Pfingston Road; Northbrook, IL 60062

1.04 SUBMITTALS

- A. For OWNER's records, CONTRACTOR shall submit copies of permits, licenses, certifications, inspection reports, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

1.05 DEFINITIONS

- A. Indicated:
1. The term "indicated" is a cross-reference to details, notes, or schedules on the drawings, to other paragraphs or schedules in the specifications and to similar means of recording requirements in the Contract Documents.
 2. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate cross-reference, and no limitation is intended except as specifically noted.

- B. Approve (or Words of Similar Nature):
1. Where used in conjunction with ENGINEER's response to submittals, requests, applications, inquiries, reports, and claims by CONTRACTOR, the meaning of the term "approve" will be held to the limitation of ENGINEER's responsibilities and duties as specified in Paragraph 1.02.B.1. of the General Conditions.
 2. In no case will "approval" by ENGINEER be interpreted as a release of CONTRACTOR from responsibility to fulfill requirements of the Contract Documents.
- C. Minimum Requirements:
1. Indicated requirements are for a specific minimum acceptable level of quality or quantity, as recognized in the industry.
 2. Actual work must comply with (or within specified tolerances) or exceed minimums.
 3. CONTRACTOR shall refer uncertainties to ENGINEER before proceeding.
- D. Abbreviations: Abbreviations, where not defined in the Contract Documents, will be interpreted to mean the normal construction industry terminology.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1—GENERAL

1.01 SUMMARY

- A. Work Includes:
 - 1. Quality Assurance—Control of Installation.
 - 2. Tolerances.
 - 3. Manufacturers' Field Services and Reports.

1.02 QUALITY ASSURANCE—CONTROL OF INSTALLATION

- A. CONTRACTOR shall monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce Work of specified quality.
- B. CONTRACTOR shall comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, CONTRACTOR shall request clarification from ENGINEER before proceeding.
- D. CONTRACTOR shall comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Work shall be performed by persons qualified to produce workmanship of specified quality.
- F. CONTRACTOR shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.03 TOLERANCES

- A. CONTRACTOR shall monitor tolerance control of installed products to produce acceptable work and shall not permit tolerances to accumulate.
- B. CONTRACTOR shall comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, CONTRACTOR shall request clarification from ENGINEER before proceeding.
- C. CONTRACTOR shall adjust products to appropriate dimensions; position before securing products in place.

1.04 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. When specified in individual specification sections or when requested by ENGINEER, CONTRACTOR shall require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, and quality of workmanship.

- B. CONTRACTOR shall submit qualifications of observer to ENGINEER 30 days in advance of required observations.
- C. CONTRACTOR shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. CONTRACTOR shall submit report in duplicate within 30 days of observation to ENGINEER for information.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

FOR INTERNAL USE ONLY

SECTION 01 50 00

TEMPORARY FACILITIES

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Temporary utilities.
 - 2. Construction sign.
 - 3. Removal of temporary facilities.
- B. CONTRACTOR shall arrange for and provide temporary facilities as required for proper and expeditious prosecution of the Work.
- C. CONTRACTOR shall pay all costs, except as otherwise specified, until final acceptance of the Work unless OWNER makes arrangements for use of completed portions of the Work after substantial completion in accordance with the provisions of the General Conditions.
- D. CONTRACTOR shall make all temporary connections to utilities and services in locations acceptable to OWNER and local authorities having appropriate jurisdiction.
 - 1. Furnish all necessary labor and materials.
 - 2. Make all installations in a manner subject to the acceptance of such authorities and OWNER.
 - 3. Maintain such connections.
 - 4. Remove temporary installation and connection when no longer required.
 - 5. Restore services and sources of supply to proper operating conditions.

1.02 TEMPORARY UTILITIES

- A. Temporary Toilets: CONTRACTOR shall provide and maintain sanitary temporary chemical toilets located where approved by OWNER and in sufficient number required for the work force employed by CONTRACTOR.
- B. Weather Protection and Temporary Heat: CONTRACTOR shall provide weather protection to protect the Work from damage because of freezing, rain, snow, and other inclement weather.
- C. Temporary Water: OWNER will provide water during construction. The water will be metered and will be a project expense. CONTRACTOR shall also provide its own piping, valves, and appurtenances for its requirements. Connection to the existing water system shall be coordinated with OWNER and shall meet all code requirements including disinfection and backflow prevention.
- D. Temporary Fire Protection: CONTRACTOR and Subcontractor(s) who maintain or provide an enclosed shed or trailer shall provide and maintain in operating order in each shed or trailer a minimum of one fire extinguisher. More extinguishers shall be provided as necessary. Fire extinguishers shall be minimum dry chemical, nonfreezing-type, UL rating 2A-30BC, with 10-pound capacity for Class A, B, and C fires.

- E. CONTRACTOR's and Subcontractor(s)' personnel shall refrain from smoking during excavation, laying pipe, backfilling, and other work at the Site which may involve potential contact with explosive vapors or gasoline products.

1.03 CONSTRUCTION SIGN

- A. Furnish and erect a construction sign to be maintained and kept in place until completion of the Contract.
- B. The sign shall be constructed by a professional sign painter per the sign layout as shown on the attached RD Drawing at the end of these Specifications.

1.04 REMOVAL OF TEMPORARY FACILITIES

- A. Remove temporary materials, equipment, services, and construction as soon as practicable but no later than just prior to substantial completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities and restore existing facilities used during construction to specified, or to original, condition.

PART 2-PRODUCTS

NOT APPLICABLE

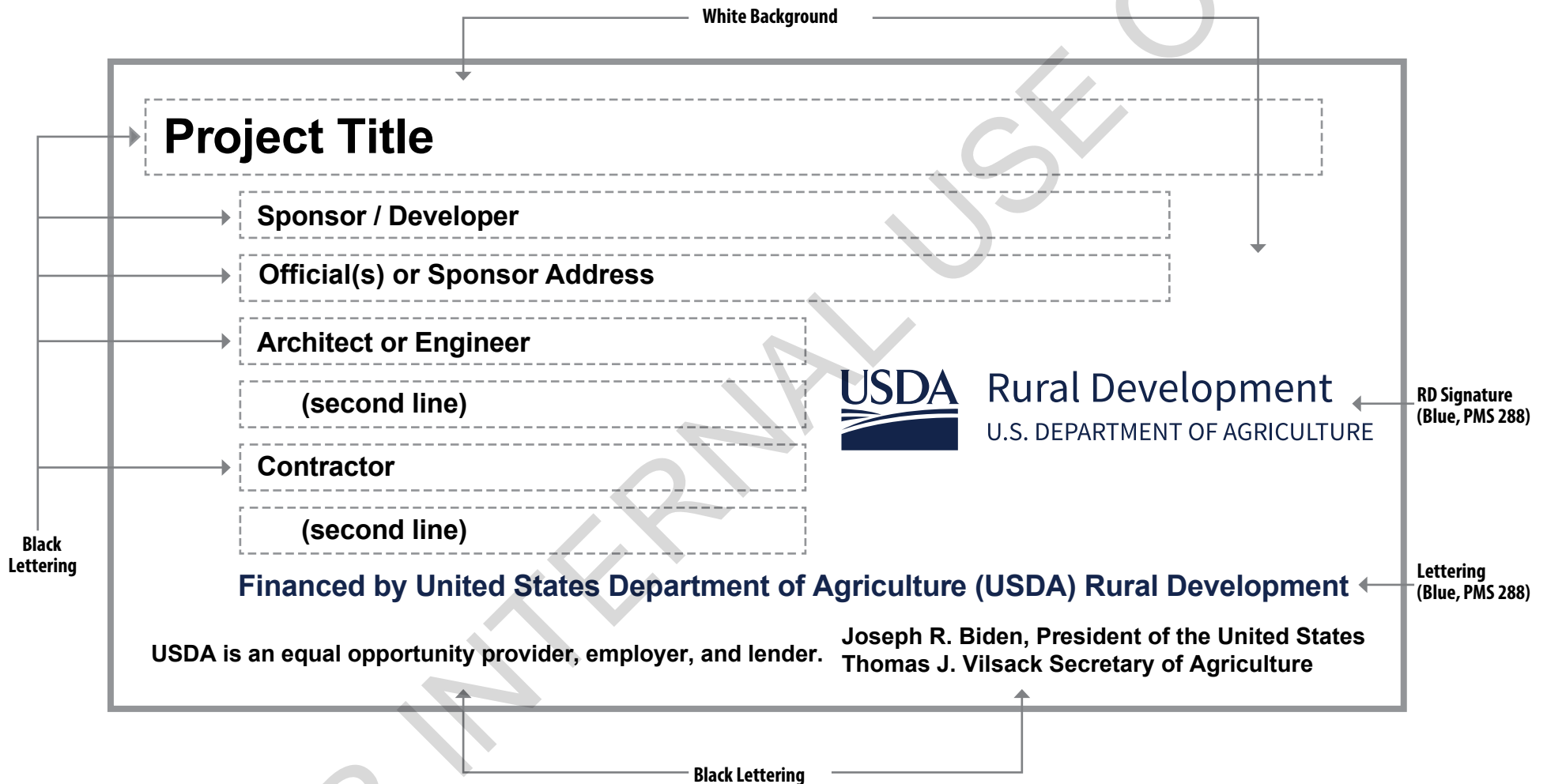
PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

TEMPORARY CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS

Recommended Fonts: Helvetica or Arial



SIGN DIMENSIONS : 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")

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

SECTION 01 57 00

TEMPORARY CONTROLS

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Dust Control.
 - 2. Water, Erosion, and Sediment Control.
 - 3. Traffic Control.
 - 4. Site Security.
 - 5. Daily Cleanup.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 DUST CONTROL

- A. CONTRACTOR shall execute the Work by methods to minimize raising dust from construction operations.
- B. CONTRACTOR shall provide positive means to prevent airborne dust from dispersing into atmosphere.

3.02 WATER, EROSION, AND SEDIMENT CONTROL

- A. CONTRACTOR shall grade site to drain and shall maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. CONTRACTOR shall protect Site from puddling or running water.
- C. CONTRACTOR shall provide erosion control measures as necessary to control discharge of sediment laden water to surface waters and wetlands.
- D. Except as provided for in the document, overland discharge of water from dewatering operations shall not be allowed. Depending on water quality, such water shall either be piped directly to the surface water or shall be directed to sedimentation basins or other such structures or features prior to discharge to surface waters so as not to cause damage to existing ground and improvements, erosion, or deposition in the discharge area.
- E. CONTRACTOR shall use jute or synthetic netting, silt fences, straw bales, dikes, channels, and other applicable measures to prevent erosion of soils disturbed by its construction operation.

- F. Restoration of the Site shall proceed concurrently with the construction operation. See Drawings and Specifications for erosion control measures in addition to that which may be required above.
- G. Erosion control measures shall comply with the following document: Kentucky's Best Management Practices for Construction Activities.

3.03 TRAFFIC CONTROL

- A. CONTRACTOR shall be responsible for providing all signs, barricades, flagmen, and other traffic control devices in the construction zone.
- B. Do not close or obstruct roadways without approval of OWNER.
- C. Conduct operations with minimum interference to roadways.
- D. CONTRACTOR shall be responsible for providing all signs, barricades, flagmen and other traffic control devices in the construction zone. All traffic control measures shall meet the requirements Manual on Uniform Traffic Control Devices for Streets and Highways, Latest Edition.
- E. Maintain two-way traffic on streets at all times.

3.04 SITE SECURITY

- A. CONTRACTOR shall have the sole responsibility of safeguarding the Site perimeter to prevent unauthorized entry to the Site throughout the duration of the Project. CONTRACTOR shall at all times provide such permanent and temporary fencing or barricades or other measures as may be necessary to restrict unauthorized entry to its construction area including construction in public rights-of-way or easements. Site security measures shall include safeguards against attractive nuisance hazards as a result of construction activity.
- B. CONTRACTOR shall at all times be responsible for the security of the Work including materials and equipment. OWNER will not take any responsibility for missing or damaged equipment, tools, or personal belongings. CONTRACTOR shall have the sole responsibility of safeguarding the Work and the Site throughout the duration of the Project.

3.05 DAILY CLEANUP

- A. CONTRACTOR shall clean up the Site and remove all rubbish on a daily basis.
- B. CONTRACTOR shall clean up public streets and highways and remove any dirt, mud, or other materials due to project traffic on daily basis and shall comply with all local and state ordinances and permit requirements.

END OF SECTION

SECTION 01 60 00

MATERIALS AND EQUIPMENT

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included: CONTRACTOR shall be responsible for the delivery, handling, storage and protection of all material and equipment required to complete the Work as specified herein.
- B. Related Sections and Divisions: Specific requirements for the handling and storage of material and equipment are described in other sections of these Specifications.

1.02 PRODUCTS

- A. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.
- B. CONTRACTOR shall not use materials and equipment removed from existing construction, except as specifically required, or allowed, by the Contract Documents.
- C. When any construction deviations from the Drawings and/or Specifications necessary to accommodate equipment supplied by CONTRACTOR, result in additional costs to CONTRACTOR or other contractors, such additional costs shall be borne by CONTRACTOR. CONTRACTOR shall also pay any additional costs necessary for revisions of Drawings and/or Specifications by ENGINEER.
- D. Each major component of equipment shall bear a nameplate giving the name and address of the manufacturer and the catalogue number or designation.

1.03 TRANSPORTATION AND HANDLING

- A. Materials, products and equipment shall be properly containerized, packaged, boxed, and protected to prevent damage during transportation and handling.
- B. CONTRACTOR shall not overload any portion of the structure in the transporting or storage of materials.
- C. CONTRACTOR shall not damage other construction by careless transportation, handling, spillage, staining or impact of materials.
- D. CONTRACTOR shall provide equipment and personnel to handle products, including those provided by OWNER, by methods to prevent soiling and damage.
- E. CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.
- F. CONTRACTOR shall handle product by methods to avoid bending or overstressing. Lift large and heavy components only at designated lift points.

1.05 DELIVERY AND RECEIVING

- A. CONTRACTOR shall arrange deliveries of products in accordance with the Progress Schedule, allowing time for observation prior to installation.
- B. CONTRACTOR shall coordinate deliveries to avoid conflict with the Work and conditions at the Site; work activities of other contractors or OWNER; limitations on storage space; availability of personnel and handling equipment and OWNER's use of premises.
- C. CONTRACTOR shall deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
- D. CONTRACTOR shall clearly mark partial deliveries of component parts of equipment to identify equipment and contents to permit easy accumulation of parts and to facilitate assembly.
- E. Immediately on delivery, CONTRACTOR shall inspect shipment to review that:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Accessories and installation hardware are correct.
 - 4. Containers and packages are intact and labels legible.
 - 5. Products are protected and undamaged.

1.06 STORAGE AND PROTECTION

- A. General:
 - 1. CONTRACTOR shall store products, immediately on delivery, in accordance with manufacturer's instructions, with all seals and labels intact and legible.
 - 2. Any additional off-site space required shall be arranged by CONTRACTOR.
 - 3. CONTRACTOR shall allocate the available storage areas and coordinate their use by the trades on the job.
 - 4. CONTRACTOR shall arrange storage in a manner to provide access for maintenance of stored items and for observation.
- B. In enclosed storage, CONTRACTOR shall:
 - 1. Provide suitable temporary weather tight storage facilities as may be required for materials that will be damaged by storage in the open.
 - 2. Maintain temperature and humidity within ranges stated in manufacturer's instructions.
 - 3. Provide ventilation for sensitive products as required by manufacturer's instructions.
 - 4. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
 - 5. Store solid materials such as insulation, tile, mechanical and electrical equipment, fittings, and fixtures under shelter, in original packages, away from dampness and other hazards.
 - 6. Store liquid materials away from fire or intense heat and protect from freezing.
- C. At exterior storage, CONTRACTOR shall:
 - 1. Store unit materials such as concrete block, brick, steel, pipe, conduit, door frames, and lumber off ground, out of reach of dirt, water, mud and splashing.
 - 2. Store tools or equipment that carry dirt outside.
 - 3. Store large equipment so as not to damage the Work or present a fire hazard.
 - 4. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet material and provide ventilation to avoid condensation.

5. Completely cover and protect any equipment or material which is prime coated or finish painted with secured plastic or cloth tarps. Store out of reach of dirt, water, mud and splashing.
6. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
7. Provide surface drainage to prevent erosion and ponding of water.
8. Prevent mixing of refuse or chemically injurious materials or liquids.
9. Cover aggregates such as sand and gravel in cold wet weather.
10. Remove all traces of piled bulk materials at completion of work and return site to original or indicated condition.

1.07 MAINTENANCE OF STORAGE

- A. CONTRACTOR shall periodically inspect stored products on a scheduled basis.
- B. CONTRACTOR shall verify that storage facilities comply with manufacturer's product storage requirements, and verify that manufacturer required environmental conditions are maintained continually.
- C. CONTRACTOR shall verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes is acceptable under requirements of Contract Documents.
- D. CONTRACTOR shall perform scheduled maintenance of equipment in storage as recommended by the manufacturer. A record of the maintenance shall be kept and turned over to ENGINEER when the equipment is installed.

1.08 INSTALLATION REQUIREMENTS

- A. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the respective manufacturers, unless otherwise specified.
- B. After installation, CONTRACTOR shall protect all materials and equipment against weather, dust, moisture, and mechanical damage.
- C. CONTRACTOR shall be responsible for all damages that occur in connection with the care and protection of all materials and equipment until completion and final acceptance of the Work by OWNER. Damaged material and equipment shall be immediately removed from the Site.

1.09 EQUIPMENT WARRANTIES

- A. Warranties shall be nonprorated, include all parts and labor, and be in written form. Warranties shall specifically exclude buyer's indemnification language. Warranty language shall not eliminate manufacturer's responsibility for sizing of the equipment. During warranty period, manufacturer shall be responsible for any travel expenses, outside contractor fees, and rental equipment fees associated with providing warranty service. Manufacturer shall pay expenses incurred for repairs and parts replacement not made by manufacturer if manufacturer's response is not within 72 hours of notification by OWNER. Warranty language shall be provided with the shop drawings.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

FOR INTERNAL USE ONLY

SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Closeout procedures.
 - 2. Final cleaning.
 - 3. Adjusting.
 - 4. Project record documents.
 - 5. Warranties.

1.02 CLOSEOUT PROCEDURES

- A. CONTRACTOR shall provide submittals to ENGINEER that are required by governing or other authorities.
- B. CONTRACTOR shall comply with General Conditions and Supplementary Conditions and complete the following before requesting ENGINEER's observation of the Work or designated portion thereof for substantial completion.
 - 1. Submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates, and similar required documentation for specific units of Work, enabling OWNER's unrestricted occupancy and use.
 - 2. Submit record documentation, maintenance manuals, tools, spare parts, keys, and similar operational items.
 - 3. Submit consent of surety (if surety required in Contract).
 - 4. Complete final cleaning, touch-up work of marred surfaces, and remove temporary facilities and tools.

1.03 FINAL CLEANING

- A. It is CONTRACTOR's responsibility to completely clean up the construction site at the completion of the Work.
- B. In addition to the cleaning specified above and the more specific cleaning that may be required in various technical sections of the Specifications, CONTRACTOR shall prepare the Project for occupancy by a thorough cleaning throughout, which shall include the following:
 - 1. Clean site; sweep paved areas, rake clean landscaped surfaces.
 - 2. Remove waste and surplus materials, rubbish, and construction facilities from the Site.

1.04 ADJUSTING

- A. CONTRACTOR shall adjust operating products and equipment to provide smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

- A. CONTRACTOR shall maintain on Site one set of the following record documents to record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. CONTRACTOR shall make entries that are complete and accurate, enabling future reference by OWNER.
- C. CONTRACTOR shall store record documents separate from documents used for construction.
- D. CONTRACTOR shall record information concurrent with construction progress.
- E. Specifications: CONTRACTOR shall legibly mark and record at each Product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by addenda and modifications.
- F. Record Drawings: CONTRACTOR shall legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of the work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.

1.06 WARRANTIES

- A. CONTRACTOR shall provide warranties beyond project one-year warranty as required by technical sections and as follows.
- B. Submit warranty information as follows:
 - 1. Provide original copies bearing authorized signatures.
 - 2. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers, and provide Table of Contents and assemble in three-ring binder with durable cover.
 - 3. Submit with request for certificate of Substantial Completion.
 - 4. For items of work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance listing date of acceptance as start of warranty period.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

NOT APPLICABLE

END OF SECTION

FOR INTERNAL USE ONLY

FOR INTERNAL USE ONLY

PERMITS



AECOM
1700 Market Street
Suite 1600
Philadelphia, PA 19103
www.aecom.com

215 735 0832 tel
215 735 0883 fax

April 03, 2020

Mike Sanford
Executive Director
801 Pleasant Hill Drive
P.O. Box 303
Burgin, KY 40310

Subject: Harrodsburg, Mercer County, Kentucky
Milepost 353.55-W, Talmage-Danville Line, Lake Division
Latitude N37.738733, Longitude W84.821757

Norfolk Southern Activity No. 1277983

Proposed replacement of an underground crossing of an 8-inch PVC water pipeline in a 14-inch steel casing pipe wholly within the confines of Bellows Mill Road (AAR/DOT # 735693F)

Dear Mr. Sanford:

Attached is the fully executed Public Street Acknowledgement Form dated February 28, 2020 between Norfolk Southern Railway Company and Lake Village Water Association covering the above referenced project.

This letter acknowledges receipt of your payment in the amount of \$1,000.00, which covers the Risk Management Fee. Your Commercial General Liability insurance coverage has been reviewed by Norfolk Southern's Risk Manager and is acceptable through July 1, 2020. If your construction will occur after the expiration date noted above for your insurance, you must furnish a renewal certificate or policy to Norfolk Southern's Risk Manager prior to scheduling construction or contacting the Railway for Flagging.

Prior to start of work on Railway right of way, you are required to contact the following:

For Scheduling of Flagging and Inspection and For Railway Signal Identification
Gretchen Pounds of NS's Lake Division Engineering Office, 260-493-5355

Once contacted, the Division Engineer requires 72 hours to review the need for and availability of flagmen for this project and will advise you of the cost of said flagmen. No work is permitted on Railway right of way without a flagman or the Division Engineer's agreement to waive the flag protection requirement. Entry onto Railway property without the Division Engineer's prior approval is considered trespassing. In the event you are unable to contact the railway for flagging services, please contact the undersigned for assistance.

Thank you for your cooperation.

Very truly yours,

Angelina Discienzo
Contract Administrator
215-789-2168
angelina.discienzo@aecom.com

CC: Archives

NORFOLK SOUTHERN RAILWAY COMPANY

**ACKNOWLEDGMENT FORM FOR WIRE AND/OR PIPE OCCUPATION
WITHIN THE LIMITS OF A PUBLIC RIGHT OF WAY**

APPLICANT: Lake Village Water Association
801 Pleasant Hill Drive, P.O. Box 303
Burgin, Kentucky 40310

SUBJECT: Harrodsburg, Mercer County, Kentucky
Milepost 353.55-W, Talmage-Danville Line, Lake Division
Latitude N37.738733, Longitude W84.821757

Norfolk Southern Activity No. 1277983

Proposed replacement of an underground crossing of an 8-inch PVC water pipeline in a 14-inch steel casing pipe wholly within the confines of Bellows Mill Road (AAR/DOT # 735693F)

In response to Applicant's submittal dated December 9, 2019, regarding the proposed construction of the subject project, Norfolk Southern Railway Company ("Railway") does not object to the installation of the Facilities as shown on the attached Drawings marked Exhibits A and B, received by Railway on December 9, 2019, and Pipe Data Sheet, provided Applicant adheres to the following terms and conditions:

- The Facilities shall be installed, maintained, repaired and renewed by and at the sole risk, cost and expense of the Applicant.
- The Facilities must conform with all Federal, State and local laws, rules and regulations and will not be attached to any railroad structure or appurtenance and will not be located on any private property of Railway.
- The design and construction of aerial Facilities shall comply with Railway's NSCE-4 Specification, latest edition, and underground Facilities shall comply with Railway's NSCE-8 Specification, latest edition.
- After installation of the Facilities, the existing pipeline to be abandoned shall be immediately filled with cement grout, compacted sand, flowable fill, or other methods as approved by the Railway.

• Insurance

(a) Without limiting in any manner the liability and obligations assumed by Applicant under any other provision of this Agreement, and as additional protection to Railway, Applicant shall, at its expense, pay the Risk Financing Fee set forth in subparagraph (i) below and shall procure and maintain with insurance companies satisfactory to Railway, the insurance policies described in subparagraphs (ii) and (iii).

(i) Upon execution of this Agreement, Applicant shall pay Railway a risk financing fee of \$1,000 per installation (herein called the "Risk Financing Fee") to provide Railroad Protective Liability Insurance or such supplemental insurance (which may be self-insurance) as Railway, in its sole discretion, deems to be necessary or appropriate.

(ii) Prior to commencement of installation or maintenance of the Facilities or entry on Railway's property, Applicant, and its contractor if it employs one, shall procure and maintain for the course of said installation and maintenance, a general liability insurance policy naming Railway as an additional insured, and containing products and completed operations and contractual liability coverage, with a combined single limit of not less than \$1,000,000 for each occurrence.

(iii) Prior to commencement of any subsequent maintenance of the Facility during the term of this Agreement, unless Railway elects to make available and Applicant pays the then current risk financing fee for each affected installation, Applicant, or its contractor if it employs one, shall furnish Railway with an original Railroad Protective Liability Insurance Policy naming Railway as the named insured and having a limit of not less than a combined single limit of

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\$2,000,000 each occurrence and \$6,000,000 aggregate. Such policy shall be written using Insurance Services Offices Form Numbers CG 00 35 01 10 01.

(b) All insurance required under preceding subsection (a) shall be underwritten by Insurers and be of such form and content as may be acceptable to Railway. Prior to commencement of installation or maintenance of the Facilities or any entry on Railway's property, Applicant, or its contractor if it employs one, shall furnish to Railway's Risk Manager, Three Commercial Place, Norfolk, Virginia 23510-2191 (or such other representative and/or address as subsequently given by Railway to Applicant in writing), for approval, the original policy described in subsection (a)(iii) and a certificate of insurance evidencing the existence of a policy with the coverage described in subsection (a)(ii).

- Prior to commencement of any work to be performed, Applicant shall notify the appropriate Division Engineer for the scheduling of protection and inspection. Within seventy-two (72) hours after the Division Engineer's actual receipt of such notification, the Division Engineer shall review the necessity and availability of flagmen for the proposed work and advise Applicant of such matters and the estimated cost therefor. No work shall be permitted without the presence of Railway's flagman or the Division Engineer's waiver of the requirement for flag protection. Entry on or about any Railway right-of-way without the Division Engineer's prior approval shall be deemed trespassing. Applicant agrees to pay Railway, within thirty (30) days after delivery of an invoice therefor, for any protection and inspection costs incurred by Railway, in Railway's sole judgment, during any such entry.
- If Railway deems it advisable during the progress of any work of construction, maintenance, repairs and renewals, alterations, adjustments or removal of the Applicant's Facilities to place watchmen, flagmen, inspectors or any other employees deemed necessary by Railway for the protection of its train traffic and the protection of the property owned or in possession or control of Railway, or its employees, patrons, or licensees, Railway shall have the right to do so and Applicant agrees to bear full cost and expense thereof and to promptly reimburse Railway upon demand.
- All cost or expense resulting from any and all loss of life or property, or injury or damage to the person or property of any person, firm or corporation (including the parties hereto and their respective officers, agents and employees) and any and all claims, demands or actions for such loss, injury or damage, caused by or growing out of the presence or use, or the construction, maintenance, renewal, change or relocation and subsequent removal of the Facilities and appurtenances herein referred to shall be borne by Applicant unless caused solely by the negligence or willful misconduct of Railway.
- In the event of any revision, renewal, addition, removal or alteration of said facilities, prior approval of the Railway must be secured. Applicant must also furnish Railroad Protective Liability Insurance for this work.
- Upon abandonment of the Facilities by Applicant, Applicant shall seek direction from Railway's Chief Engineer, or his representative, regarding the method of abandonment if the Facilities will be abandoned in place.
- In the event the Facilities consist of electrical power or communication wires and appurtenances, Applicant shall promptly remedy any inductive interference growing out of, or resulting from the presence of, the Facilities.
- In the event the Facilities consist of an underground occupation, Applicant will be responsible for any settlement caused to the roadbed, right of way and/or tracks, facilities and appurtenances of Railway arising from or as a result of the installation of the Facilities, and Applicant shall pay to Railway on demand the full cost and expense therefore.
- All rights and obligations conferred hereby shall extend to the successors and assigns of the parties hereto, provided that the Applicant shall in no event transfer or assign its rights hereunder without the written consent of Railway, which will not be unreasonably withheld.
- If the public road is abandoned by the appropriate governmental authority and the Facilities remain within the limits of Railway's right of way after such abandonment, as a condition for the continuing presence of the Facilities within Railway's right of way, Railway and Applicant shall agree upon an appropriate occupancy fee or rental for the Facilities and execute an amendment to this Agreement within ninety (90) days after the date upon which such public road is abandoned.

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- Any and all notices, demands or requests by or from Railway to Applicant, or Applicant to Railway, shall be in writing and shall be sent by (a) postage paid, certified mail, return receipt requested, or (b) a reputable national overnight courier service with receipt therefor, or (c) personal delivery, and addressed in each case as follows:

If to Railway: c/o Norfolk Southern Corporation
1200 Peachtree Street, NE - 12th Floor
Atlanta, Georgia 30309-3504
Attention: Director Real Estate

If to Applicant: Lake Village Water Association
801 Pleasant Hill Drive, P.O. Box 303
Burgin, Kentucky 40310
Attention: Executive Director

Either party may, by notice in writing, direct that future notices or demands be sent to a different address. All notices hereunder shall be deemed given upon receipt (or, if rejected, upon rejection).

ACCEPTED BY:

NORFOLK SOUTHERN RAILWAY COMPANY

Adam J. Jinks
Real Estate Manager

DATE 2-28-2020

AD

LAKE VILLAGE WATER ASSOCIATION

Mark D. Sauls
Title *Executive Director*

DATE 2/14/2020

Activity Number: 1277983
AD: December 26, 2019
File No. 1810975v1

AD

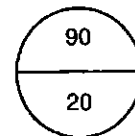
PIPE DATA SHEET

	CARRIER PIPE	CASING PIPE
CONTENTS TO BE HANDLED	Water	N/A
MAX. ALLOWABLE OPERATING PRESSURE	165 psi	N/A
NOMINAL SIZE OF PIPE	8"	14"
OUTSIDE DIAMETER	9.05"	14.00"
INSIDE DIAMETER	8.28"	13.25"
WALL THICKNESS	0.362"	0.375" MIN
WEIGHT PER FOOT	N/A	N/A
MATERIAL	PVC	Steel
PROCESS OF MANUFACTURE	N/A	N/A
SPECIFICATION	AWWA C900	ASTM A53
GRADE OR CLASS (Specified Minimum Yield Strength)	Class 165	Grade B
TEST PRESSURE	150 psi	N/A
TYPE OF JOINT	Gasket	Welded
TYPE OF COATING	N/A	N/A
DETAILS OF CATHODIC PROTECTION	N/A	N/A
DETAILS OF SEALS OR PROTECTION AT END OF CASING	Sealed	Sealed
CHARACTER OF SUBSURFACE MATERIAL	Silt Loam	Silt Loam
APPROXIMATE GROUND WATER LEVEL	N/A	N/A
SOURCE OF INFORMATION ON SUBSURFACE CONDITIONS	NRCS	NRCS

Proposed method of installation (refer to NSCE-8 Specification):

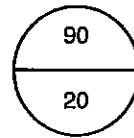
1277983-AD

- Bore and jack
- Jacking
- Tunneling (with Tunnel Liner Plate)
- Directional Bore/Horizontal Direction Drilling – Method A
- Directional Bore/Horizontal Direction Drilling – Method B
- Open Cut – *All installations directly under any track must be designed as a bored installation. Open cut installations will be considered on a case-by-case basis by Norfolk Southern's Division Superintendent at the time of installation.*
- Other (Specify): _____

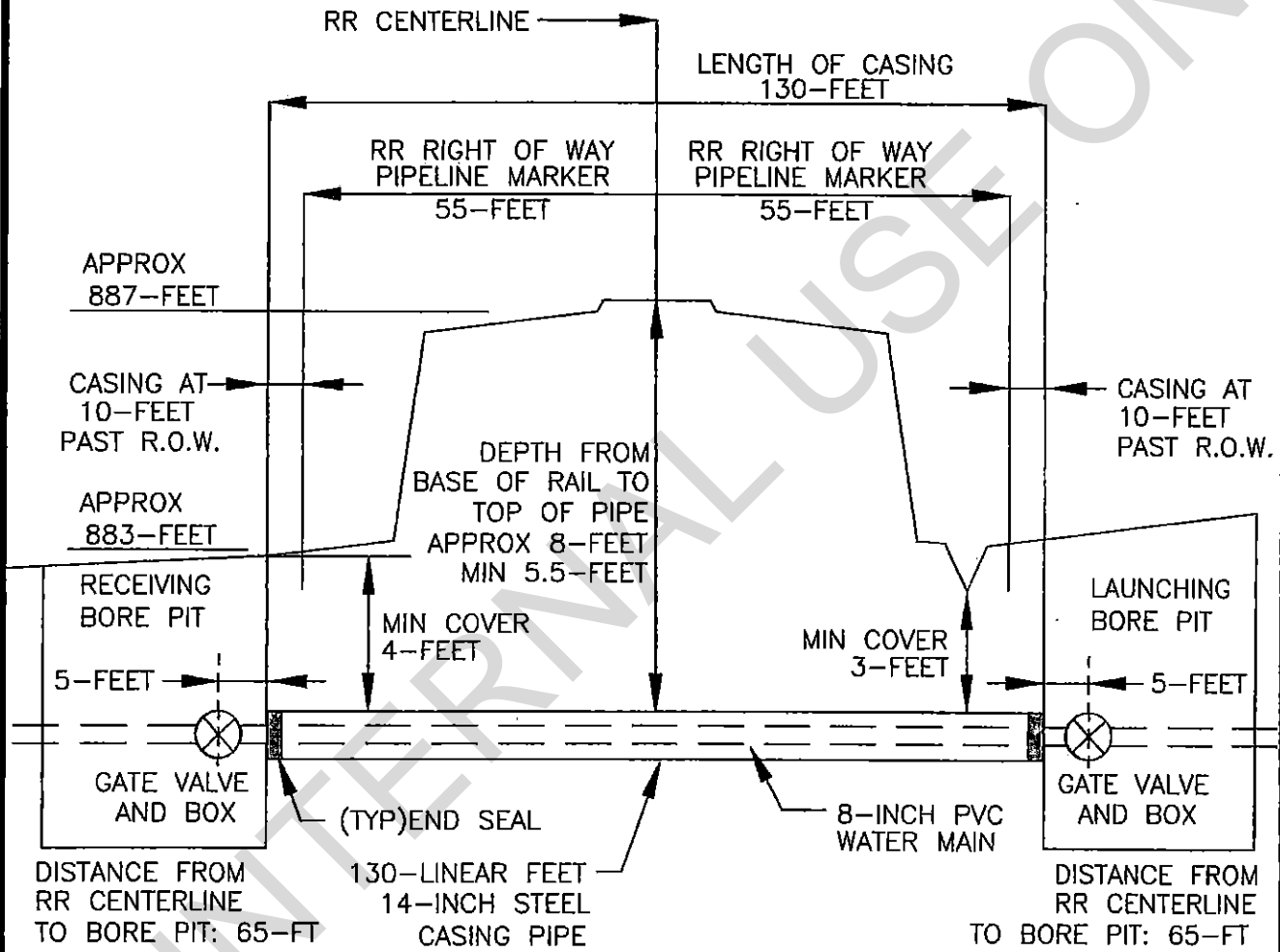


A-1 received 12/9/19
Harrodsburg, Kentucky
Southern Rwy Co
Lat: N37.738733
Long: W84.821757

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1277983-AD



A-1 received 12/9/19
Harrodsburg, Kentucky
Southern Rwy Co
Lat: N37.738733
Long: W84.821757



GENERAL NOTES

1. CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS OF NORFOLK SOUTHERN'S NSCE-8 SPECIFICATIONS
2. PIPELINE AND CROSSING TO BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH LAST APPROVED AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION SPECIFICATIONS FOR PIPELINES CONVEYING FLAMMABLE AND NON-FLAMMABLE SUBSTANCES
3. BLASTING NOT PERMITTED
4. ABANDONED PIPE MUST BE COMPLETELY FILLED WITH CEMENT GROUT OR COMPACTED SAND WITHIN THE LIMITS OF THE NORFOLK SOUTHERN RIGHT-OF-WAY.

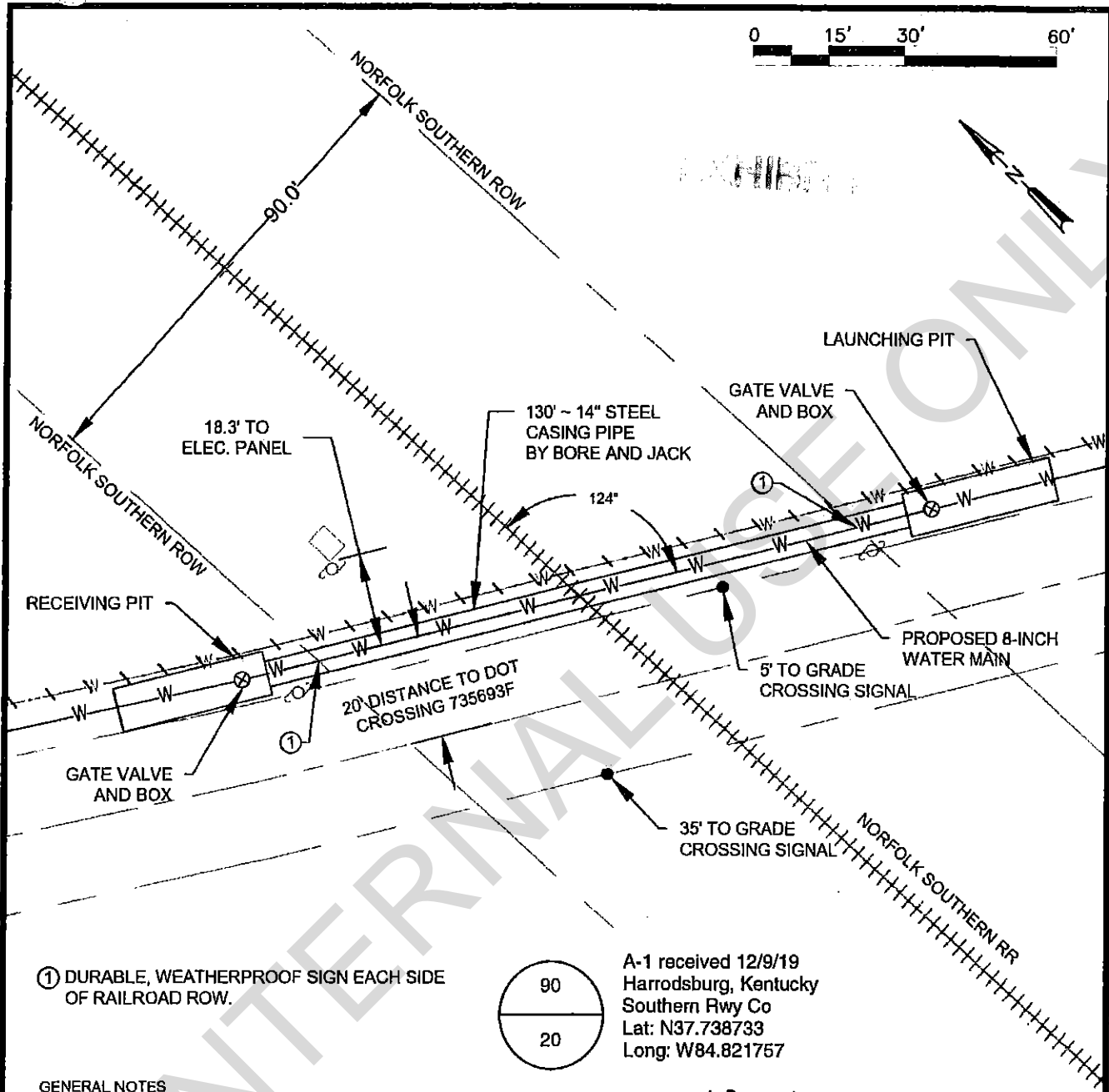
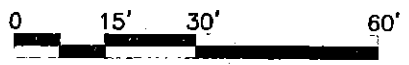
**RAILROAD CROSSING DETAIL - PROFILE VIEW
BELLOWS MILL ROAD AND MONTGOMERY LANE WATER MAIN**

**LAKE VILLAGE WATER ASSOCIATION
CITY OF BURGIN, MERCER COUNTY, KENTUCKY**

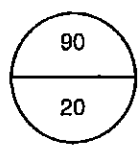


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① DURABLE, WEATHERPROOF SIGN EACH SIDE OF RAILROAD ROW.



A-1 received 12/9/19
 Harrodsburg, Kentucky
 Southern Rwy Co
 Lat: N37.738733
 Long: W84.821757

GENERAL NOTES

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1277983-AD

**RAILROAD CROSSING DETAIL - PLAN VIEW
 BELLOWS MILL ROAD AND MONTGOMERY LANE WATER MAIN
 LAKE VILLAGE WATER ASSOCIATION
 CITY OF BURGIN, MERCER COUNTY, KENTUCKY**



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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR PL
LOUISVILLE, KY 40202

March 3, 2020

Regulatory Division
South Branch
ID No. LRL-2019-1124-sea

Mr. Mike Sanford
Lake Village Water Association
801 Pleasant Hill Drive
P.O. Box 303
Burgin, Kentucky 40310

Dear Mr. Sanford:

This is in response to your request for authorization to impact Mocks Branch and three unnamed tributaries (UTs) of Mocks Branch through the open-trench installation of a new 8" PVC water main as part of the Lake Village Water Association Distribution System Improvement Project. The proposed project would be located in Mercer and Boyle Counties, Kentucky. The information supplied by your agent, Strand Associates, Inc., was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act.

Your project is considered a discharge of backfill or bedding material for utility lines. The project is authorized under the provisions of 33 CFR 330 Nationwide Permit (NWP) No. 12, Utility Line Activities, as published in the Federal Register January 6, 2017. Under the provisions of this authorization you must comply with the enclosed Terms and General Conditions for NWP No. 12, and the following Special Condition:

Tree clearing shall occur during the unoccupied timeframe for the Indiana bat and/or northern long-eared bat between October 1 and March 31. If additional forested areas not previously considered are to be removed, the permittee shall notify the Corps and the United States Fish and Wildlife Service in advance of any clearing.

You must also contact the Kentucky Division of Water (KDOW), to verify that your project is covered by the enclosed Water Quality Certification (WQC) Conditions for NWP No. 12. You may contact them directly at the following address:

Kentucky Energy & Environment Cabinet
Department for Environmental Protection
Division of Water
300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: (502) 564-2150
Email: 401WQC@ky.gov

This verification is valid until March 18, 2022. The enclosed Compliance Certification must be submitted to the District Engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later. Note that we also perform periodic inspections to ensure compliance with our permit conditions and applicable Federal laws. A copy of this letter will be forwarded to your agent and to the KDOW.

If you have any questions, please contact us by writing to the District Regulatory Office at the above address, ATTN: CELRL-RDS, or contact me directly at (502) 315-6711 or Sarah.E.Atherton@usace.army.mil. Any correspondence on this matter should refer to our ID Number LRL-2019-1124-sea.

Sincerely,



Sarah Atherton
Project Manager, South Branch
Regulatory Division

Enclosures

FOR INTERNAL USE ONLY

COORDINATING AGENCY

Ms. Beth Harrod
Kentucky Energy & Environment Cabinet
Division of Water
300 Sower Boulevard
Frankfort, Kentucky 40601

AGENT

Ms. Elizabeth Dienst
Strand Associates, inc.
651 Perimeter Drive
Lexington, Kentucky 40517

FOR INTERNAL USE ONLY

Compliance Certification:

Permit Number: LRL-2019-1124-sea

Name of Permittee: Lake Village Water Association

Date of Issuance: March 3, 2020

Upon completion of the activity authorized by this permit and any mitigation required by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
CELRL-RDS
P.O. Box 59
Louisville, Kentucky 40201

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date



US Army Corps
of Engineers®
Louisville District

2017 Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>

17. Tribal Rights. No activity may impair tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on the listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification (PCN) to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from Corps.

(d) As a result of formal or informal consultation with the USFWS or NMFS the district engineer may add species-specific permit conditions to the NWP.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will review the ESA section 10(a)(1)(B) permit, and if he or she determines that it covers the proposed NWP activity, including any incidental take of listed species that might occur as a result of conducting the proposed NWP activity, the district engineer does not need to conduct a separate section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete PCN whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those

requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause an effect on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, and adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the US are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWP 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g. conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on the both sides of a stream or if the waterbody is a lake or coastal waters. Then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g. riparian areas and/or wetlands compensation) based on what is best for the aquatic environmental on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation if the use of mitigation bank or in-lieu fee program credits is not appropriate and practicable.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality

Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or USEPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally

authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires Section 408 permission is not authorized by the NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification (PCN). (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other water for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an

illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that may be affected by the proposed activity. For any NWP activity that requires pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. Federal permittees must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of PCN Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require preconstruction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line or ordinary high water mark.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural

resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, sites specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of PCN notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

Terms for Nationwide Permit No. 12

Utility Line Activities

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of utility lines, including outfall and intake structures. There must be no change in pre-construction contours of waters of the United States. A “utility line” is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication. The term “utility line” does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream

bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: Where the utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: For utility line activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Utility line activities must comply with 33 CFR 330.6(d).

Note 3: Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

Note 4: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 5: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 6: This NWP authorizes utility line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

Note 7: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

Note 8: For NWP 12 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, “District Engineer’s Decision.” The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

FOR INTERNAL USE ONLY

2017 Nationwide Permits Regional and Permit-Specific Conditions COMMONWEALTH OF KENTUCKY

These regional conditions are in addition to, but do not supersede, the requirements in the Federal Register (Volume 82, No. 4 of January 6, 2017, pp 1860).

Notifications for all Nationwide Permits (NWP) shall be in accordance with General Condition No. 32.

1. For activities that would impact Outstanding State or National Resource Waters (OSNRWs), Exceptional Waters (EWs), Coldwater Aquatic Habitat Waters (CAHs) under the Endangered Species Act for the NWP listed below, a Pre-Construction Notification (PCN) will be required to the Corps. The Corps will coordinate with the appropriate resource agencies (see attached list) on these NWP (Section 404 activities), for impacts to these waters.

NWP 3 (Maintenance)

NWP 4 (Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities)

NWP 5 (Scientific Measurement Devices)

NWP 6 (Survey Activities)

NWP 7 (Outfall Structures and Associated Intake Structures)

NWP 12 (Utility Line Activities)

NWP 13 (Bank Stabilization)

NWP 14 (Linear Transportation Projects)

NWP 15 (U.S. Coast Guard Approved Bridges)

NWP 16 (Return Water from Upland Contained Disposal Areas)

NWP 17 (Hydropower Projects)

NWP 18 (Minor Discharges)

NWP 19 (Minor Dredging)

NWP 20 (Response Operations for Oil or Hazardous Substances)

NWP 21 (Surface Coal Mining Activities)

NWP 22 (Removal of Vessels)

NWP 23 (Approved Categorical Exclusions)

NWP 25 (Structural Discharges)

NWP 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities)

NWP 29 (Residential Developments)

NWP 30 (Moist Soil Management for Wildlife)

NWP 31 (Maintenance of Existing Flood Control Facilities)

NWP 32 (Completed Enforcement Actions)

NWP 33 (Temporary Construction, Access, and Dewatering)

NWP 34 (Cranberry Production Activities)

NWP 36 (Boat Ramps)

NWP 37 (Emergency Watershed Protection and Rehabilitation)

NWP 38 (Cleanup of Hazardous and Toxic Waste)

NWP 39 (Commercial and Institutional Developments)

NWP 40 (Agricultural Activities)

- NWP 41 (Reshaping Existing Drainage Ditches)
NWP 42 (Recreational Facilities)
NWP 43 (Stormwater Management Facilities)
NWP 44 (Mining Activities)
NWP 45 (Repair of Uplands Damaged by Discrete Events)
NWP 46 (Discharges in Ditches)
NWP 48 (Commercial Shellfish Aquaculture Activities)
NWP 49 (Coal Remining Activities)
NWP 50 (Underground Coal Mining Activities)
NWP 51 (Land-Based Renewable Energy Generation Facilities)
NWP 52 (Water-Based Renewable Energy Generation Pilot Projects)
NWP 53 (Removal of Low-Head Dams)
NWP 54 (Living Shorelines)
2. In addition to the notification and agency coordination requirements in the NWP's, for impacts greater than 0.25 acres in all "waters of the U.S." for the NWP's listed below, a PCN will be required to the Corps. The Corps will coordinate with the appropriate resource agencies (see attached list) on these NWP's:
- NWP 3 (Maintenance)
NWP 7 (Outfall Structures and Associated Intake Structures)
NWP 12 (Utility Line Activities)
NWP 14 (Linear Transportation Projects)
NWP 29 (Residential Developments)
NWP 39 (Commercial and Institutional Developments)
NWP 40 (Agricultural Activities)
NWP 41 (Reshaping Existing Drainage Ditches)
NWP 42 (Recreational Facilities)
NWP 43 (Stormwater Management Facilities)
NWP 44 (Mining Activities)
NWP 51 (Land-Based Renewable Energy Generation Facilities)
NWP 52 (Water-Based Renewable Energy Generation Pilot Projects)
NWP 53 (Removal of Low-Head Dams)
3. For activities in all "waters of the U.S." for the NWP's listed below, a PCN will be required to the Corps. The Corps will coordinate with the appropriate resource agencies (see attached list) on these NWP's:
- NWP 21 (Surface Coal Mining Activities)
NWP 27 (Aquatic Habitat Restoration, Establishment & Enhancement Activities)
NWP 49 (Coal Remining Activities)
NWP 50 (Underground Coal Mining Activities)
4. Nationwide Permit No. 14 – Linear Transportation Projects.
- (a) New road alignments or realignments are limited to a permanent loss of 500 linear feet of intermittent or perennial stream length at each crossing. Road crossings with permanent losses greater than 500 linear feet of intermittent or perennial stream associated with new

alignments or realignments will be evaluated as an individual permit (i.e., a Letter of Permission or as a Standard Individual Permit).

- (b) In addition to the notification requirements contained in NWP 14, the permittee must submit a PCN to the district engineer prior to commencing the activity for the permanent loss of greater than 300 feet of ephemeral, intermittent and perennial stream of all "waters of the U.S." (See General Condition 32 and the definition of "loss of waters of the United States" in the Nationwide Permits for further information.)
5. Notification in accordance with General Condition 32 is required to the Corps for all activities which are subject to jurisdiction under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 6. All applications are required as both a paper copy and in an electronic media format, including electronic mail or compact disc.
 7. For all activities, the applicant shall review the U.S. Fish and Wildlife Service's IPaC website: <http://ecos.fws.gov/ipac> to determine if the activity might affect threatened and/or endangered species or designated critical habitat. If federally-listed species or designated critical habitat are identified, a PCN in accordance with General Condition 18 and 32 would be triggered and the official species list generated from the IPaC website must be submitted with the PCN.

Further information:

Outstanding State or National Resource Water (OSNRWs), Exceptional Waters (EWs), and Coldwater Aquatic Habitat Waters (CAHs) are waters designated by the Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet. The list can be found at the following link: <http://eppcapp.ky.gov/spwaters/>

Information on Pre-Construction Notification (PCN) can be found at NWP General Condition No. 32 in the Federal Register (Volume 81, No. 105 of June 1, 2017, pp 35211).

COORDINATING RESOURCE AGENCIES

Chief, Wetlands Regulatory Section
U.S. Environmental Protection Agency
Region IV
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

Supervisor
U.S. Fish & Wildlife Service
JC Watts Federal Building, Room 265
330 West Broadway
Frankfort, Kentucky 40601

Supervisor
401 Water Quality Certification
Kentucky Division of Water
300 Sower Boulevard, 3rd Floor
Frankfort, KY 40601

Commissioner
Department of Fish and Wildlife Resources
#1 Game Farm Road
Frankfort, Kentucky 40601

Executive Director and State Historic Preservation Officer
Kentucky Heritage Council
410 High Street
Frankfort, Kentucky 40601

**ADDITIONAL COORDINATING RESOURCE AGENCY
FOR NWPS 21, 49, AND 50**

Kentucky Department for Natural Resources
Division of Mine Permits
300 Sower Boulevard
Frankfort, KY 40601



ENCROACHMENT PERMIT

KYTC KEPT #: 07-2020-00013 _____
Permittee: Lake Village Water Association _____
Permit Type / Subtype: Utilities / Water _____
Work Completion Date: 7/1/2021 _____

INDEMNITIES		
Type	Amount Required	Tracking Number
Performance Bond	\$15,000.00	3-079-195-7
Cash / Check	\$0.00	
Self-Insured	\$0.00	
Payment Bond	\$0.00	
Liability Insurance	\$0.00	

This permit has been: **APPROVED** **DENIED**

Daniel Kucela D7 Engineering Support - TEBM 3/27/2020

SIGNATURE TITLE DATE

The TC 99-1(B), including the application TC-99 1(A) and all related and accompanying documents and drawings make up the permit. It is not a permit unless both the TC 99-1(A) and TC 99-1(B) are both present.

LOCATION(S)			
Description	County - Route	Latitude	Longitude
	Mercer - KY 152	37.757366	-84.799516
	Mercer - US 127	37.704955	-84.807543



To Submit a Locate Request
 24 Hours a Day, Seven Days a Week:
 Call 811 or 800-752-6007



APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: _____

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT Lake Village Water Association	ADDRESS 801 Pleasant Hill Drive	CITY Burgin
EMAIL mike@lakevillagewater.org	P.O. Box 303	STATE KY
		ZIP 40310
CONTACT NAME 1 Mike Sanford	EMAIL mike@lakevillagewater.org	PHONE # (859)748-5642
		CELL # (859)265-6330
CONTACT NAME 2 (if applicable)	EMAIL	PHONE #
		CELL #

SECTION 2: PROPOSED WORK LOCATION

ADDRESS US-127	CITY N/A	STATE Kentucky	ZIP N/A
COUNTY Mercer	ROUTE # US-127	MILE POINT 0 -1.47	LONGITUDE (X) 37° 45' 26" N
			LATITUDE (Y) 84° 47' 56" W

ADDITIONAL LOCATION INFORMATION:

Mile Point: from mile 0 (Mercer/Boyle County Line) to mile 1.47 (Mercer County)

FOR KYTC USE ONLY

PERMIT TYPE: Air Right Entrance Utilities Vegetation Removal Other: _____

ACCESS: Full Partial by Permit **LOCATION:** Left Right Crossing

SECTION 3: GENERAL DESCRIPTION OF WORK

State right-of-way encroachment will occur along the state highway. The attached plans detail the locations and nature of encroachment. The work involves the installation of water main. There is 10,400 linear feet of watermain construction running parallel to US-127. Additionally, KY-152 has one 60' crossing of water main. No lane blockage is anticipated to be required.

Supplemental Section 2 information for the two crossings:

County: Mercer, Route: KY-152, Mile Point: 12.30, Longitude: 84°47'56" W, Latitude: 37°45'26" N

THE UNDERSIGNED APPLICANT(s), being duly authorized representative(s) or owner(s), DO AGREE TO ALL ORIGINAL UNEDITED TERMS AND CONDITIONS ON THE TC 99-1A, pages 1-4.

Mike D. Sanford
 SIGNATURE

12/31/19
 DATE

This is not a permit unless and until the applicant(s) receives an approved TC 99-1B from KYTC. This application shall become void if not approved by the cancellation date. The cancellation date shall be a minimum of one year



APPLICATION FOR ENCROACHMENT PERMIT

TERMS AND CONDITIONS

1. The permit, including this application and all related and accompanying documents and drawings making up the permit, remains in effect and is binding upon the Applicant/Permittee, its successors and assigns, as long as the encroachment(s) exists and also until the permittee is finally relieved by the Department of Highways from all its obligations.
2. Applicant shall meet all requirements of the Clean Water Act if the project will disturb one acre or more, the applicant shall obtain a KPDES KYR10 Permit from the Kentucky Division of Water. All disturbed areas shall meet the requirements of the Department of Highway's Standard Specifications, Sections 212 and 213, as amended.
3. **INDEMNITY:**
 - A. **PERFORMANCE BOND:** The permittee shall provide to the Department a performance bond according to the Permits Manual, Section PE-203 as a guarantee of conformance with the Department's Encroachment Permit requirements.
 - B. **PAYMENT BOND:** At the discretion of the department, a payment bond shall be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
 - C. **LIABILITY INSURANCE:** Liability insurance shall be required of the permittee (in an amount approved by the department) to cover all liabilities associated with the encroachment.
 - D. It shall be the responsibility of the permittee, its successors and assigns, to maintain all indemnities in full force and effect until the permittee is authorized to release the indemnity by the Department.
4. A copy of this application and all related documents making up the approved permit shall be given to the applicant and shall be made readily available for review at the work site at all times.
5. Perpetual maintenance of the encroachment is the responsibility of the permittee, its successors and assigns, with the approval of the Department as required, unless otherwise stated.
6. Permittee, its successors and assigns, shall comply with and agree to be bound by the requirements and terms of (a) this application and all related documents making up the approved permit, (b) by the Department's Permits Manual, and (c) by the Manual on Uniform Traffic Control Devices, both manuals as revised to and in effect on the date of issuance of the permit, all of which documents are made a part thereof by this reference. Compliance by the permittee, its successors and assigns, with subsequent revisions to applicable provisions of either manual or other policy of the Department may be made a condition of allowing the encroachment to persist under the permit.
7. Permittee agrees that this and any encroachment may be ordered removed by the Department at any time, and for any reason, upon thirty days written notice to the last known address of the applicant or to the address at the location of the encroachment. The permittee agrees that the cost of removing and of restoring the associated right-of-way is the responsibility of the permittee, its successors and assigns.
8. Permittee, its successors and assigns, agree that if the Department determines that motor vehicular safety deficiencies develop as a result of the installation or use of the encroachment, the permittee, its successors and assigns, shall provide and bear the expenses to adjust, relocate, or reconstruct the facilities, add signs, auxiliary lanes, or other corrective measures reasonably deemed necessary by the Department within a reasonable time after receipt of a written notice of such deficiency. The period within which such adjustments, relocations, additions, modifications, or other corrective measures must be completed will be specified in the notice.
9. Where traffic signals are required as a condition of granting the requested permit or are thereafter required to correct motor vehicular safety deficiencies, as determined by the Department, the costs for signal equipment and installation(s) shall be borne by the permittee, its successors and assigns and the Department in its reasonable discretion and only in accordance with the Department's current policy set forth in the Traffic Operations Manual and Permits Manual. Any modifications to the permittee's entrance necessary to accommodate signalization (including necessary easement(s) on private property) shall be the responsibility of the permittee, its successors and assigns, at no expense to the Department.



APPLICATION FOR ENCROACHMENT PERMIT

10. The requested encroachment shall not infringe on the frontage rights of an abutting owner without their written consent as hereinafter described. Each abutting owner shall express their consent, which shall be binding on their successors and assigns, by the submission of a notarized statement as follows, "I (we), _____, hereby consent to the granting of the permit requested by the applicant along Route _____, which permit does affect frontage rights along my (our) adjacent real property." By signature(s) _____, subscribed and sworn by _____, on this date _____.
11. The permit, if approved, is subject to the agreement that it shall not interfere with any similar rights or permit(s) previously granted to any other party, except as otherwise provided by law.
12. Permittee shall include documentation which describes the facilities to be constructed. Permittee, its successors and assigns, agree as a condition of the granting of the permit to construct and maintain any and all permitted facilities or other encroachments in strict accordance with the submitted and approved permit documentation and the policies and procedures of the Department. Permittee, its successors and assigns, shall not use facilities authorized herein in any manner contrary to that prescribed by the approved permit. Only normal usage as contemplated by the parties and by this application and routine maintenance are authorized by the permit.
13. Permittee, its successors and assigns, at all times from the date permitted work is commenced until such time as all permitted facilities or other encroachments are removed from the right-of-way and the right-of-way restored, shall defend, protect, indemnify and save harmless the Department from any and all liability claims and demands arising out of the work, encroachment, maintenance, or other undertaking by the permittee, its successors and assigns, related or undertaken pursuant to the granted permit, due to any claimed act or omission by the permittee, its servants, agents, employees, or contractors. This provision shall not inure to the benefit of any third party nor operate to enlarge any liability of the Department beyond that existing at common law or otherwise if this right to indemnity did not exist.
14. Upon a violation of any provision of the permit, or otherwise in its reasonable discretion, the Department may require additional action by the permittee, its successors and assigns, up to and including the removal of the encroachment and restoration of the right-of-way. In the event additional actions required by the Department under the permit are not undertaken as ordered and within a reasonable time, the Department may in its discretion cause those or other additional corrective actions to be undertaken and the Department shall recover the reasonable costs of those corrective actions from the permittee, its successors and assigns.
15. Permittee, its successors and assigns, shall use the encroachment premises in compliance with all requirements of federal law and regulation, including those imposed pursuant to Title VI of the Civil Right Act of 1964 (42 U.S.C. § 2000d et seq.) and the related regulations of the U.S. Department of Transportation in Title 49 C.F.R. Part 21, all as amended.
16. Permittee, its successors and assigns, agree that if the Department determines it is necessary for the facilities or other encroachment authorized by the permit to be removed, relocated or reconstructed in connection with the reconstruction, relocation or improvement of a highway, the Department may revoke permission for the encroachment to remain under the permit and may order its removal, relocation or reconstruction by the permittee, its successors and assigns, at the expense of the permittee, except where the Department is required by law to pay any or all of those costs.



APPLICATION FOR ENCROACHMENT PERMIT

17. Permittee agrees that the authorized permit is personal to the permittee and shall remain in effect until such time as (a) the permittee's rights to the adjoining real property to have benefitted from the requested encroachment have been relinquished, (b) until all permit obligations have been assumed by appropriate successors and assigns, and (c) unless and until a written release from permit obligations has been granted by the Department. The permit and its requirements shall also bind the real property to have benefitted from the requested encroachment to the extent permitted by law. The permit and the related encroachment become the responsibility of the successors and assigns of the permittee and the successors and assigns of each property owner benefitting from the encroachment, or the encroachment may not otherwise permissibly continue to be maintained on the right-of-way. (Does not apply to utility encroachments serving the general public.)
18. If work authorized by the permit is within a highway construction project in the construction phase, it shall be the responsibility of the permittee to make personal contact with the Department's Engineer on the project in order to coordinate all permitted work with the Department's prime contractor on the project.
19. This permit is not intended to, nor shall it, affect, alter or alleviate any requirement imposed upon the permittee, its successors and assigns, by any other agency.
20. Permittee, its successors and assigns, agree to contain and maintain all dirt, mud, and other debris emanating from the encroachment away from the surrounding right-of-way and the travel way of the highway hereafter and at all times that its obligations under the permit remain in effect.
21. Before You Dig: The contractor is instructed to call 1-800-752-6007 to reach KY 811, the One-Call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that the owners of underground facilities are not required to be members of the KY 811 One-Call Before U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Clerk to determine what utility companies have facilities in the area.



Know what's below. Call before you dig.

To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007



ENCROACHMENT PERMIT

KYTC KEPT #: 07-2020-00012

Permittee: Lake Village Water Association

Permit Type / Subtype: Utilities / Water

Work Completion Date: 7/1/2021

INDEMNITIES		
Type	Amount Required	Tracking Number
Performance Bond	\$15,000.00	3-079-195-7
Cash / Check	\$0.00	
Self-Insured	\$0.00	
Payment Bond	\$0.00	
Liability Insurance	\$0.00	

This permit has been: **APPROVED** **DENIED**

Daniel Kucela D7 Engineering Support - TEBM 3/27/2020

SIGNATURE TITLE DATE

The TC 99-1(B), including the application TC-99 1(A) and all related and accompanying documents and drawings make up the permit. It is not a permit unless both the TC 99-1(A) and TC 99-1(B) are both present.

LOCATION(S)			
Description	County - Route	Latitude	Longitude
	Boyle - US 127	37.687446	-84.797416



To Submit a Locate Request
 24 Hours a Day, Seven Days a Week:
 Call 811 or 800-752-6007



APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: _____

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT Lake Village Water Association	ADDRESS 801 Pleasant Hill Drive	CITY Burgin
EMAIL mike@lakevillagewater.org	P.O. Box 303	STATE KY
		ZIP 40310
CONTACT NAME 1 Mike Sanford	EMAIL mike@lakevillagewater.org	PHONE # (859)748-5642
		CELL # (859)265-6330
CONTACT NAME 2 (if applicable)	EMAIL	PHONE #
		CELL #

SECTION 2: PROPOSED WORK LOCATION

ADDRESS US-127	CITY N/A	STATE Kentucky	ZIP N/A
COUNTY Boyle	ROUTE # US-127	MILE POINT 9.03 -10.3	LONGITUDE (X) 37° 42' 15" N
			LATITUDE (Y) 84° 48' 26" W

ADDITIONAL LOCATION INFORMATION:

Mile Point: from mile 9.03 (Boyle County) to mile 10.3 (Boyle/Mercer County Line)

FOR KYTC USE ONLY

PERMIT TYPE: Air Right Entrance Utilities Vegetation Removal Other: _____

ACCESS: Full Partial by Permit **LOCATION:** Left Right Crossing

SECTION 3: GENERAL DESCRIPTION OF WORK

State right-of-way encroachment will occur along the state highway. The attached plans detail the locations and nature of encroachment. The work involves the installation of water main. There is 10,400 linear feet of watermain construction running parallel to US-127. Additionally, KY-1896 has one 60' crossing of water main. No lane blockage is anticipated to be required.

Supplemental Section 2 information for the crossing:

County: Boyle, Route: KY-1896, Mile Point: 0.01, Longitude: 84°48'25" W, Latitude: 37°42'15" N

THE UNDERSIGNED APPLICANT(s), being duly authorized representative(s) or owner(s), DO AGREE TO ALL ORIGINAL UNEDITED TERMS AND CONDITIONS ON THE TC 99-1A, pages 1-4.

Mike D. Soudel

SIGNATURE

12/3/19

DATE

This is not a permit unless and until the applicant(s) receives an approved TC 99-1B from KYTC. This application shall become void if not approved by the cancellation date. The cancellation date shall be a minimum of one year



APPLICATION FOR ENCROACHMENT PERMIT

TERMS AND CONDITIONS

1. The permit, including this application and all related and accompanying documents and drawings making up the permit, remains in effect and is binding upon the Applicant/Permittee, its successors and assigns, as long as the encroachment(s) exists and also until the permittee is finally relieved by the Department of Highways from all its obligations.
2. Applicant shall meet all requirements of the Clean Water Act if the project will disturb one acre or more, the applicant shall obtain a KPDES KYR10 Permit from the Kentucky Division of Water. All disturbed areas shall meet the requirements of the Department of Highway's Standard Specifications, Sections 212 and 213, as amended.
3. **INDEMNITY:**
 - A. **PERFORMANCE BOND:** The permittee shall provide to the Department a performance bond according to the Permits Manual, Section PE-203 as a guarantee of conformance with the Department's Encroachment Permit requirements.
 - B. **PAYMENT BOND:** At the discretion of the department, a payment bond shall be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
 - C. **LIABILITY INSURANCE:** Liability insurance shall be required of the permittee (in an amount approved by the department) to cover all liabilities associated with the encroachment.
 - D. It shall be the responsibility of the permittee, its successors and assigns, to maintain all indemnities in full force and effect until the permittee is authorized to release the indemnity by the Department.
4. A copy of this application and all related documents making up the approved permit shall be given to the applicant and shall be made readily available for review at the work site at all times.
5. Perpetual maintenance of the encroachment is the responsibility of the permittee, its successors and assigns, with the approval of the Department as required, unless otherwise stated.
6. Permittee, its successors and assigns, shall comply with and agree to be bound by the requirements and terms of (a) this application and all related documents making up the approved permit, (b) by the Department's Permits Manual, and (c) by the Manual on Uniform Traffic Control Devices, both manuals as revised to and in effect on the date of issuance of the permit, all of which documents are made a part thereof by this reference. Compliance by the permittee, its successors and assigns, with subsequent revisions to applicable provisions of either manual or other policy of the Department may be made a condition of allowing the encroachment to persist under the permit.
7. Permittee agrees that this and any encroachment may be ordered removed by the Department at any time, and for any reason, upon thirty days written notice to the last known address of the applicant or to the address at the location of the encroachment. The permittee agrees that the cost of removing and of restoring the associated right-of-way is the responsibility of the permittee, its successors and assigns.
8. Permittee, its successors and assigns, agree that if the Department determines that motor vehicular safety deficiencies develop as a result of the installation or use of the encroachment, the permittee, its successors and assigns, shall provide and bear the expenses to adjust, relocate, or reconstruct the facilities, add signs, auxiliary lanes, or other corrective measures reasonably deemed necessary by the Department within a reasonable time after receipt of a written notice of such deficiency. The period within which such adjustments, relocations, additions, modifications, or other corrective measures must be completed will be specified in the notice.
9. Where traffic signals are required as a condition of granting the requested permit or are thereafter required to correct motor vehicular safety deficiencies, as determined by the Department, the costs for signal equipment and installation(s) shall be borne by the permittee, its successors and assigns and the Department in its reasonable discretion and only in accordance with the Department's current policy set forth in the Traffic Operations Manual and Permits Manual. Any modifications to the permittee's entrance necessary to accommodate signalization (including necessary easement(s) on private property) shall be the responsibility of the permittee, its successors and assigns, at no expense to the Department.



APPLICATION FOR ENCROACHMENT PERMIT

10. The requested encroachment shall not infringe on the frontage rights of an abutting owner without their written consent as hereinafter described. Each abutting owner shall express their consent, which shall be binding on their successors and assigns, by the submission of a notarized statement as follows, "I (we), _____, hereby consent to the granting of the permit requested by the applicant along Route _____, which permit does affect frontage rights along my (our) adjacent real property." By signature(s) _____, subscribed and sworn by _____, on this date _____.
11. The permit, if approved, is subject to the agreement that it shall not interfere with any similar rights or permit(s) previously granted to any other party, except as otherwise provided by law.
12. Permittee shall include documentation which describes the facilities to be constructed. Permittee, its successors and assigns, agree as a condition of the granting of the permit to construct and maintain any and all permitted facilities or other encroachments in strict accordance with the submitted and approved permit documentation and the policies and procedures of the Department. Permittee, its successors and assigns, shall not use facilities authorized herein in any manner contrary to that prescribed by the approved permit. Only normal usage as contemplated by the parties and by this application and routine maintenance are authorized by the permit.
13. Permittee, its successors and assigns, at all times from the date permitted work is commenced until such time as all permitted facilities or other encroachments are removed from the right-of-way and the right-of-way restored, shall defend, protect, indemnify and save harmless the Department from any and all liability claims and demands arising out of the work, encroachment, maintenance, or other undertaking by the permittee, its successors and assigns, related or undertaken pursuant to the granted permit, due to any claimed act or omission by the permittee, its servants, agents, employees, or contractors. This provision shall not inure to the benefit of any third party nor operate to enlarge any liability of the Department beyond that existing at common law or otherwise if this right to indemnity did not exist.
14. Upon a violation of any provision of the permit, or otherwise in its reasonable discretion, the Department may require additional action by the permittee, its successors and assigns, up to and including the removal of the encroachment and restoration of the right-of-way. In the event additional actions required by the Department under the permit are not undertaken as ordered and within a reasonable time, the Department may in its discretion cause those or other additional corrective actions to be undertaken and the Department shall recover the reasonable costs of those corrective actions from the permittee, its successors and assigns.
15. Permittee, its successors and assigns, shall use the encroachment premises in compliance with all requirements of federal law and regulation, including those imposed pursuant to Title VI of the Civil Right Act of 1964 (42 U.S.C. § 2000d et seq.) and the related regulations of the U.S. Department of Transportation in Title 49 C.F.R. Part 21, all as amended.
16. Permittee, its successors and assigns, agree that if the Department determines it is necessary for the facilities or other encroachment authorized by the permit to be removed, relocated or reconstructed in connection with the reconstruction, relocation or improvement of a highway, the Department may revoke permission for the encroachment to remain under the permit and may order its removal, relocation or reconstruction by the permittee, its successors and assigns, at the expense of the permittee, except where the Department is required by law to pay any or all of those costs.



APPLICATION FOR ENCROACHMENT PERMIT

17. Permittee agrees that the authorized permit is personal to the permittee and shall remain in effect until such time as (a) the permittee's rights to the adjoining real property to have benefitted from the requested encroachment have been relinquished, (b) until all permit obligations have been assumed by appropriate successors and assigns, and (c) unless and until a written release from permit obligations has been granted by the Department. The permit and its requirements shall also bind the real property to have benefitted from the requested encroachment to the extent permitted by law. The permit and the related encroachment become the responsibility of the successors and assigns of the permittee and the successors and assigns of each property owner benefitting from the encroachment, or the encroachment may not otherwise permissibly continue to be maintained on the right-of-way. (Does not apply to utility encroachments serving the general public.)
18. If work authorized by the permit is within a highway construction project in the construction phase, it shall be the responsibility of the permittee to make personal contact with the Department's Engineer on the project in order to coordinate all permitted work with the Department's prime contractor on the project.
19. This permit is not intended to, nor shall it, affect, alter or alleviate any requirement imposed upon the permittee, its successors and assigns, by any other agency.
20. Permittee, its successors and assigns, agree to contain and maintain all dirt, mud, and other debris emanating from the encroachment away from the surrounding right-of-way and the travel way of the highway hereafter and at all times that its obligations under the permit remain in effect.
21. Before You Dig: The contractor is instructed to call 1-800-752-6007 to reach KY 811, the One-Call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that the owners of underground facilities are not required to be members of the KY 811 One-Call Before U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Clerk to determine what utility companies have facilities in the area.



Know what's below. Call before you dig.

To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007

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AMERICAN IRON AND STEEL SAMPLE CERTIFICATION

Sample Certification

The following information is provided as a sample letter of step certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name
Company Address
City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

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USEPA DE MINIMIS WAIVER



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

DECISION MEMORANDUM

SUBJECT: De Minimis Waiver of Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA), 2014

FROM: Nancy K. Stoner
Acting Assistant Administrator

The EPA is hereby granting a nationwide waiver pursuant to the “American Iron and Steel (AIS)” requirements of P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), section 436 under the authority of Section 436(b)(1) (public interest waiver) for de minimis incidental components of eligible water infrastructure projects. This action permits the use of products when they occur in de minimis incidental components of such projects funded by the Act that may otherwise be prohibited under section 436(a). Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed 1 percent of the total cost of the materials used in and incorporated into a project.

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an “American Iron and Steel” (AIS) requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use specific domestic iron and steel products that are produced in the United States if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Fiscal Year 2014, unless the agency determines it necessary to waive this requirement based on findings set forth in Section 436(b). The Act states, “[the requirements] shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency...finds that— (1) applying subsection (a) would be inconsistent with the public interest” 436(b)(1).

In implementing section 436 of the Act, the EPA must ensure that the section's requirements are applied consistent with congressional intent in adopting this section and in the broader context of the purposes, objectives, and other provisions applicable to projects funded under the SRF. Water infrastructure projects typically contain a relatively small number of high-cost components incorporated into the project. In bid solicitations for a project, these high-cost components are generally described in detail via project specific technical specifications. For these major components, utility owners and their contractors are generally familiar with the conditions of availability, the potential alternatives for each detailed specification, the approximate cost, and the country of manufacture of the available components.

Every water infrastructure project also involves the use of thousands of miscellaneous, generally low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the country of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in bulk, mark them as properly incidental. Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc. Examples of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

The EPA undertook multiple inquiries to identify the approximate scope of de minimis incidental components within water infrastructure projects during the implementation of the American Reinvestment and Recovery Act (ARRA) and its requirements (Buy American provisions, specifically). The inquiries and research conducted in 2009 applies suitably for the case today. In 2009, the EPA consulted informally with many major associations representing equipment manufacturers and suppliers, construction contractors, consulting engineers, and water and wastewater utilities, and performed targeted interviews with several well-established water infrastructure contractors and firms who work in a variety of project sizes, and regional and demographic settings to ask the following questions:

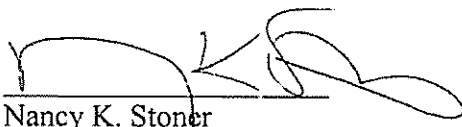
- What percentage of total project costs were consumables or incidental costs?
- What percentage of materials costs were consumables or incidental costs?
- Did these percentages vary by type of project (drinking water vs. wastewater treatment plant vs. pipe)?

The responses were consistent across the variety of settings and project types, and indicated that the percentage of total costs for drinking water or wastewater infrastructure projects represented by these incidental components is generally not in excess of 5 percent of the total cost of the materials used in and incorporated into a project. In drafting this waiver, the EPA has considered the de minimis proportion of project costs generally represented by each individual type of these incidental components within the many types of such components comprising those percentages, the fact that these types of incidental components are obtained by contractors in many different ways from many different sources, and the disproportionate cost and delay that would be imposed on projects if the EPA did not issue this waiver.

Assistance recipients who wish to use this waiver should in consultation with their contractors determine the items to be covered by this waiver and must retain relevant documentation (i.e., invoices) as to those items in their project files.

If you have any questions concerning the contents of this memorandum, please contact Timothy Connor, Chemical Engineer, Municipal Support Division, at connor.timothy@epa.gov or (202) 566-1059 or Kirsten Anderer, Environmental Engineer, Drinking Water Protection Division, at anderer.kirsten@epa.gov or (202) 564-3134.

Issued on: APR 15 2014

Approved by: 
Nancy K. Stoner
Acting Assistant Administrator

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DIVISION 50

STANDARD SPECIFICATIONS FOR UTILITY AND STREET CONSTRUCTION
IN
KENTUCKY

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SECTION 1–MATERIALS AND EQUIPMENT

1.1 GENERAL

Materials provided shall be suitable for the conditions in which they are being installed and used. CONTRACTOR shall review installation requirements of the Contract with material suppliers and incorporate any additional installation requirements necessary to meet the required use within the price bid for the Work.

All material shall conform to the type, size, and shape shown on the Drawings and as specified.

All material in contact with potable water shall meet NSF Standards 60 and 61.

All pipe and materials used in performance of the Work shall be clearly marked as to strength, class, or grade. Pipe and materials not so marked shall be subject to rejection.

When requested by ENGINEER, material suppliers shall furnish certificates of compliance indicating that all tests required by the various Standards have been conducted and that the test results comply with the Standards.

1.1.1 REFERENCED SPECIFICATIONS

Unless the text indicates otherwise (e.g., see Materials Standards), Standard Specifications shall refer to Division 50 Standard Specifications for Utility and Street Construction in Kentucky.

KYDOH Specifications in the Standard Specifications shall refer to the *State of Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Latest Edition*.

Best Management Practices in the Standard Specifications shall refer to *Kentucky's Best Management Practices for Construction Activities*.

1.1.2 MATERIAL STANDARDS

This listing of Material Standards is provided for convenience only and may not be all inclusive.

AASHTO	M36	Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains.
	M148	Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
	M167	Standard Specifications for Corrugated Steel Structural Plate, Zinc-Coated, for Field-Bolted Pipe, Pipe-Arches, and Arches.
	M252	Standard Specifications for Corrugated Polyethylene Drainage Pipe.
	M294	Standard Specifications for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in) Diameter.
ACI	211.1	Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.

	305.1	Specification for Hot Weather Concreting.
	306.1	Standard Specification for Cold Weather Concreting.
ANSI	Z60.1	American Standard for Nursery Stock.
ASME	B16.1	Cast Iron Pipe Flanges and Flanged Fittings Classes 25, 125, and 250.
ASTM	A48	Standard Specification for Gray Iron Castings.
	A126	Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
	A240	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
	A479	Standard Specification for Stainless Steel Bars and Shapes for Use in Boilers and Other Pressure Vessels.
	A536	Standard Specification for Ductile Iron Castings
	A615	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
	B62	Standard Specification for Composition Bronze or Ounce Metal Castings.
	B88	Standard Specification for Seamless Copper Water Tube.
	C14	Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe.
	C32	Standard Specification for Sewer and Manhole Brick (Made From Clay or Shale).
	C33	Standard Specification for Concrete Aggregates.
	C76	Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
	C90	Standard Specification for Loadbearing Concrete Masonry Units.
	C139	Standard Specification for Concrete Masonry Units for Construction of Catch Basins and Manholes.
	C140	Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units.
	C150	Standard Specification for Portland Cement.
	C270	Standard Specification for Mortar for Unit Masonry.
	C301	Standard Test Methods for Vitrified Clay Pipe.

C425	Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings.
C443	Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
C470	Standard Specification for Molds for Forming Concrete Test Cylinder Vertically.
C478	Standard Specification for Precast Reinforced Concrete Manhole Sections.
C497	Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
C507	Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe.
C655	Standard Specification for Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe.
C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated.
C828	Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines.
C913	Standard Specification for Precast Concrete Water and Wastewater Structures.
C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
C969	Standard Practice for Infiltration and Exfiltration Testing of Installed Precast Concrete Pipe Sewer Lines.
C990	Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
C1103	Standard Practice for Joint Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.
C1214	Standard Test Method for Concrete Pipe Sewerlines by Negative Air Pressure (Vacuum) Test Method.
C1244	Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.
C1433	Standard Specifications for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers.
C1628	Standard Specification for Joints for Concrete Gravity Flow Sewer Pipe, Using Rubber Gaskets.
C1677	Standard Specification for Joints for Concrete Box, Using Rubber Gaskets.
D698	Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³ (600 kN-m/m ³)).
D1557	Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³ (2,700 kN-m/m ³)).
D1784	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

D1785	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
D2152	Standard Test Method for Adequacy of Fusion of Extruded Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion.
D2240	Standard Test Method for Rubber Property—Durometer Hardness.
D2241	Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
D2321	Standard Practice for Underground Installation of Flexible Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
D2339	Standard Test Method for Strength Properties of Adhesives in Two-Ply Wood Construction in Shear by Tension Loading.
D2412	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading.
D2464	Standard Specification for Threaded Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
D2466	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
D2467	Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
D2564	Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems.
D2672	Standard Specification for Joints for IBS PVC Pipe Using Solvent Cement.
D2680	Standard Specification for Acrylonitrile Butadiene Styrene (ABS) and Poly (Vinyl Chloride) (PVC) Composite Sewer Piping.
D2855	Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings.
D3034	Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
D3139	Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
D3212	Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
D3350	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
D3965	Standard Classification System and Basis for Specifications for Rigid Acrylonitrile Butadiene Styrene (ABS) Materials for Pipe and Fittings.
D4101	Standard Specification for Polypropylene Injection and Extrusion Materials.
D4475	Standard Test Method for Apparent Horizontal Shear Strength of Pultruded Reinforced Plastic Rods By The Short-Beam Method.
F477	Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

	F593	Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
	F594	Standard Specification for Stainless Steel Nuts.
	F679	Standard Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings.
	F794	Standard Specification for Poly (Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.
	F1417	Standard Practice for Installation Acceptance of Plastic Non-pressure Sewer Lines Using Low-Pressure Air.
AWWA	C104	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
	C105	Polyethylene Encasement for Ductile-Iron Pipe Systems.
	C110	Ductile-Iron and Gray-Iron Fittings.
	C111	Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
	C115	Flanged Ductile-Iron Pipe With Ductile-Iron or Gray-Iron Threaded Flanges.
	C150	Thickness Design of Ductile-Iron Pipe.
	C151	Ductile-Iron Pipe, Centrifugally Cast, for Water.
	C153	Ductile-Iron Compact Fittings.
	C300	Reinforced Concrete Pressure Pipe, Steel Cylinder Type.
	C301	Prestressed Reinforced Concrete Pressure Pipe, Steel Cylinder Type.
	C302	Reinforced Concrete Pressure Pipe, Noncylinder Type.
	C500	Metal-Seated Gate Valves for Water Supply Service.
	C502	Dry-Barrel Fire Hydrants.
	C504	Rubber-Seated Butterfly Valves.
	C507	Ball Valves, 6 Inches Through 48 Inches (150 mm Through 1,200 mm).
	C508	Swing-Check Valves for Waterworks Service, 2-In. Through 24-In. (50-mm Through 600-mm) NPS
	C509	Resilient-Seated Gate Valves for Water Supply Service.

	C515	Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service.
	C517	Resilient-Seated Cast-Iron Eccentric Plug Valves
	C600	Installation of Ductile-Iron Water Mains and Their Appurtenances.
	C605	Underground Installation of PVC Pressure Pipe and Fittings for Water.
	C651	Disinfecting Water Mains.
	C800	Underground Service Line Valves and Fittings.
	C900	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. Through 12 in. (100 mm Through 300 mm) for Water Transmission and Distribution.
	C901	Polyethylene (PE) Pressure Pipe and Tubing, 1/2 in. (13 mm) Through 3 in. (76 mm), for Water Service.
	C905	Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. Through 48 in. (350 mm Through 1,200 mm) for Water Transmission and Distribution.
	C906	Polyethylene (PE) Pressure Pipe and Fittings, 4 in. Through 65 in. (100 mm Through 1650 mm) for Waterworks.
	C907	Injection-Molded Polyvinyl Chloride (PVC) Pressure Fittings, 4 IN. Through 12 IN. (100 mm Through 300 mm), for Water, Wastewater, and Reclaimed Water Service.
	M55	PE Pipe-Design and Installation.

1.2 PIPE

The type of pipe to be used in the Project shall be as specified in the Standard Applications table in the **SPECIAL PROVISIONS** or as shown on the Drawings.

Rigid pipes are defined as pipe manufactured of such materials as concrete or clay.

Thermoplastic pipe shall be defined as pipe manufactured of such materials as PVC or other plastics.

1.2.1 REINFORCED CONCRETE PIPE

Reinforced concrete pipe shall meet ASTM C76 for circular pipe, ASTM C507 for elliptical pipe, ASTM C655 for D-load pipe, or ASTM C1433 for box culvert pipe.

Not more than one lift hole per length of pipe shall be used in storm sewer. Lift holes will not be permitted in sanitary sewers.

Reinforced concrete pipe shall be of the class as shown on the Drawings or in the **SPECIAL PROVISIONS**, but shall be at least Class III minimum and shall have a minimum "B" wall construction. All reinforced concrete pipe used in the Work shall be of adequate strength to support the construction and trench loads applied. All reinforcing cages shall be circular; elliptical reinforcement will not be

permitted. Reinforcing cage shall extend to the full width into the bell end of the pipe and to within 1 inch of the spigot end of the pipe.

All reinforced concrete pipe and fittings shall be provided with joints and gaskets which meet ASTM C1628 for sanitary sewer and ASTM C443 for storm sewer. Joints for sanitary sewer shall be sealed with rubber gaskets of either continuous O-ring or profile cross section. Joints for storm sewer shall be sealed with rubber gaskets having a continuous O-ring cross section. All pipe shall be specifically built to fit the gasket used.

Nonstandard pipe lengths may be used at manholes and structures as necessary to allow them to be located at the locations identified on the Drawings. Reinforced concrete bends, tees, and reducers shall be manufactured to provide for the required transitions as shown on the Drawings. Sufficient additional reinforcement shall be added at the spring lines and top and bottom of the pipe to prevent shearing after installation. Repairs to complete fabricated pipe fittings shall be such that the completed unit shall have the same strength as that of the remainder of the pipe barrel and the concrete used to complete the section shall not spall or separate.

All pipe shall have smooth interior wall. Sanitary sewer pipe shall be provided with either a smooth exterior wall (i.e., no bell), or with an R-4 big bell joint.

Joints for all smooth exterior wall reinforced concrete sanitary sewer pipe (except where open cut is not allowed) shall be provided with an external bitumastic wrap, Mac Wrap, or equal. Wrap shall be minimum 12 inches wide and shall be secured on the pipe with a minimum of one stainless steel band seal connector on each side of the joint.

Acceptance of reinforced concrete pipe shall be on the basis of plant load-bearing tests, material tests, and inspection of manufactured pipe for visual defects and imperfections.

All reinforced concrete pipe used for sanitary sewer shall be vacuum tested from end to end at the factory in accordance with ASTM C1214. Test result, date, pipe class, date of manufacture, and individualized pipe i.d. shall be clearly marked on each pipe. Written vacuum test results for each pipe i.d. shall be kept and submitted to ENGINEER. ENGINEER shall be provided an opportunity to observe all tests.

Cement used in the manufacture of reinforced concrete pipe shall meet the requirements of ASTM C150 Standard Specification for Portland Cement for Type II cement.

A three-edge bearing test shall be conducted by the manufacturer according to ASTM C497 as proof of design by determining the ultimate load capacity of the pipe. One segment of pipe from each pipe class must pass the three-edge bearing test such that the load required to produce the ultimate load exceeds the load rating of the pipe. The test results shall be maintained in a log and provided to OWNER. Manufacturer shall also maintain concrete cylinder testing data and quality control records to verify that pipe meets the required ASTM standards.

An alkalinity test shall be conducted on the concrete mixture used for each type and class of reinforced concrete pipe used in the Project. The alkalinity test shall be conducted according to ASTM C497 and the alkalinity of all concrete mixtures shall be equal to or greater than 0.2 grams of CaCO_3 equivalent reactivity per gram of concrete. The manufacturer shall complete the alkalinity tests.

The costs of the tests shall be incidental to the pipe cost. CONTRACTOR shall include all such costs in the price bid for the Work. CONTRACTOR shall submit a signed, dated, and certified copy of the test data to OWNER (in a format acceptable to OWNER) for review prior to delivering any pipe to the Project site. No additional compensation will be made to CONTRACTOR for the required testing.

The pipe leakage shall not exceed 150 gallons/day/inch inside diameter/mile of pipe. The manufacturer shall provide a written and signed statement indicating the pipe meets this criterion.

CONTRACTOR shall provide written certification that pipe meets the standards herein.

1.2.2 CLAY PIPE

Vitrified clay pipe and fittings shall conform to ASTM C700. Pipe and fittings shall be extra strength. Joints shall be compression type joints conforming to ASTM C425.

1.2.3 COMPOSITE PIPE (PVC AND ABS)

Composite pipe shall meet the requirements of ASTM D2680. Resin used in the manufacture of PVC composite sewer pipe and fittings shall have cell classification 12454 as defined in ASTM D1784. Resin used in the manufacturer of ABS composite pipe and fittings shall have cell classification of 1-0-2-2-3 of ASTM D3965.

Acceptance of piping shall be subject to tests conducted by an approved testing agency.

Attachment of couplings and saddle fittings and field joining of pipe sections and fittings shall be accomplished by solvent welding or rubber gaskets in accordance with the recommendations of the pipe manufacturer. All exposed filler material shall be field-coated with ABS or PVC Solvent Cement. Approved adapters shall be provided for transitions to other types of pipe.

Pipe shall be subject to rejection for failure to conform to material requirements of ASTM D2680 or for any of the following reasons:

- a. Distortion or puncture of the inner plastic shell. Distortion or punctures of the outer shell shall not be reasons for rejection if the inner shell is unaffected and such exterior distortion or puncture is suitably repaired with a solvent-welded patch.
- b. Voids in the concrete filler at pipe ends, exceeding 1 inch in depth as measured from the pipe end and exceeding 10% of the pipe circumference. However, this pipe may be used if the faulty pipe end is sawed off and field-coated.
- c. Through cracks in coupling.

1.2.4 SOLID WALL PVC

Polyvinyl Chloride (PVC) pipe shall meet the requirements of ASTM D3034 for pipe sizes 4 inches through 15 inches and ASTM F679 for pipe sizes 18 inches through 60 inches.

PVC material for ASTM D3034 pipe shall have cell classification 12454 or 12364 as defined in ASTM D1784. Pipe stiffness shall be minimum 46 psi when tested in accordance with ASTM D2412. Pipe shall have a maximum standard dimension ratio (SDR) of 35.

PVC material for ASTM F679 pipe shall have cell classification 12454 or 12364 as defined in ASTM D1784. Pipe stiffness shall be a minimum 115 psi when tested in accordance with ASTM D2412.

Pipe and fittings shall be the product of one manufacturer and the manufacturer shall have experience records substantiating acceptable performance of the pipe and fittings to be furnished. The minimum wall thickness of fittings shall be the same as the pipe to which it connects.

Acceptance of piping and fittings shall be subject to tests conducted by an approved testing agency in accordance with ASTM D3034 and/or ASTM F679.

Fittings such as saddles, elbows, tees, wyes, and others shall be of material and construction corresponding to and have a joint design compatible with the adjacent pipe. Approved adapters shall be provided for transitions to other types of pipe.

Joints shall be of the elastomeric type for pipes 4 inches or larger and elastomeric or solvent cement for pipes less than 4 inches.

Elastomeric joints shall be a bell and spigot joint conforming to ASTM D3212 sealed by a rubber gasket conforming to ASTM F477 so that the assembly will remain watertight under all conditions of service, including the movements resulting from the expansion, contraction, settlement, and deformation of the pipe. Bells shall be formed integrally with the pipe and shall contain a factory-installed positively restrained gasket.

Solvent cement joints shall be assembled using solvent cement obtained from the pipe manufacturer, which conforms to the requirements of ASTM D2564.

The assembled joint shall pass the performance tests as required in ASTM D3212.

1.2.5 OPEN PROFILE WALL PVC (18 INCHES AND LARGER PIPE ONLY)

Open profile PVC pipe and fittings shall meet the requirements of ASTM F794. Fittings shall also conform to ASTM D3034 SDR 35. Pipe shall have smooth interior with a ribbed exterior. Exterior ribs shall be perpendicular to the axis of the pipe to allow placement of gaskets without additional cutting or matching. Pipe shall have solid wall cross-section; no voids between inner and outer surfaces of pipe wall.

PVC materials shall have cell classification 12454 as defined in ASTM D1784 with minimum modulus of elasticity of 400,000 psi. Pipe stiffness shall be minimum 46 psi when tested in accordance with ASTM D2412. Impact strength shall equal or exceed values given in ASTM D3034 or F679.

Pipe and fittings shall be the product of one manufacturer and the manufacturer shall have an experience record substantiating acceptable performance of the pipe to be furnished. Fittings shall be injection molded.

All joints shall be of the flexible elastomeric type with bells and spigots conforming to ASTM D3212. Gaskets shall conform to ASTM F477. All bells shall be formed integrally with the pipe. Elastomeric gasket shall be positively restrained in ribs on spigot of pipe.

Acceptance of piping shall be subject to tests conducted by an approved testing agency in accordance with ASTM F794.

Fittings such as saddles, elbows, tees, wyes, and others shall be of material and construction corresponding to, and have a joint design compatible with the adjacent pipe. Approved adapters shall be provided for transitions to other types of pipe. Fittings shall be molded.

Joints shall be sealed with elastomeric gaskets meeting the requirements of ASTM F477. Solvent cement shall not be used to join pipe lengths or fittings to pipe lengths. The assembled joint shall pass the performance tests as required in ASTM D3212.

The pipe wall will be homogeneous and contain no seams. Minimum pipe stiffness per ASTM D2412 shall be 60 psi for 18 inches and 46 psi for 21 inches and larger pipe sizes. Pipe shall withstand impact of 220-foot-pounds. Standard lengths shall be 13-foot or 20-foot lengths. Pipe shall withstand flattening

up to 60% without cracking, splitting, or breaking and pass acetone immersion in accordance with ASTM D2152.

1.2.6 GRAVITY SANITARY SEWER SERVICE BRANCHES AND LATERALS

Branches (tees and wyes) shall be of the same material as the main except for reinforced concrete pipe used for sanitary sewer. For reinforced concrete pipe, special branches shall be furnished and installed to accept the lateral. Such special branches are subject to review by ENGINEER.

If a different thermoplastic material is specified in the **SPECIAL PROVISIONS** for laterals than for the main line, appropriate solvent welds, fittings, transition couplings, and other appurtenances shall be provided to effect a watertight seal.

Fittings for laterals shall be of the same material as the lateral pipe unless special fittings are needed for transition between material types or sizes or standard fittings are not manufactured.

Where the wye or tee branches and laterals are of dissimilar materials, CONTRACTOR shall provide a transition coupling for the connection.

All fittings used, including type of jointing, are subject to review by ENGINEER. See **SPECIAL PROVISIONS** for any additional requirements.

1.2.7 STEEL OR ALUMINUM CORRUGATED PIPE

Corrugated pipe composed of corrosion-protected steel or of aluminum shall meet the requirements of AASHTO M36 and of structural steel plate shall meet the requirements of M167. Pipe provided shall be new and free of defects and scale. Pipe and fittings that are dented, deformed, or have damaged coatings shall be removed from the site at CONTRACTOR's expense.

The average inside diameter of circular pipe shall not vary more than 1/2 inch or 1%, whichever is greater, from the nominal diameter.

The span and rise dimensions shall not vary more than 1 inch or 2% of the equivalent circular diameter, whichever is greater.

Coupling bands shall conform to AASHTO M36 and shall be made of the same base metal as the pipe. The bands shall not be less than 7 inches wide for diameters of 8 inches to 30 inches, inclusive; not less than 12 inches wide for pipe with diameters 36 inches to 60 inches, inclusive; and not less than 24 inches wide for pipe with diameters greater than 60 inches. Such bands shall be so constructed as to lap on an equal portion of each of the pipe sections to be connected and preferably shall be connected at the ends by galvanized angles having minimum dimensions of 2 by 2 by 3/16 inches.

All connections shall be shop fabricated where possible.

All cuts in corrugated pipe and pipe arch shall be saw cut. Connections cut in the field shall be saw cut with a saddle connection of 16-gauge material bolted on the corrugated pipe with 1/2-inch diameter galvanized bolts.

1.2.8 HIGH DENSITY POLYETHYLENE (HDPE) CORRUGATED PIPE

Corrugated pipe composed of high density polyethylene shall meet the requirements of AASHTO M252 and M294. Pipe and fittings shall be made from virgin polyethylene compounds conforming to ASTM D3350.

Pipe shall have interior smooth inner wall of full circular cross section with an integrally formed outer corrugated wall AASHTO Type S designation.

Fittings may be molded or fabricated and shall not impair the integrity or function of the pipe. Only fittings supplied or recommended by pipe manufacturer shall be used. Where elastomeric gaskets are required they shall conform to ASTM F477.

1.2.9 IRON PIPE AND FITTINGS

General: Iron pipe shall be ductile iron conforming to AWWA C151. Fittings shall be ductile or cast iron conforming to the standards herein. Iron pipe and fittings shall be American, Clow, Griffin, Tyler, U.S. Pipe, or equal.

Ductile iron pipe shall consist of pipe centrifugally cast in metal or sand-lined molds. Pipe wall shall be homogeneous from inside to outside and shall be completely free of laminations, blisters, or other imperfections. Defects may be removed at the factory only.

Each pipe and fitting shall have the weight, class or nominal thickness, country where cast, casting period, manufacturer's mark, the year in which the pipe was produced, and the letters DI or DUCTILE cast or stamped thereon. Improper or incomplete marking will be cause for rejection of the pipe or fitting.

CONTRACTOR shall furnish certification data representing each class of pipe or fitting furnished. The certification report shall clearly state that all pipe and fittings furnished meet the appropriate AWWA specification.

Exterior Pipe: Ductile iron pipe shall be provided with mechanical joints or push-on joints where buried. Provide flanged joints inside manholes, wet wells or other such structures, and elsewhere exterior as shown on the Drawings or as specified.

Unless otherwise shown on the Drawings or specified in the **SPECIAL PROVISIONS**, buried pipe shall be minimum Pressure Class 350 with a water hammer allowance of 100 psi. Additional pipe wall thickness shall be furnished as required by AWWA C150 for the depth of cover as shown on the Drawings when using Laying Condition 4 of AWWA C600 or the Class C Bedding Detail as shown on Drawing 01-975-43A.

Flange jointed pipe to be used elsewhere as shown on the Drawings or as specified, shall be minimum Special Thickness Class 53 conforming to AWWA C115 with a minimum rated working pressure of 250 psi and with a water hammer allowance of 100 psi. All flanged pipe shall be made up in strict accordance with AWWA C115 specifications. No field make-up flanges will be allowed unless strictly conforming to AWWA C115 with facing done after turning pipe through flange. Manufacturers of flanged pipe and fittings shall be certified to NSF 61 by an ANSI-accredited third-party certification organization.

Linings and Coatings: Buried pipe and pipe in manholes, wet wells, and other structures shall be cement-mortar lined and asphaltic coated inside and asphaltic coated outside. Inside lining and coating shall comply with AWWA C104. Outside coating shall comply with AWWA C151. Lining and coatings shall be suitable for use with potable water systems. The asphaltic coating shall be applied over the cement lining on the inside of the pipe and directly on the outside of the pipe. The coatings shall be smooth and impervious to water without any tendency to scale off.

Exterior aboveground pipe and pipe in manholes, wet wells, and other structures shall comply with the above unless specified otherwise in the **SPECIAL PROVISIONS**.

Polyethylene Encasement: Where required on the Drawings or specified in the **SPECIAL PROVISIONS**, CONTRACTOR shall provide polyethylene encasement conforming to AWWA C105. Film shall be Class C—Carbon Black, with a minimum thickness of 0.008 inches (8 mils). Tape for securing the film shall be a thermoplastic material with a pressure sensitive adhesive face capable of bonding to metal, asphaltic coating, and polyethylene. Tape shall have a minimum thickness of 8 mils and a minimum width of 1 inch.

The polyethylene film envelope shall be as free as is commercially possible of gels, streaks, pinholes, particles of foreign matter, and undispersed raw materials. There shall be no other visible defect such as holes, tears, blisters, or thinning out at folds.

Tapping and Bonding: In cases where corporation stops are to be tapped into mains, pipe wall thickness shall be furnished as specified in AWWA C151 to provide four threads or pipe saddles shall be furnished as approved by manufacturer.

Cable bond conductor or electrobond conductivity straps shall be installed on all ductile iron piping to maintain electrical continuity across joints. Continuity across valves and fittings shall be made with multiple conductivity straps connected in series. Lead-tipped gaskets or bronze wedges will not be allowed.

Cutting-in and Repair Tees and Sleeves and Tapping Tees: Cutting-in and repair tees and sleeves and tapping tees shall be of ductile or cast iron with the same rated working pressure of the pipe in which they are installed but no less than 150 psi.

Exterior Joints, Fittings, and Gaskets: Joints, fittings, and gaskets shall have the same rated working pressure of the pipe in which they are installed but no less than a minimum rated working pressure of 150 psi. Fittings shall be cement-mortar lined and asphaltic coated inside and shall be shop primed or asphaltic coated outside as specified above for the piping in which they are being installed.

Joints, fittings, and gaskets for buried piping shall be mechanical joint or push-on joint conforming to AWWA C110 and AWWA C111, as well as AWWA C153 (compact), with vulcanized styrene butadiene rubber gaskets conforming to AWWA C111.

Bolts on mechanical joints shall be high-strength low-alloy steel (Corten, or equal) conforming to AWWA C111; a certificate to that effect shall be provided.

Flange joints, fittings, and gaskets to be used elsewhere as shown on the Drawings or as specified shall conform to AWWA C110, AWWA C111, and to ANSI B16.1. Gaskets for flanged piping shall be full face, minimum 1/8-inch-thick, synthetic rubber gaskets with factory-made holes for flange bolts. Thicker gaskets shall be provided as needed to accommodate allowed tolerances in flange manufacturing.

Gaskets shall be furnished in sufficient number for all joints. Sufficient joint lubricant shall be furnished by the manufacturer with the gaskets.

1.2.10 PVC PIPE (AWWA)

AWWA PVC pressure rated pipe shall conform to the requirements of AWWA C900 for pipe from 4 inches through 12 inches and AWWA C905 for pipe from 14 inches through 48 inches. Pipe shall be furnished with integral elastomeric bell and spigot joints.

Outside diameter shall conform to ductile iron pipe sizes (DIPS). The pipe dimension ratio shall not be greater than 18 and its pressure class not less than 235.

Markings on the pipe shall include the following: Nominal pipe size, type of plastic pipe material, DR number, AWWA Designation with which the pipe complies, manufacturer's name, and the seal or mark of the laboratory making the evaluation of the suitability of the pipe for the transport of potable water.

1.2.11 PVC PIPE (SDR-PR)

Standard dimension ratio PVC pressure rated pipe shall conform to the requirements of ASTM D2241 (SDR-PR) for pipe from 4 inches through 12 inches. Pipe shall be furnished with integral elastomeric bell and spigot joints. Spigot end shall conform to ASTM D2241. Bell end shall conform to ASTM D3139. Gaskets shall meet ASTM F477.

PVC pipe outside diameter shall conform to galvanized iron or steel pipe sizes (IPS). The type of PVC material, nominal pipe size, standard dimension ratio, and pressure rating shall be not less than pressure class 200 and not greater than standard dimension ratio (SDR) 21.

Markings on the pipe shall include the following: Nominal pipe size, type of plastic pipe material, SDR number, pressure class rating, manufacturer's name, and the seal or mark of the laboratory making the evaluation of the suitability of the pipe for the transport of potable water.

1.2.12 PVC PIPE (SCHEDULE PIPE)—4 INCHES OR LESS

PVC Schedule pipe 4 inches or less shall conform to the requirements of ASTM D1785 for Schedules 40, 80, or 120. Pipe shall be solvent weld type conforming to ASTM D2855 with bell conforming to ASTM D2672. Pressure rating for pipe supplied shall be minimum 150 psi. PVC pipe diameter shall conform to galvanized iron or steel pipe sizes (IPS).

1.2.13 HIGH DENSITY POLYETHYLENE PRESSURE (HDPE) PIPE AND FITTINGS

HDPE pressure rated pipe shall conform to the requirements of AWWA C906 for pipe from 4 inches through 65 inches. HDPE pipe shall be manufactured from material conforming to PE Code PE4710.

HDPE pipe outside diameter shall conform to ductile iron pipe sizes (DIPS). The type of HDPE material, nominal pipe size, standard dimension ratio, and pressure rating shall be not less than pressure class 250 and not greater than a dimension ratio (DR) 9.

Markings on the pipe shall include the following: Nominal pipe size, type of plastic pipe material, DR number, pressure class rating, manufacturer's name, and the seal or mark of the laboratory making the evaluation of the suitability of the pipe for the transport of potable water.

Fittings for HDPE pipe shall conform to AWWA C906 and shall have the same pressure rating as the pipe in which they are installed.

1.2.14 PVC PRESSURE PIPE FITTINGS (4 INCHES AND LARGER)

Unless otherwise specified in the **SPECIAL PROVISIONS** or shown on the Drawings, fittings for PVC pressure pipe shall be iron pipe fittings as specified herein.

1.2.15 GRINDER PUMP PRESSURE SEWER PIPE AND FITTINGS (LESS THAN 4 INCHES)

Grinder pump pressure sewer pipe and laterals, shall be constructed of PVC conforming to ASTM D1785 for Schedules 40, 80, or 120 or to ASTM D2241, Class 250, SDR 17 with solvent weld joints.

All fittings shall be solvent weld, 1120 PVC, Schedule 40 conforming to ASTM D2466 or Schedule 80 in accordance with ASTM D2467. Threaded fittings shall be Schedule 80 minimum conforming to ASTM D2464.

All fittings and joints shall have a working pressure rating at least equal to the pipe to which they are attached. Fittings shall be compatible with the above-specified SDR-PR or Schedule Pipe. All PVC fittings outside of manholes shall have socket or bell ends. Transitions to curb stops shall be socket type on the PVC side and threaded on the curb stop side. Fittings inside manholes shall be as shown on the Drawings. All PVC pipe and fittings shall be approved by the National Sanitation Foundation and shall bear their mark of approval.

1.2.16 PIPE RESTRAINT

Pipe restraint fittings shall be provided as follows:

- a. For ductile iron pipe with ductile iron mechanical joints MEGALUG® Series 1100 or 1100SD by EBAA Iron Sales, Inc.; Series D-SLDE or SSLD by Sigma; Series 3000 or 3000S by Star Pipe Products; or equal.
- b. For ductile iron pipe with ductile iron push-on joints MEGALUG® Series 1100HD or 1700 by EBAA Iron Sales, Inc; Series SLDEH or SSLDH by Sigma; Series 3100P or 3100S by Star Pipe Products; Flex-Ring or Lok-Ring by American Cast Iron Pipe Company; TR Flex by U.S. Pipe Company; or equal.
- c. For PVC pipe with ductile iron mechanical joint fittings—MEGALUG® Series 2000 PV, 1100SV, or 2000SV by EBAA Iron Sales, Inc.; Series D-SLCE or PVM by Sigma; Series 1000C or 4000 by Star Pipe Products; or equal.
- d. For PVC pipe with PVC push-on joints (not solvent welded)—MEGALUG® Series 1100HV, 1900, or 2800 by EBAA Iron Sales, Inc.; Series SLCEH, PWP (greater than 12-inch only), or D-PWP (12 inches or less) by Sigma; Series 4100P by Star Pipe Products; or equal.

Gland body, wedges, and wedge actuating components shall be ductile iron conforming to ASTM A536 Grade 65-45-12. Bolts and tie rods shall be high-strength low-alloy steel conforming to AWWA C111.

Gaskets that include metal locking segments vulcanized into the gasket to grip the pipe to provide joint restraint are not acceptable.

1.2.17 COPPER WATER TUBING

Copper tubing installed within trenches shall be Type K soft annealed seamless copper tubing and shall conform to the Specifications of ASTM B88. All other copper shall be Type K hard copper conforming to ASTM B88.

The name or trademark of the manufacturer and a mark indicating the type shall be permanently and plainly marked on tubing.

Fittings for copper tubing shall be copper alloy meeting the requirements of AWWA C800-14. The maximum lead content shall be 0.25%. They shall have uniformity in wall thickness and strength and shall be free from any defect that may affect their serviceability.

Fittings shall be of the flared or compression-type. Unions shall be extra heavy 3-part unions only.

Each fitting shall be permanently and plainly marked with the name or trademark of the manufacturer.

1.2.18 SURFACE WATER CROSSINGS

Unless indicated otherwise on the Drawings or in the **SPECIAL PROVISIONS**, pipe for water crossings shall be ductile iron, Flex-Ring, or Lok-Ring by American Cast Iron Pipe Company, TR Flex by U.S. Pipe Company, or equal. Type of joint is subject to the review of ENGINEER and approval of OWNER. Mechanical joints with retainer glands will not be allowed.

1.2.19 TRANSITION COUPLINGS FOR GRAVITY SEWER SERVICE

Transition couplings shall be provided to join dissimilar pipe materials or to connect pipe where a standard pipe joint cannot be provided. Couplings shall be designed to join the pipe materials matching flow line elevations. Transition couplings for gravity sewer service shall be Fernco 5000 RC Strongback, Mission Flex-Seal ARC Shielded, or equal. Shear rings shall be provided to minimize differential settlement. All bands, clamps, shear rings and other metal components shall be stainless steel. Bushings or transitions shall be provided to accommodate pipe size differences.

1.2.20 MISCELLANEOUS PIPE

Piping needed for repair or reconstruction of existing utilities and appurtenances shall be of the same type and strength as the existing. The type of jointing used in repair and reconstruction shall be reviewed by ENGINEER. Special fittings shall be furnished and installed as necessary for repair, reconstruction, or connection of existing facilities.

All special fittings on or for connection to utilities shall be specifically built for the type of gasket used. Special fittings shall have joints of the same type as the utility to which the connection is being made.

When sanitary sewer construction is within 50 feet of a potable well, 200 feet of a municipal well, or as requested by ENGINEER, a water main equivalent pipe shall be used. To transition from water main equivalent pipe to pipe normally supplied, a transition pipe with suitable joints to mate the two different pipes shall be supplied. No field-constructed transitions will be allowed unless reviewed by ENGINEER and approved by OWNER. Construction shall not proceed until proper transition pipe is supplied.

1.2.21 TRACER WIRE

Thermoplastic pressurized pipe shall be provided with a minimum of #10 gauge solid insulated copper tracer wire located 12 inches above the top of the pipe. Wire shall be continuous between, terminate at, and be accessible at valve boxes, manholes, fire hydrants, or other risers. Wire shall not be electrically connected to any of these riser types. Any splices shall be soldered and fitted with a RACO, or equal insulated watertight boot.

1.3 VALVES

The type of valves to be used in the Project shall be as specified in the Standard Applications table in the **SPECIAL PROVISIONS** or as shown on the Drawings.

1.3.1 GATE VALVES

Solid wedge and double disk gate valves shall conform to AWWA C500 and resilient wedge gate valves shall conform to AWWA C509. Double disk valves shall not be used for wastewater applications. Valves shall close clockwise.

Valve stem seals shall be O-rings. The compound shall be of Buna-N or NBR rubber and have a durometer hardness of 70 degrees when tested in accordance with ASTM D2240.

Markings shall be cast on the bonnet or body of each valve and shall show the manufacturer's name or mark, the year and location valve casting was made, the size of the valve, and the designation of working water pressure.

Valves on water distribution systems and force main shall be suitable for direct burial, be provided with nonrising stems, and be equipped with a standard 2-inch-square operating nut with cast-on directional arrow.

Valves in structures as shown on the Drawings or as specified in the **SPECIAL PROVISIONS** shall be provided with nonrising stems and handwheels.

Buried or submerged valves shall be fusion bonded epoxy coated.

1.3.2 BUTTERFLY VALVES

Butterfly valves shall conform to AWWA C504.

Mechanical joint valves shall be Class 150B with cast iron body.

Shaft seals shall be the self-adjusting split-V type or standard O-ring seals.

Valves shall be suitable for direct burial-type installation on water distribution mains. Valves shall close in a clockwise direction.

All valves 30 inches and larger shall be furnished with a seat, adjustable, removable, and replaceable from the interior of the pipeline. The seat shall be removable and replaceable without removing the body from the pipeline.

Valves shall be furnished with a standard AWWA 2-inch-square nut for manual wrench operation which shall be positively secured to the operator input shaft (in conformance with AWWA C500).

A self-draining, self-aligning base 4 3/4-inch- to 5-inch-diameter concentric with the input shaft shall be provided to accept a circular valve box base.

The operator shall be self-locking with a permanent factory set stop at each end of its travel. The disc shall not creep or flutter under service conditions. The valve shall seat closed at an angle of 90 degrees from full open.

The operator shall be designed for the output torque according to AWWA C504. Maximum input torque required to develop the rated output torque shall not exceed 150-foot pounds for any size valve.

The operator case shall be completely watertight, sealed by means of approved gaskets, gasket compounds, O-rings, or threaded plugs. Operators shall be filled with a suitable oil lubricant or thoroughly coated with an approved grease at the factory. If the operator lubricant is oil, suitable fill and drain plugs shall be provided.

Buried or submerged valves shall be fusion-bonded, epoxy-coated.

1.3.3 PLUG VALVES

Plug valves shall be DeZURIK Series PEF, ValMatic, or equal.

Valves shall be of the nonlubricated eccentric type conforming to AWWA C517 with resilient faced plugs and end connections as shown on the Drawings or as needed to mate with main. Plugs and upper and lower shafts shall be cast in one piece. The plug profile shall be of a cylindrical eccentric shape so that the vertical face of the plug is straight and the horizontal face is eccentrically curved in relation to the plug shafts. Segmented ball valves with spherical plugs shall not be acceptable. Port areas shall be 100% full port. Valve bodies shall be of ASTM A126, Class B cast iron. Resilient plug facings shall be of chloroprene, suitable for use with wastewater.

Valves shall be furnished with a 1/8-inch machined smooth welded overlay seat of not less than 90% nickel. Seat area shall be raised surface completely covered with weld to ensure that the plug face contacts only nickel. Screwed-in seats are not acceptable. Valve shaft seals shall be of the type utilizing a stuffing box and pulldown packing gland. Shaft seals shall be designed for replacement with the line pressurized at design pressure with the plug in both the open and closed position. Standard Alemite No. 1610-BL grease fittings shall be installed in the upper and lower journals of the plug valves.

The design of the valve and stuffing box assembly shall be such that the packing can be adjusted or completely replaced without disturbing any part of the valve or operator assembly except the packing gland follower. Stuffing boxes shall have a depth sufficient to accept at least four rings of v-type packing. Valve seating adjustment shall be accomplished without removing the valve from the pipe line and with pressure in the line.

Valve pressure ratings shall be 175 psi for valves through 12 inches and 150 psi for valves in sizes 14 inches through 24 inches. Valves shall provide driptight shutoff up to the full pressure rating in both seating and unseating head conditions. Valves and all accessories shall be suitable for buried and submerged water or wastewater service.

All underground valves shall be equipped with cast iron telescopic adjustable valve boxes and covers. Provide 4- and 6-inch valves with valve key and stainless steel extended stems.

Plug valves 8 inches and larger shall be mounted in the horizontal, and when open, valve plugs shall be at top of valve out of flow stream. Plug valves installed in the horizontal shall have worm gear actuators. Provide same full pressure rating for gearbox as for valve. All gearing shall be enclosed in a cast iron housing of same quality as plug valve and be suitable for running in a lubricant with seals provided on all shafts to prevent entry of dirt and water into the actuator. The actuator shaft and the quadrant shall be supported on permanently lubricated bronze bearings. Actuators shall indicate valve position. Buried and submerged actuators shall be suitable for direct burial or submergence and shall be mounted on a gasketed and totally enclosed actuator mounting bracket and shall have a totally enclosed and gasketed cover. Actuator shall be filled with grease. Provide OWNER with number of revolutions to open and close valves.

Extension stems shall be provided. Extension stems for submerged gear-operated valves shall be fabricated from stainless steel rod. Stems shall be provided with 2-inch operating nut.

Buried or submerged valves shall be fusion-bonded epoxy-coated.

Valves shall be equipped with open/close rotation indicator at top of extended stem. All valves shall open when the operating shaft is rotated counterclockwise.

See **SPECIAL PROVISIONS** for any additional valve requirements.

1.3.4 CHECK VALVES

Swing Check Valves: Swing check valves in lines carrying liquid shall be M&H Style 259, Pratt, DeZURIK, American, Dresser, (lever and weight) for sizes 2 inches to 30 inches, or equal, conforming to AWWA C508, minimum 150 psi, iron body with disk to be bronze trimmed and neoprene rubber faced. Additional weights shall be used if necessary to stop slamming.

Air Cushion Swing Check Valves: Air cushion swing check valves in lines carrying liquid shall be GA Industries 250D, or equal. The swing check valves shall be constructed with a heavy cast iron or cast steel body, a bronze or stainless steel seat ring, an extra heavy noncorrosive shaft for attachment of lever and necessary weights to close valve, and a complete noncorrosive air cushion chamber. The valve shall be tight seating and shockless in operation. The seal ring shall be renewable and shall be securely held in place by a threaded joint. The air cushion chamber shall be attached to the side of the valve body externally and so constructed with a piston operating in a chamber that will effectively permit the valve to be operated without any hammering action. Shock absorption shall be by air, and the chamber shall be so arranged that the closing speed can be adjusted to meet the service requirements. The valve disk shall be of cast iron or cast steel and shall be suspended from a noncorrosive shaft that shall pass through a stuffing box to be connected to the chamber on the outside of the valve.

1.3.5 GRINDER PUMP PRESSURE SEWER SHUTOFF VALVES

All shutoff valves in valve and air release manholes for low pressure grinder pump sewers shall be PVC ball valves, ASAH1, True Union, 150 psi, Plastic Systems, Cartridge Type 342, or equal.

Ball valves shall be 1120 PVC body, union nuts, stem, handle, and end connectors. Balls shall be made of either CPVC or PVC. Valves shall be equipped with replaceable Teflon seats and EPDM O-ring seals. Ball valves shall be compatible with pipe and fittings as specified herein.

1.3.6 CORPORATION STOPS, CURB STOPS, AND TAPPING SADDLES

Corporation stops from 1/2 inch to 1 1/2 inches and curb stops from 1/2 inch to 2 inches shall be copper alloy and shall be manufactured in accordance with AWWA C800-14 and ASTM B62. The maximum lead content shall be 0.25%. Unless otherwise specified in the **SPECIAL PROVISIONS**, manufacturer shall be Mueller, Ford, or equal, minimum 150 psi working pressure.

With PVC main and for ductile iron main with 2-inch taps, tapping saddles shall be provided for all corporation stops. Tapping saddles shall be Mueller, Ford, or equal, brass or bronze, minimum 150 psi working pressure with stainless steel bands, nuts, and bolts.

1.3.7 FIRE HYDRANTS

Fire hydrants provided under these Standard Specifications shall conform to AWWA C502 for Dry-Barrel Fire Hydrants. Hydrants shall have the following features:

Bury Length	Approximately 3 feet to traffic flange.
Nozzle Size	One 4 1/2-inch- and two 2 1/2-inch-diameter openings.
Nozzle Threads	National standard fire hose coupling screw threads.
Drain Port	Drain port at base of hydrant barrel. Plug drain port when hydrant installed in area where ground water level may rise above drain port.
Size of Main Valve Opening	5 1/4-inch diameter minimum. The hydrant lead connection shall be minimum 6 inches diameter mechanical joint.

Torque Requirements	Hydrant shall comply with AWWA C502 even if greater than 5-foot bury.
Lubrication	Nontoxic and providing proper lubrication for a temperature range of -30° to +120° Fahrenheit.

Hydrants shall have permanent markings identifying the manufacturer by name, initials, insignia, or abbreviations in common usage, and designating the size of the main valve opening and the year of manufacture. Markings shall be so placed as to be readily discernible and legible after hydrants have been installed.

CONTRACTOR shall furnish certification to ENGINEER that the hydrant and all material used in its construction conform to the applicable requirements of AWWA C502 and the supplementary requirements thereto.

All joints on fire hydrant leads shall be made using pipe restraint specified herein. Approximately 1/2 cubic yard of bedding stone shall be placed from the bottom of the trench around the hydrant elbow and up the hydrant barrel. Bedding stone shall be wrapped completely in filter fabric to prevent the in-migration of fine materials.

CONTRACTOR shall furnish all necessary fittings in the fire hydrant lead to install the fire hydrant in a plumb condition at locations shown on the Drawings and at the specified depth of bury. The pumper nozzle of all fire hydrants shall be installed with the nozzle pointing toward the street. ENGINEER reserves the right to alter the location of fire hydrants from that shown on the Drawings.

Hydrants shall be installed as shown on Drawing 01-975-65A.

1.3.8 VALVE BOXES

A valve box shall be provided for fire hydrant auxiliary valves and for valves in the main. The valve box shall be centered and plumb over the wrench nut of the valve with the box cover flush with the finished ground elevation. Solid 4-inch concrete blocks shall be placed under the base of valve boxes so that the bottom of the base is about 2 inches away from contact with the valve bonnet. Unless otherwise indicated in the **SPECIAL PROVISIONS**, a Gate Valve Adaptor by Adapter, Inc., or equal, may be used in lieu of blocks. The valve box shall not transmit shock or stress to the valve.

Valve boxes shall be made of cast iron conforming to ASTM A48. The castings shall be free from blowholes, porosity, hard spots, shrinkage defects or cracks, or other injurious defects and shall have a normal smooth casting finish. The castings shall be thoroughly coated with a 1 mil minimum thickness bituminous coating. Valve boxes shall be 5 1/4 inches in diameter. Valve boxes shall have a maximum length of 5 feet when extended without extension sections. Extensions shall be provided for deeper mains.

Valve boxes shall consist of a base section, tubular mid and top sections, both with cast threads by which one can be telescoped on the other, extension sections if required, and a circular drop cover.

Valve boxes shall be installed in accordance with Drawing 01-975-64A.

1.3.9 CURB BOXES

Curb boxes shall be of the *Arch or Minneapolis Pattern*, Ford, Mueller, or equal made with cast iron conforming to ASTM A48. The castings shall be free from blowholes, porosity, hard spots, shrinkage defects or cracks, or other injurious defects and shall have a normal smooth casting finish. The pentagon head bolt shall be brass.

The castings shall be thoroughly coated with a 1 mil thickness bituminous coating.

A 2 1/2-inch-diameter box shall be provided for 3/4-inch and 1-inch service stops.

A 3-inch-diameter box with the enlarged base shall be provided for 1 1/4, 1 1/2, and 2-inch service stops.

All curb boxes shall have a maximum length of 5 feet when extended without the use of extension section. Extensions shall be provided for deeper mains.

1.3.10 MISCELLANEOUS VALVES

Shutoff valves in pipe taps and potable and nonpotable water lines smaller than 1 inch shall be Milwaukee 1131T (threaded), Milwaukee 1169 (solder joint), Nibco T-134 (threaded), Nibco S-134 (solder joint), or equal, bronze 300 psi gate valves. Provide unions for ease of valve removal

Shutoff valves in pipe taps and potable and nonpotable lines, pump vent, and drain lines 1 inch through 2 1/2 inches shall be gate valves, 150 psi, bronze or iron body bronze mounted, solid wedge disk, threaded, rising stem Nibco T-131, Milwaukee 1150, or equal. Provide unions for ease of valve removal.

See **SPECIAL PROVISIONS** for additional miscellaneous valves.

1.4 PRECAST REINFORCED CONCRETE MANHOLES

Unless otherwise required in the **SPECIAL PROVISIONS**, all manhole sections including risers, flat slab tops, conical tops, base sections, steps, and adjusting rings shall be precast reinforced concrete. Reinforced concrete manhole sections shall conform to ASTM C478. Manhole construction shall conform to Drawing 01-975-43A.

Lengths of manhole riser (barrel) shall be furnished in such combinations as to conveniently make up the depth of the manhole. A maximum of two handling holes per length of riser will be permitted.

Standard sewer and water manholes shall be constructed with eccentric cone top section and water main valve manholes shall be constructed with a concentric cone top section for 48-inch-diameter barrel sections. For other diameters the top section shall be a cone section, if available, or flat slab. Concrete adjusting rings shall be furnished to set the manhole casting to established grade. Valves and cleanout piping connections shall be centered below the casting.

Drop entrances to sanitary sewer manholes shall be installed where indicated on the Drawings and as shown on Drawing 01-975-43A. Drop entrances shall be of the same diameter as the sewer main from sizes 8 inches through 18 inches. For larger diameters, the drop shall be 18 inches unless otherwise specified in the **SPECIAL PROVISIONS** or shown on the Drawings. Drop entrances for storm sewer manholes are not required.

The interior bottom of sanitary sewer and storm sewer manholes shall be constructed of concrete benches which shall be precast or poured-in-place in the field. Benches shall extend to the top of each pipe to a maximum height of 42 inches. Flow lines shall be made smooth with uniform curves to promote flow through the manhole.

All joints between manhole pipe sections and top shall be tongue-and-groove conforming to ASTM C443. Manhole joints shall be sealed with circular O-ring or preformed flexible joint sealant as specified herein.

Manhole connections for sanitary sewer mains shall be made using flexible, watertight connections, PSX Press Seal, Kor-N-Seal, or equal, for sewers up through 18-inch diameter. All other sanitary sewer manhole connections shall be made with A-Lok, PSX Press Seal, Kor-N-Seal, or equal. Manhole connections for all other piping shall be made with A-Lok, PSX Press Seal, Kor-N-Seal, or concrete grout.

Manhole bottoms for sanitary sewer shall be monolithically precast with the bottom section for manholes up through 6-foot diameter. Bottoms for larger diameter manholes shall be precast but need not be monolithically cast with the bottom section. All other manhole bottoms shall be either poured-in-place or precast concrete.

Manhole bottoms for air release manholes, force main cleanout manholes and water system valve manholes shall have an 18-inch-diameter sump hole. Sump hole shall have a solid concrete bottom where groundwater is above the bottom of the manhole.

Manholes shall be furnished of minimum diameters as shown on Drawing 01-975-43A. Manholes shall be furnished large enough to provide a minimum distance, between adjacent pipe, measured tangentially along the inside face of the manhole, equal to one-half the outside diameter of the intersecting sewer pipe. In any event, manholes shall be furnished in the diameter necessary to accommodate intersecting sewer pipe and the pipe to manhole connection as proposed for use.

Steps shall be installed in all sewer manholes by the manufacturer as shown on Drawing 01-975-43A and shall be cast iron conforming to ASTM A48 or steel reinforced plastic conforming to ASTM A615, Grade 60 and ASTM D4101 as shown on the Drawings. Manhole steps shall be spaced at 16 inches on center with an allowable tolerance of ± 1 inch. Steps shall be embedded into the riser or conical top section wall a minimum of 3 inches.

Precast reinforced concrete manhole risers and tops shall be tested in accordance with ASTM C497. Precast reinforced concrete manhole risers and tops meeting the strength requirements will be considered acceptable and shall be stamped with an appropriate monogram. When requested, copies of test reports shall be submitted to ENGINEER before the manhole sections are installed in the Project. Final acceptance will be made after field inspection upon delivery to the jobsite.

Precast reinforced concrete manhole sections shall be subject to rejection for failure to conform to any of these Standard Specifications' requirements. In addition, individual sections of manhole risers and tops may be rejected because of any of the following reasons:

- a. Fracture or cracks passing through the wall, except for a single end crack that does not exceed the depth of the joint.
- b. Defects that indicate imperfect proportioning, mixing, and molding.
- c. Surface defects indicating honey-combed or open texture.
- d. Damaged ends, where such damage would prevent making a satisfactory joint.
- e. Manhole steps out of line, or not properly spaced.
- f. Noticeable infiltration into manhole.

- g. Variation in diameter of the manhole section of more than 1% from the nominal diameter.
- h. Any continuous crack having a surface width of 0.01 inch or more and extending for a length of 12 inches or more regardless of position in the section wall.

Each precast reinforced concrete manhole riser and top section shall be clearly marked with the name or trademark of the manufacturer and the date of manufacture. This marking shall be indented into the manhole section or shall be painted thereon with waterproof paint.

Precast concrete adjusting rings for standard manholes shall have an inside diameter of 26 inches, be not less than 2 inches nor more than 6 inches high, and shall have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. The joints between rings and between rings and castings shall be sealed with preformed flexible joint sealant as specified herein.

1.5 STORM SEWER INLETS

All inlets shall meet the requirements of ASTM C913. Construction shall conform to Drawing 01-975-41A. Inlets, in general, shall be rectangular in shape and shall be constructed of precast or poured-in-place concrete.

1.6 MASONRY

Concrete block shall meet the requirements of ASTM C139.

The face size of stretcher units shall be 7 5/8 inches by 15 5/8 inches. Variations in the face size shall be within the limits permitted by the above standards. Special shapes and sizes shall be furnished and installed as necessary.

Sewer brick shall conform to ASTM C32. All sewer brick shall be grade SS and manhole brick shall be grade MS. Sewer brick shall be installed as shown on the Drawings furnished by ENGINEER and as required in the construction of sewer appurtenances.

1.7 MANHOLE AND INLET CASTINGS

All manhole and inlet castings shall be gray iron and meet the requirements of ASTM A48. Unless otherwise shown on the Drawings or specified in the **SPECIAL PROVISIONS**, standard manhole castings shall be Neenah R1550 with machined frame, Type B solid lid, concealed pick holes and self-sealing gaskets, East Jordan Iron Works, or equal. Floodproof castings shall be Neenah R1916 C with machined frame, type B solid lid, concealed pick holes and self-sealing gaskets, East Jordan Iron Works, or equal.

Inlet castings for locations with curb and gutter shall be Neenah R3067 with type L grates on slopes and type R grates at low points, East Jordan Iron Works, or equal. For driveway areas, inlet castings shall be Neenah R3290 with Type A grates, East Jordan Iron Works, or equal.

1.8 FRAME/CHIMNEY SEAL

Where required by the **SPECIAL PROVISIONS** or shown on the Drawings, CONTRACTOR shall provide internal manhole frame chimney seal. The seal shall be made of a rubber type product, with a minimum thickness of 3/16 inches, a minimum unstretched width of 8 inches and be extruded or molded from a high grade rubber compound conforming to the applicable requirements of ASTM C923. The bands used for compressing the sleeve against the manhole shall be fabricated from stainless steel conforming to ASTM A240, Type 304, for sheet and ASTM A479, Type 304, for rods. Any screws, bolts, or nuts used on these bands shall be stainless steel conforming to ASTM F593 and F594, Type 304. The internal seal

or its appurtenances shall not extend far enough into the manhole opening to restrict entry into or exit from the manhole.

Manhole frame-chimney seals shall be designed to prevent the leakage of water into the manhole at the area of the joint between the manhole frame and chimney continuously throughout a 20-year design life. The seal shall remain flexible, allowing repeated vertical movements of the frame because of frost lift, ground movement, or other causes of up to 2 inches and/or repeated horizontal movements of the frame because of thermal movement of the pavement or other causes of up to 1/2 inch, both rates of movement occurring at rates not less than 0.10 inch per minute. If the seal is an internal seal, it and its appurtenances shall not extend far enough into the manhole opening to restrict entry or exit from the manhole.

The seal shall be made of only materials that have been successfully used in sanitary sewer construction for at least ten years and have proven to be resistant to sanitary sewage; corrosion or rotting under wet or dry conditions; the gaseous environment in sanitary sewers and at road surfaces including common levels of ozone, carbon monoxide and other trace gases at the sites of installations; the biological environment in soils and sanitary sewers; chemical attacks by road salts, road oil and common street spillages or solvents used in street construction or maintenance; the temperature ranges, variations and gradients in and between manhole frames and chimneys in the climate of the location of construction; variations in moisture conditions and humidity; fatigue failure caused by a minimum of 30 freeze-thaw cycles per year; or vibrations because of traffic loadings; fatigue failure because of repeated variations of tensile, compressive and shear stresses and repeated elongation and compression; and any combination of the foregoing. The materials used shall be compatible with each other and the manhole materials.

1.9 JOINT SEALING FOR MANHOLES AND APPURTENANCES

Unless modified by the **SPECIAL PROVISIONS**, the type of material to be used to seal joints between manhole barrels, cone sections, tops, adjusting rings, castings, and other appurtenances shall be as specified in the Standard Specifications or as shown on the Drawings.

1.9.1 MORTAR

Mortar shall meet the requirements of ASTM C270. Mortar shall be one part Portland cement and 2 1/4 parts washed mortar sand.

1.9.2 PREFORMED FLEXIBLE JOINT SEALANT

Prefomed flexible joint sealant shall be EZ Stik, Kent Seal, Ram Nek, or equal, meeting the requirements of ASTM C990.

1.9.3 O-RINGS

O-rings shall meet the requirements of ASTM C443.

1.10 AGGREGATE SLURRY (FLOWABLE) BACKFILL

Aggregate slurry (flowable) backfill shall consist of fine and coarse aggregate conforming to ASTM C33. Coarse aggregate shall be size number 67 and fine aggregate shall be size number 4. The material shall be mixed with water to provide an approximate 3-inch slump. The mix shall be deposited in the trench from ready mix concrete transit mix trucks and shall be consolidated using concrete vibrators or vibratory plate compactors.

1.11 EROSION CONTROL

Erosion and pollution control components such as silt fences, rock bags, straw bales, trash receptors, etc. shall meet the requirements of Best Management Practices and the Stormwater Pollution Prevention Plan established for this Project.

1.12 BEDDING DIKE

Where shown on the Drawings or requested by ENGINEER in the field, CONTRACTOR shall install clay bedding dikes to prevent groundwater from flowing continuously through the bedding material installed for the sanitary sewer. Bedding dikes shall be 4 feet long and shall extend from the bottom of the trench excavation to within 2 feet of the ground surface and 1 foot beyond the trench width on both sides of the trench.

1.13 SPECIAL MATERIALS AND EQUIPMENT

See **SPECIAL PROVISIONS** for items of material and equipment specific to the Project.

SECTION 2—ALIGNMENT AND GRADE

2.1 GENERAL

Utility lines shall be laid and installed to the lines and grades specified with valves, fittings, manholes, and other appurtenances at the specified locations; spigots centered in bells; and all manholes and riser pipes plumb.

Water main and force main shall be installed at the depth indicated in the **SPECIAL PROVISIONS**.

Gravity sewer mains and laterals shall maintain a minimum 36 inches of cover but shall be deep enough to provide service to buildings.

Water main, force main, and other pressure mains shall be installed to within ± 0.1 feet of designed grades. Sanitary and storm sewer and laterals shall be installed to within ± 0.03 feet of designed grades.

Unless otherwise noted in the **SPECIAL PROVISIONS** or on the Drawings, service lines shown on the Drawings are approximate. ENGINEER will assist CONTRACTOR in staking the actual locations in the field.

Staking shall be completed in conformance with Division 01 of the Specifications.

2.2 DEVIATIONS OCCASIONED BY UNDERGROUND FACILITIES

Wherever significant obstructions not shown on the Drawings are encountered during the progress of the Work, CONTRACTOR shall proceed in accordance with the General Conditions to notify owners and protect the facilities. Existing items unnecessarily damaged during the performance of the Work shall be repaired and replaced at the expense of CONTRACTOR.

2.3 CAUTION IN EXCAVATION

CONTRACTOR shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures may be determined and shall be held responsible for the repair of such structures when broken or otherwise damaged because of carelessness on its part.

2.4 SUBSURFACE EXPLORATION

Whenever, in the opinion of ENGINEER, it is necessary to explore and excavate to determine the location of existing underground facilities, CONTRACTOR shall make explorations and excavations for such purposes. If CONTRACTOR is asked to perform additional Work in making the explorations and excavations, extra compensation will be allowed as specified in the General Conditions.

SECTION 3-EXCAVATION AND PREPARATION OF TRENCH

3.1 GENERAL EXCAVATION

The trench shall be dug so that the utilities can be laid to the alignment and depth specified. Unless otherwise allowed by ENGINEER, trenches shall not be excavated more than 100 feet in advance of pipe laying. Earth excavation shall include all excavation except rock as hereinafter defined. Included in earth excavation shall be removal of street paving of all types, existing structures, existing improvements and trees smaller than 4 inches in diameter measured 4 feet above the ground, all as necessary to complete the pipe installation.

3.2 EXCAVATION TO GRADE

The trench shall be finished to the depth necessary to provide a uniform and continuous bearing and support for the pipe on the bedding material provided at every point between bell holes. Any part of the bottom of trench excavated below the specified grade shall be corrected with bedding material, thoroughly compacted in place. The bedding shall be shaped and finished with hand tools to fit the bottom quadrant to the pipe.

If, in the opinion of ENGINEER, unstable soil conditions are encountered at subgrade, CONTRACTOR shall replace the unstable soil with special bedding. CONTRACTOR shall be allowed extra compensation for the special bedding, unless the unstable soil conditions are caused by CONTRACTOR's failure to adequately dewater the trench, in which case CONTRACTOR shall bear the entire cost.

All excavated material shall be piled in a manner that will not endanger the Work. Stockpiles not for immediate backfilling shall have silt fences placed around their perimeter for erosion control. The Work shall be conducted in such a manner that pedestrian and motor traffic is not unnecessarily disrupted. Fire hydrants, valve boxes and manholes shall be left unobstructed. Gutters shall be kept clear or other satisfactory provisions made for street drainage, and natural water courses shall not be obstructed.

Excavated material designated by ENGINEER as being undesirable for backfilling and all surplus excavated material shall be immediately removed as excavation progresses. All such material shall be disposed of in an environmentally safe manner in accordance with local, state, and federal regulations. No such materials shall be disposed of in wetlands, floodplains, or other environmentally sensitive areas. Disposal sites are also subject to approval of OWNER. All undesirable and surplus material disposed of must be leveled off and graded to rough elevations as determined by OWNER. Appropriate erosion control measures shall be provided and maintained at disposal sites until disposal is complete and the disposal site is permanently stabilized.

CONTRACTOR shall remove bituminous pavement and road surface as a part of the trench excavation. The width of pavement removed shall be the minimum possible, and acceptable, for convenient and safe installation of utilities and appurtenances.

All bituminous pavement shall be cut on neat, straight lines and shall not be damaged beyond the limits of the trench.

Where it is necessary to trench through concrete pavement, a strip shall be sawed and removed in such a manner as not to disturb the remainder of the pavement. Paving and undermining of existing concrete pavement shall be prevented by CONTRACTOR. If CONTRACTOR unnecessarily removes or damages pavement or surfaces beyond limits acceptable to ENGINEER, such pavement and surfaces shall be replaced or repaired at the expense of CONTRACTOR.

3.3 DEWATERING

CONTRACTOR shall, at its own expense, keep the excavation clear of water while structures and appurtenances are being built, utilities are being installed, and fill and backfill is being compacted. CONTRACTOR shall at all times have on hand sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, including power outages, and shall have available at all times competent workers for the operation of the pumping equipment. The dewatering systems shall not be shut down between shifts, on holidays or weekends, or during Work stoppages.

All dewatering shall be done in accordance with applicable federal, state, and local code requirements.

Under no conditions shall the Work be laid in or under water. No water shall flow over the Work until the joints are complete or the concrete has set. Wherever necessary, CONTRACTOR shall excavate in advance of the completed Work, lead the water into sumps or pump wells, and provide erosion control measures to prevent water or sediment damage.

The expense for making all extra excavations necessary to prevent water from interfering with the proper construction of the Work and for forming of all dams, digging sumps or pump wells, bailing and pumping, and erosion control shall be borne by CONTRACTOR. Any permits necessary for the dewatering operations shall be obtained and paid for by CONTRACTOR. No extra payment will be made for dewatering of the trench whether accomplished by the use of sumps and pumps, well point systems, or deep wells.

CONTRACTOR's dewatering system shall ensure that soils within the trench will not be destabilized by hydrostatic uplift pressures from adjacent groundwater. If conditions warrant, CONTRACTOR shall furnish and install well point systems or deep wells. Spacing and depth of well points or wells shall be adequate to lower the piezometric level to at least 2 feet below the bottom of the excavation. Additional lowering shall be provided as necessary to create a stable subgrade. The control of groundwater shall be such that softening or heaving of the bottom of excavations or formation of quick conditions or boils shall be prevented. Dewatering systems shall be designed and operated to prevent the migration or removal of soils. In areas where rock is encountered, the water level shall be kept at or below top of rock but at least 6 inches below bottom of concrete. Additional rock shall be removed as needed to provide clearances.

CONTRACTOR shall take all necessary precautions during the dewatering operation to protect adjacent structures against subsidence, flooding, or other damage. The dewatering system shall be installed and operated so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property. Any such facilities and structures damaged shall be repaired or replaced to the satisfaction of their owner.

Prior to dewatering, CONTRACTOR shall take into account the effect of its proposed dewatering operation on existing private water supply systems and shall make arrangements with property owners for protecting their supplies or providing alternative supply. If CONTRACTOR's dewatering operation adversely affects private water supply systems, CONTRACTOR shall provide property owners with alternative potable and nonpotable supplies until dewatering operations are ceased and groundwater levels return to normal. If the water in private water supply wells is contaminated through no fault of CONTRACTOR after restoration of original groundwater levels, OWNER will provide measures to restore

water potability. CONTRACTOR is responsible for restoration of the water supply, not its potability after restoration.

In areas where continuous operation of dewatering pumps is necessary, CONTRACTOR shall avoid noise disturbance to nearby residences and businesses to the greatest extent possible by using electric driven pumps, intake and exhaust silencers, or housing to minimize noise.

The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted fill or backfill, and prevent floatation or movement of all structures and pipelines.

3.4 WIDTH OF TRENCH

CONTRACTOR shall be responsible for determining and providing the minimum width necessary to provide a safe trench in accordance with current OSHA standards and all other applicable standards. The top width of trench excavation shall be kept as narrow as is reasonably possible and acceptable to minimize pavement damage. Pay items related to maximum trench widths shall not limit CONTRACTOR's responsibility to provide safe trench conditions.

Width of Trench–Rigid Pipe: The width of trench below the outside top of the pipe shall be as shown in the following table for the sizes listed. A minimum clearance of 8 inches between the outside of the pipe barrel and the trench wall at the pipe spring line shall be maintained to allow for bedding and haunching. If sheeting is used and is going to remain in place, the trench width shall be measured as the clear distance between inside faces of the sheeting. Otherwise, the trench width shall be based on the width between stable trench walls after sheeting is removed.

MAXIMUM WIDTH OF TRENCH BELOW TOP OF PIPE

Nominal Pipe Diameter (Inches)	Trench Width (Inches)
4	30
6	30
8	36
10	36
12	36
15	36
18 and larger	SEE SPECIAL PROVISIONS

Where the width of trench below the outside top of the pipe barrel cannot be otherwise maintained within the limits shown above, CONTRACTOR, at its own expense, shall furnish an adequate pipe installation for the actual trench width which will meet design conditions. This may be accomplished by furnishing higher class bedding, a stronger pipe, concrete cradle, cap or envelope or by driving sheeting prior to excavation to subgrade. Removal of sheeting below the top of the pipe, if allowed by ENGINEER, shall be gradual during backfilling.

If the maximum trench width is exceeded for any reason other than by request of ENGINEER, the concrete cradle, cap, sheeting, bedding or the stronger pipe shall be placed by CONTRACTOR at its own expense. Where the maximum trench width is exceeded at the written request of ENGINEER, the concrete cradle, cap, sheeting, bedding or stronger pipe will be paid for on the basis of the price bid.

Width of Trench—Thermoplastic and Ductile Iron Pipe: The trench width for flexible pipe shall be minimum three times the pipe outside diameter or the maximum trench width specified for rigid pipe, whichever is greater. A minimum clearance of 8 inches between the outside of the pipe barrel and the trench wall at the pipe spring line shall be maintained to allow for bedding and haunching.

3.5 ROCK EXCAVATION, UTILITIES

Rock excavation for utilities shall include all hard, solid rock ledges, bedded deposits and unstratified masses and all conglomerate deposits or any other material so firmly cemented that in the opinion of ENGINEER it is not practical to excavate and remove same with a 225-net flywheel horsepower trench backhoe or equal, except after continuous drilling and blasting. Soft or disintegrated rock which can be removed with a pick, loose, shaken or previously broken rock, or rock which may fall into the excavation from outside the limits of excavation will not be classified as rock excavation. Rock excavation shall also include all rock boulders necessary to be removed having a volume of 2 cubic yards or more.

When rock is encountered, it shall be stripped of earth and ENGINEER or OWNER's representative notified and given proper time to evaluate same before removal. Any rock removed which has not been measured by ENGINEER or OWNER's representative will not be classified as rock excavation.

The depth of trench in rock shall be 6 inches below the lowest outside bottom of the pipe.

All rock excavated from the trench shall be classified as undesirable backfill material and shall be disposed of as specified in the Excavation to Grade section. All trenches in rock shall be backfilled with bedding, cover, and backfill material furnished by CONTRACTOR.

3.6 BLASTING

Blasting for rock excavation will be permitted only after securing the written approval of OWNER and only after proper precautions are taken for the protection of persons or property. The hours of blasting will be fixed by OWNER. Any damage caused by blasting shall be repaired by CONTRACTOR at its expense. CONTRACTOR's method and procedure of blasting shall conform to state laws and municipal ordinances.

CONTRACTOR shall provide a copy of Blaster License as required by the licensing agencies to OWNER prior to commencement of blasting.

3.7 SPECIAL BEDDING

Special bedding shall consist of stone material and filter fabric as described herein. Where the bottom of the trench at subgrade is found to be unstable or of unsuitable material, which in the opinion of ENGINEER should be removed, CONTRACTOR shall excavate and remove such unstable or unsuitable material to the trench width and to a depth of 2 feet. The excavated area shall be lined with filter fabric, Mirafi 140 N, US Fabrics US 120NW, Propex Geotex 401, or equal, and backfilled with bedding material in maximum 12-inch layers. At subgrade the filter fabric shall be wrapped over the special bedding with an 18-inch overlap. Bedding material shall then be placed over the special bedding to support the piping. See Dewatering and Excavation to Subgrade sections for additional conditions.

3.8 CONCRETE CRADLE

If soil conditions require it, concrete cradle or encasement shall be placed around the pipe as shown on Drawing 01-975-43A. Excavation shall be carried below the grade line to a depth requested by ENGINEER and concrete cradle or encasement placed. Before the concrete is placed, the pipe shall be laid to line and grade, blocked and braced, and the joint made. The cradle shall then be placed, taking care not to disturb the pipe. Concrete shall have a minimum 28-day compressive strength of 4,000 psi.

Concrete cradle shall not be used for thermoplastic piping. See Trench Width section for additional conditions.

3.9 BRACED AND SHEETED TRENCHES

Open-cut trenches shall be sheeted and braced as required by any governing federal regulations including OSHA, state laws, and municipal ordinances; and as may be necessary to protect life, property, improvements or the Work. Underground or aboveground improvements to be left in place shall be protected and, if damaged, shall be repaired or replaced at the expense of CONTRACTOR.

Sheeting and bracing which is to be left in place must be removed for a distance of 4 feet below the present or proposed final grade of the street, road, or land, whichever is lower. Trench bracing, except that which shall be left in place, may be removed after backfilling has been completed or has been brought up to such an elevation as to permit its safe removal.

3.10 TUNNELING, JACKING, BORING, OR JACKING AND BORING

Where shown on the Drawings or specified in the **SPECIAL PROVISIONS**, the sewer, water main, or force main (carrier pipe) shall be placed inside a casing pipe that is installed by tunneling, jacking, boring, or jacking and boring or other acceptable methods not using open-cut construction techniques. Installation shall be accomplished in accordance with Federal and State Laws and municipal ordinances. Installation shall also conform to any permit requirements obtained by OWNER or CONTRACTOR from railroads; local, county, state or federal agencies; or any other such entity requiring a permit to allow the Work to proceed. Should there be a conflict between permit requirements and those herein, the stricter requirement shall control.

CONTRACTOR's means and methods of construction shall be capable of controlling water and soil infiltration at the excavated face, along the alignment and at shaft excavations to properly conduct the Work, to maintain a stable excavation, and to prevent collapse of the ground. CONTRACTOR shall obtain any dewatering permits required. If CONTRACTOR's means and methods are not effective in controlling such infiltration, CONTRACTOR shall select other means and methods and demonstrate to OWNER that water and soil infiltration can be excluded, all at no additional cost to OWNER. Shafts and open cut excavations shall be excavated by methods determined by CONTRACTOR to be capable of and suitable for coping with the surface and subsurface conditions. CONTRACTOR shall have a representative on site at all times who is experienced in the tunneling technique being used.

Installation of casing and carrier pipe shall proceed in such a manner as to minimize disruption of traffic and to avoid damage to adjacent roadways, railroad tracks, and other structures. No equipment shall operate off the pavement or tracks or the shoulder of the roadway or tracks being crossed during the course of construction. Signs, barricades, flag men, and lighting shall be provided to strictly comply with the Traffic Control section of the Standard Specifications as may be modified by any permit requirements and as needed to complete the Work—the more stringent requirement controlling.

Casing pipe used shall be of adequate diameter and thickness to support all jacking, earth, live, and other loads imposed and to permit installation of the carrier pipe to plan line and grade. Type and minimum size of casing pipe shall be as called for below. Steel pipe shall conform to ASTM A139 Grade B. The minimum yield strength shall be 35,000 psi.

Nominal Size (Inches)	Minimum Wall Thickness (Inches)
< 27	0.250
27-30	0.375
36	0.500
42	0.625

Nominal Size (Inches)	Minimum Wall Thickness (Inches)
48	0.625
54	0.750
60	0.875
66	0.875
72	1,000

1. See **SPECIAL PROVISIONS** for other sizes.
2. Thicker walls shall be provided to meet jacking pressures, soil loading, or to conform to permit requirements for the Work.
3. Sections of pipe shall be field welded with a continuous circumferential, full depth single "V" groove (butt joint) weld. Welds shall have strength equal to pipe walls.

Casing pipe shall be installed using equipment and material that cases the hole as earth is removed to eliminate cavities at the lead end of the casing pipe. Grouting between casing pipe and soil opening shall be performed when needed to secure casing pipe, to prevent soil collapse, and to fill voids between the casing pipe and native soil. The front of the casing pipe shall be provided with a mechanical arrangement or device that positively prevents the auger from leading the pipe so that no unsupported excavation is ahead of the pipe. The auguring process shall be set such that it permits a balance between jacking pressures and the ratio of carrier pipe advancement to the quantity of soil excavated to eliminate voids in the soil. This is especially critical in the event granular, loose, or unstable soils are encountered at the face of the casing pipe. CONTRACTOR shall maintain a record of soil removed against carrier pipe volume as a check against formation of voids.

The carrier pipe shall be placed inside the casing pipe using stainless steel casing spacers. Cascade Waterworks Mfg., Advance Products and Systems, Inc., or equal, which are shaped to fit both the casing pipe and carrier pipe. At least three spacers shall be provided for each length of carrier pipe, but the number of spacers used shall be not less than the minimum requirements of the manufacturer. They shall be attached to the barrel of the carrier pipe so they are parallel to the longitudinal centerline. Unless otherwise specified in the **SPECIAL PROVISIONS**, the annular space between the casing pipe and carrier pipe shall be filled with low density cellular concrete. The cellular concrete shall be produced by blending pre-formed foam with cementitious slurry consisting of cement, sand, and/or fly ash, and water to produce a concrete having a minimum compressive strength of 50 psi and a maximum compressive strength of 100 psi. Material shall be placed to eliminate voids and trapped air along the pipe and in structures so as to fill the entire void.

All carrier pipe within the limits of jacking pits shall be installed at CONTRACTOR's expense to resist all loads imposed including, if necessary, the use of special pipe.

Other tunneling methods shall be as specified in the **SPECIAL PROVISIONS**.

3.11 HORIZONTAL DIRECTIONAL DRILLING

Where shown on the Drawings, horizontal directional drilling shall be provided using HDPE pipe. See **SPECIAL PROVISIONS** for any additional requirements.

A certificate of "Compliance with Specification" shall be furnished for all materials to be supplied. Test reports prepared by an independent testing laboratory shall be provided certifying that polyethylene pipe conforms to the requirements of ASTM D3350.

Subject to compliance with the complete requirements of these Standard Specifications, manufacturers offering HDPE pipe products that may be incorporated into the Work include Performance Pipe, Poly Pipe, or equal.

FUSION WELDING. Polyethylene pipe shall be joined using the butt-fusion welding process. Provide a fused flanged adapter with ductile iron follower flange and a ductile iron flanged pipe for interconnections with ductile iron and/or PVC piping.

CONTRACTOR may use a drilling fluid which is completely biodegradable. Clay-based drilling fluids will also be allowed. Drilling fluid shall be subject to the review of OWNER. CONTRACTOR shall provide his own clean water for drilling fluid. At no time shall the drilling fluid be discharged to a surface water. This includes drilling fluid that may surface along the directionally drilled pipe route. CONTRACTOR shall provide other drilling fluids or procedures as needed to prevent a discharge of drilling fluids to surface waters at no additional cost to OWNER.

The boring unit shall have a tracking device that is capable of providing depth and location at all points of the boring path. Record Drawings showing horizontal and vertical locations of the conduit shall be created by CONTRACTOR based on the tracker information and submitted to OWNER.

- a. **FINISHED PIPE.** CONTRACTOR shall submit detailed information to OWNER of the procedure and the steps to be followed for the installation of the directional drilling method selected, even if the process is named in the Standard Specifications. All such instructions and procedures submitted shall be carefully followed during installation. Any proposed changes in installation procedures shall require submittal of revised procedures.

The installed pipe shall be continuous over the entire directionally drilled length and shall be free from visual defects, such as foreign inclusions, concentrated ridges, discoloration, pitting, varying wall thickness, and other deformities. Pipe with gashes, nicks, abrasions, or any such physical damage that may have occurred during storage and/or handling, which are deeper than 10% of the wall thickness, shall not be used and shall be removed from the construction site.

- b. **PIPE JOINTING.** Sections of polyethylene pipe shall be assembled and joined on the jobsite above ground. Pipe ends to be joined shall be cut square, then joined, by the heating and butt-fusion method in strict conformance with the manufacturer's printed instructions.

The butt-fusion method for pipe jointing shall be carried out in the field by operators with prior experience in fusing polyethylene pipe with similar equipment using proper jigs and tools per standard procedures outlined by the pipe manufacturer. These joints shall have a smooth, uniform, double-rolled back bead made while applying the proper melt, pressure, and alignment. It shall be the sole responsibility of CONTRACTOR to provide an acceptable butt-fusion joint. The replacement pipe shall be joined on the site in appropriate working lengths near the insertion pit.

- c. **INSERTION OR ACCESS PITS.** The location and number of insertion or access pits shall be planned by CONTRACTOR and submitted in writing prior to excavation. The pits shall be located such that their total number shall be minimized and the length of replacement pipe installed in a single pull shall be maximized. The maximum length of continuous liner shall not exceed the pipe bursting system manufacturer's recommendations.

Upon completion of the directional drilling operation by CONTRACTOR, CONTRACTOR shall backfill the excavation, perform clean up and all site restoration, as indicated on the Drawings. All surfaces shall be restored in kind with thicknesses matching those removed.

- d. **PROCESS LIMITATIONS.** Though the installation process may be licensed or proprietary in nature, CONTRACTOR shall not change any material, thickness, design values, or procedures stated or approved in the submittals. CONTRACTOR shall submit, in writing, full details about component materials, their properties and installation procedures, and abide by them fully during the entire course of the Project.

All allowable directional drilling methods are considered to be structurally equal processes as far as end product required. The minimum required performance criteria, and/or standards, physical/structural properties, chemical resistance tests, and the replacement pipe thicknesses as given in these Standard Specifications shall be strictly complied with.

CONTRACTOR shall attach a 7 x 19 strand core, 1/4-inch diameter vinyl-coated galvanized aircraft cable pulled with the directional drilling operation as tracer wire. Aircraft cable shall be attached to the pipe at 20-foot intervals. Tracer wire shall be successfully tested before acceptance.

SECTION 4—PIPE AND MANHOLE INSTALLATION

4.1 GENERAL

Prior to commencing pipe laying, CONTRACTOR shall notify ENGINEER of the intended date for starting Work. ENGINEER may request at CONTRACTOR's expense the removal and relaying of pipe which was installed prior to notification of ENGINEER.

Proper implements, tools, and facilities shall be provided and used by CONTRACTOR for the safe and convenient prosecution of the Work. All pipe, fittings, and appurtenances shall be carefully lowered into the trench, piece by piece, with a crane, rope or other suitable tools or equipment, in such manner as to prevent damage to materials. Under no circumstance shall pipe be dropped or rolled into the trench.

Materials shall be as shown on the Drawings or as specified herein.

4.2 MATERIAL INSPECTION

CONTRACTOR shall inspect the pipe, fittings, and appurtenances for defects when delivered to the jobsite and prior to lowering into the trench. Defective material shall be removed from the jobsite. All material shall be clean and free of deleterious substances prior to use in the Work.

4.3 BEDDING AND COVER

Immediately prior to placing the pipe, the trench bottom shall be shaped by hand to fit the entire bottom quadrant of the pipe. If pipe is of the bell and spigot type, bell holes shall be provided to prevent the bell from supporting the backfill load. Bell holes shall be large enough to permit proper making of the joint but not larger than necessary to make the joint. All adjustments to line and grade must be done by scraping away or filling in bedding material under the body of the pipe. Any fill used must be bedding material. If necessary to obtain uniform contact of the pipe with the subgrade, a template shall be used to shape the bedding material. All pipe shall be placed on bedding material at least 4 inches thick. See Drawing 01-975-43A. Bedding material shall then be placed and tamped into place up alongside the pipe in maximum 6-inch layers shovel slicing the bedding material under the haunches to provide firm contact with the pipe. CONTRACTOR shall perform all necessary excavation and shall furnish all necessary material to provide this bedding.

Bedding material shall be hard and durable and shall be made by crushing sound limestone or dolomite ledge rock, or crushed gravel aggregate. Bedding material shall conform to the requirements of ASTM C33. No native soil shall be used for bedding material.

PERCENTAGE BY WEIGHT PASSING INDICATED SIEVE

Size	2 1/2 IN	2 IN	1 1/2 IN	1 IN	3/4 IN	1/2 IN	3/8 IN	No. 4	No. 8	No. 16	No. 30	No. 100	No. 200
57			100	95-100		25-60		0-10	0-5				
8						100	85-100	10-30	0-10	0-5			
9						100	75-100	0-25	0-5				
10							100	85-100				10-30	

All rigid sanitary sewer pipe and related appurtenances shall be bedded and covered in accordance with the Class B bedding detail as shown on Drawing 01-975-43A. Bedding material shall conform to Size No. 8 or No. 9. With pipes greater than 15 inches, Size No. 57 may be used.

Concrete and other rigid pipe used in non-sanitary sewer applications (sanitary sewer applications, if allowed by the **SPECIAL PROVISIONS**) may be bedded using the Class C bedding detail as shown on Drawing 01-975-43A. Bedding material shall conform to the above for rigid sanitary sewer pipe.

Ductile and cast iron pipe shall be bedded in accordance with Class C bedding detail as shown on Drawing 01-975-43A or the Type 4 laying condition of AWWA C600. Bedding material shall conform to Size No. 8, or No. 9. Where ductile iron pipe is polyethylene encased, bedding material shall conform to Size No. 10 or cover material as specified below.

Thermoplastic sanitary sewer pipe and related appurtenances shall be bedded and covered in accordance with the Thermoplastic Pipe Bedding Detail on Drawing 01-975-43A. Bedding material shall conform to Size No. 8 or No. 9. With pipes greater than 15 inches, Size No. 57 may be used.

All other sanitary sewer pipe and related appurtenances shall be bedded and covered in accordance with the Class B bedding detail as shown on Drawing 01-975-43A. Bedding material shall conform to Size No. 8 or No. 9. With pipes greater than 15 inches, Size No. 57 may be used.

PVC water main or force main shall be bedded and covered in accordance with the Thermoplastic Pipe Bedding Detail on Drawing 01-975-43A or in accordance with the Type 4 laying condition of AWWA C605. HDPE water main or force main shall be bedded and covered in accordance with the Thermoplastic Pipe Bedding Detail on Drawing 01-975-43A or in accordance with ASTM D2774. Bedding material shall conform to Size No. 8 or No. 9. With pipes greater than 15 inches, Size No. 57 may be used. No native materials may be used.

Bedding material for copper water services shall conform to Size No. 9 or No. 10.

CONTRACTOR shall provide ENGINEER with a sieve analysis of the bedding material for review prior to starting construction.

Material which is to be placed from the bedding material to 1 foot above the top of the pipe shall be termed cover material. All trenches shall be backfilled by hand to 1 foot above the top of the pipe with cover material. Cover material shall be deposited in the trench for its full width on each side of the pipe, fittings and appurtenances simultaneously in 6-inch layers and shall be compacted using hand tamping bars and/or mechanical tampers. CONTRACTOR shall use special care in placing cover material to avoid injury to or movement of the pipe. Cover material shall consist of durable granular particles ranging in size from fine to a maximum size of 3/4 inches. Unwashed bank run sand and crushed bank run gravel will be considered generally acceptable cover material. Cover material shall generally conform to the following gradation specifications:

COVER MATERIAL GRADATION

Sieve Size	Percentage by Weight Passing
1 inch	100
3/4 inches	85 to 100
3/8 inches	50 to 80
No. 4	35 to 65
No. 30	--
No. 40	15 to 30
No. 200	5 to 15

Native trench materials may be used for cover material if they substantially conform to the above gradation specifications and a suitable credit is extended to OWNER.

All bedding materials may be substituted for cover material when requested by CONTRACTOR except where polyethylene encasement is used. In such case, only those bedding materials specifically noted for polyethylene encasement may be used.

4.4 PIPE LAYING

All pipe shall be laid accurately to the line and grade as designated. Preparatory to making pipe joints, all surfaces of the portions of the pipe to be joined or of the factory-made jointing material shall be clean and dry. Lubricants, primers, adhesives, and other joint material shall be used and installed as recommended by the pipe or joint manufacturer's specifications. The jointing materials or factory fabricated joints shall then be placed, fitted, joined, and adjusted in such a workmanlike manner as to obtain the degree of watertightness specified. Pertinent specifications from the joint and pipe manufacturer which outline procedures to be followed in making the joint shall be furnished to ENGINEER.

Wyes, tees, and special fittings shall be installed as called for on the Drawings or as requested by ENGINEER. Wyes, tees, and special fittings shall, in general, be jointed with the same type of joint as used in the pipe.

In joining two dissimilar types of pipe, manufactured adapters and fittings shall be used. Adapters and fittings shall be configured to maintain invert elevations at same level.

Joint deflections shall not exceed the limits established by the pipe manufacturer for the pipe and joint being used.

Joints that are damaged because of carelessness, improper handling, or failure to prevent imperfections in manufacture shall be subject to rejection and gaskets shall be subject to rejection whenever they show surface cracking, tears, or splice separation.

At times when pipe laying is not in progress, the open ends of pipe shall be closed with plugs to prevent the entry of foreign material. All foreign material shall be removed from the pipe prior to acceptance.

After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with specified backfill material tamped around it except at the bells. Trenches shall be kept water-free during bedding, laying, and jointing and for as long a period as necessary to permit proper execution of the Work.

Pipe shall be brought home by using a cross member and levers or jacks. It will not be permissible to push pipe home with motor-powered excavation equipment.

Force main and water main shall be installed in accordance with AWWA C600 for iron pipe, AWWA C605 for PVC pipe, and AWWA M55 for HDPE pipe. All plugs, caps, tees, hydrants, bends, and other fittings for water mains and force mains shall be provided with restrained joints.

The minimum length of pipe to be restrained shall be as shown in the following table:

REQUIRED LENGTH OF RESTRAINED PIPE BEYOND FITTING IN FEET

Fitting	Minimum Length—Ft
90 Degree Bend (4 inches)	36
90 Degree Bend (6 inches to 8 inches)	54
90 Degree Bend (10 inches to 12 inches)	72
90 Degree Bend (14 inches)	84
45 Degree Bend (≤ 6 inches)	18
45 Degree Bend (8 inches to 14 inches)	36
22 1/2 Degree Bend ≤ 14 inches	18
11 1/4 Degree Bend ≤ 14 inches	9
Fire Hydrant Leads	All Joints
End of Line Tees (4 inches)*	18 (Along Branch)
End of Line Tees (6 inches to 8 inches)*	36 (Along Branch)
End of Line Tees (10 inches to 12 inches)	54 (Along Branch)
End of Line Tees (14 inches)*	66 (Along Branch)

*Restrained run length on tees assumed 18 feet on each side of fitting

This table assumes horizontal orientation of fittings, 150 psi test pressure plus a 100 psi water hammer allowance, ductile iron pipe, and a 3-foot bury. Lengths shall be adjusted for other conditions and fittings. For other fittings and for more specific requirements, see the Drawings or **SPECIAL PROVISIONS**.

4.5 SEWER SERVICE BRANCH AND LATERAL INSTALLATION

General: CONTRACTOR shall furnish and install sanitary sewer and storm sewer branches, laterals, and leads as shown on the Drawings or requested by ENGINEER. Under normal circumstances, service laterals will be installed within the right-of-way or easement to serve all existing buildings and all platted lots. In certain cases, only wye or tee branches will be installed to vacant lots. Service laterals shall consist of a branch fitting at the main and extension of the specified lateral pipe to the end of lateral as called for and requested. All necessary fittings shall be furnished and installed to complete the installation as shown on Drawing 01-975-75A. All necessary fittings shall be furnished and installed to complete installation of for storm sewer leads as shown on Drawing 01-975-41A.

Wye or Tee Branches: Wherever shown on the Drawings or requested by ENGINEER, wye or tee branches shall be provided for use in making sanitary sewer service and storm sewer inlet connections. Unless specified otherwise in the **SPECIAL PROVISIONS** or as shown on the Drawings, wye or tee branches for sanitary sewer service lateral connections to single-family residences shall be 4-inch diameter. All other sanitary sewer service lateral connections shall be 6 inches. Wye or tee branches for storm sewer inlet connections shall be of the size called for on the Drawings, 12-inch minimum.

Sanitary sewer service branches shall be turned so that the branch is at an angle of 30 degrees or 45 degrees with the horizontal.

Sanitary Sewer Service Laterals: Under normal conditions and unless otherwise specified in the **SPECIAL PROVISIONS**, shown on the Drawings, or requested by ENGINEER, all service laterals shall be Standard Laterals, Type 1, as shown on Drawing 01-975-75A. Service laterals of Types 2 through 6 may be requested by ENGINEER to meet field conditions.

It is the general intent to install Modified Laterals, Type 2, 4, or 5 for service to homes that presently have shallow or no basements or where the depth to groundwater at the end of lateral is shallow. Type 3 and 6 risers are only to be provided where shown on the Drawings or specified in the **SPECIAL PROVISIONS**.

Installation and Testing Requirements: Except for those branches that are to be used on storm sewers or for extending sanitary sewer service laterals, wye and tee branches shall be closed with airtight stoppers blocked to withstand air test pressures.

The ends of all laterals shall be plugged and blocked to resist air test pressures. All plugs shall be manufactured to fit the pipe used and shall be watertight. The ends of all laterals shall be marked as shown on Drawing 01-975-75A using flagging tape and 2 by 4 markers.

A complete and accurate tabulation of length, depth, and location of all branches, risers, and laterals shall be kept by CONTRACTOR on cards available from ENGINEER. Measurements shall be made from the nearest downstream manhole. Lateral installation to meet these Standard Specifications and field conditions are the responsibility of CONTRACTOR. Problems occurring because of failure to provide proper installation or proper records shall be corrected by CONTRACTOR at its expense.

No installed lateral shall be backfilled until ENGINEER has been notified that the lateral is complete and reasonable time is allowed for observation of the Work.

4.6 WATER SERVICE LATERAL INSTALLATION

Water service laterals requiring reconstruction and new service laterals shall be installed in accordance with AWWA C600. CONTRACTOR shall perform all excavation, backfill, and other Work necessary for a complete installation. The service tubing shall be continuous and shall be placed at a minimum depth of 30 inches. Each service shall include a corporation stop at the main, copper service tubing, curb stop, curb box, couplings, and all other appurtenances necessary for a complete installation. Where existing services in the street are being reconstructed, the new service shall be connected to the existing service at the property line unless otherwise shown or specified. Taps in the main shall be at an angle of 45 degrees above the horizontal.

OWNER reserves the right to make taps and connections to the new mains prior to backfilling by CONTRACTOR. CONTRACTOR shall delay backfilling until OWNER has completed its Work.

All curb boxes on new services shall be marked by placing a 4-foot-long 2 by 4 adjacent to it. The 2 by 4 shall project 1 foot above existing ground and shall be painted blue. All services shall be extended to the street property line, unless otherwise shown or specified.

4.7 PORTABLE TRENCH BOX

Whenever a portable trench box or shield is used, special precautions shall be taken so as not to pull already jointed pipe apart or leave voids around the pipe wall. Whenever possible, the bottom edge of the box shall be kept at a level approximately even with the top of pipe. Cover material shall be placed to at least the top of pipe before moving the box ahead.

4.8 MANHOLES

Manholes shall be installed in accordance with Drawing 01-975-41A for storm sewer, Drawing 01-975-42A for water main, and Drawing 01-975-43A for sanitary sewer. Manholes shall be plumb with any steps aligned and openings located over steps. For sanitary sewers, openings shall be located over the bench and not the sewer flow line itself.

All manholes shall be made watertight and shall show no visible signs of leakage at the time of final review and within the correction period. Any leakage shall be sealed from the exterior of the manhole.

4.9 STORM SEWER INLETS

Storm sewer inlets shall be installed in accordance with Drawing 01-975-41A. Inlets shall be set to the line and grade as furnished by ENGINEER. The outside end of the lift hole shall be covered with filter fabric to prevent the entrance of fines into the inlet.

Inlets shall be connected to the storm sewer main either at manholes, at wye branches in the main, or to other inlets, all as shown on the Drawings. Minimum size of inlet lead pipe shall be 12 inches.

Storm inlets shall be backfilled to undisturbed soil and at least 2 feet along connecting piping with bedding material.

4.10 MASONRY

No masonry shall be laid when the temperature of the outside air is below 40°F unless all masonry materials are heated and protected against freezing.

Only enough mortar shall be mixed that can be conveniently used before it reaches initial set. Retempering of mortar will not be permitted.

4.11 ABANDONING UTILITIES

Utilities to be abandoned shall, unless otherwise noted on the Drawings or in the **SPECIAL PROVISIONS**, be abandoned in place. Open ends of pipes shall be plugged with 12 inches of concrete. Manhole barrels, valve boxes and other such structures shall be removed to a point 3 feet below existing or final ground surface, whichever is lower, and shall then be filled with backfill material compacted to that of the trench backfill. An approximate 9-inch-diameter opening shall be made in the bottom of the structure to allow for groundwater movement.

4.12 CONNECTIONS TO AND MODIFICATIONS OF STRUCTURES AND MAINS

Unless otherwise noted on the Drawings or in the **SPECIAL PROVISIONS**, openings in existing structures to allow for connection of mains shall be core drilled, and the mains themselves shall be connected by use of watertight connections as specified in the Standard Specifications. Flow channels in the bottoms of existing structures shall be modified as necessary to provide smooth transition for incoming flow and/or orientation of mains. These modifications may include breaking out and reforming flow channels. See **SPECIAL PROVISIONS** for any additional requirements.

Where mains, new and existing, are to intersect, dog house manholes shall be provided to facilitate connection and to gain access to the intersecting mains. Manholes shall be provided at the manufacturing plant with arched openings in lower barrel section to span each of the intersecting mains. Reinforcing shall be cut and bent back. In the field, manhole shall be set on concrete blocks, with reinforcing provided according to Drawing 01-975-41A, 42A, or 43A for the bottom slab. Concrete shall be poured under and around the manhole to seal all openings, cover and adhere to the slab and bent reinforcement, and

provide for benches or fillets in the manhole. Sanitary and storm sewer mains shall be kept intact until the bench or fillet is poured. Then the top of pipe to springline shall be removed to provide access. See **SPECIAL PROVISIONS** for any additional requirements.

SECTION 5–BACKFILLING

5.1 BACKFILL MATERIAL

Backfill shall be that material placed between the top of cover material to the subgrade for placement of restoration materials. Backfill for storm inlets shall be bedding material.

When the type of backfill material is not otherwise specified or shown on the Drawings, CONTRACTOR may backfill with the excavated material, provided that such material consists of loam clay, sand, gravel, or other materials which in the opinion of ENGINEER are suitable for backfilling.

All backfill material shall exceed 35°F and be free from frost, cinders, ashes, refuse, vegetable or organic matter, boulders, rocks, or stone, frozen lumps, or other material which in the opinion of ENGINEER is unsuitable. From 1 foot above the top of the pipe to the trench subgrade, well-graded material containing stones up to 8 inches in their greatest dimension may be used, unless otherwise specified in the **SPECIAL PROVISIONS**. Care should be taken in backfilling so as not to damage the installed pipe.

In refilling the trench, if there is not sufficient material excavated therefrom suitable for refilling, CONTRACTOR shall, without extra compensation, furnish the deficiency. Where indicated on the Drawings, fill shall be provided over projecting conduits. Such fill shall be free of large boulders, and the top 6 inches shall be of suitable material to fit the adjoining ground.

5.2 GRANULAR BACKFILL

When called for on the Drawings, in the **SPECIAL PROVISIONS**, or requested by ENGINEER, backfill material shall be granular and shall consist of durable particles ranging in size from fine to coarse in a substantially uniform combination. Sufficient fine material shall be present to fill all the voids in the coarse material. No stones over 3 inches or clay lumps shall be present. Unless otherwise allowed by ENGINEER, granular backfill shall generally conform to the following gradation specification:

GRANULAR BACKFILL

Sieve Size	Percentage by Weight Passing
3 inches	100
2 inches	95 to 100
No. 4	35 to 60
No. 200	5 to 10

5.3 PLACEMENT

All trenches shall be backfilled using specified material so that excessive lengths of trench are not left open. In general, the backfilling operation shall proceed so that no more than 100 feet of trench is open behind the pipe laying operation.

Backfill shall be left below the original surface to allow for placement of restoration materials including pavement, base course, concrete, topsoil, sod, plus any pavement replacement specified in accordance with the Asphaltic Paving section herein. When settlement occurs, CONTRACTOR shall restore the surface improvements at its expense, to maintain the finished surface.

5.4 BACKFILL CONSOLIDATION

Unless specifically deleted in the **SPECIAL PROVISIONS**, all trenches shall be consolidated as specified in this section for the entire depth and width of the trench.

Consolidation shall be achieved by use of smooth surface vibratory compactors or backhoe-operated hydraulic compactors for granular materials and rotating sheepsfoot type mechanisms for loam/clay soils. The lift height shall not exceed 8 inches for walk-behind hand-operated vibratory compactors and sheepsfoot. Lift height shall not exceed 24 inches for self-propelled vibratory drum or backhoe-operated hydraulic compactors. Smaller lift heights shall be provided as necessary to achieve the degree of compaction specified.

Unless specified otherwise in the **SPECIAL PROVISIONS**, backfill material beneath paved areas or future paved areas and within 5 feet of paved areas or future paved areas shall be consolidated as follows: Within 3 feet of the surface 95% of maximum dry density, below 3 feet from the surface to 1 foot above the pipe 90% of maximum dry density, as determined by the modified Proctor Test (ASTM D1557).

Unless otherwise specified in the **SPECIAL PROVISIONS**, backfill material placed in all other areas shall be compacted to the point where no additional consolidation can be observed from the compaction and backfill equipment being used.

Backfill material not meeting the compaction specification shall be recompacted by CONTRACTOR at no cost to OWNER. Cost for additional testing on recompacted material shall be at CONTRACTOR's expense.

5.5 MAINTENANCE OF SURFACE

CONTRACTOR shall maintain all backfilling, resurfacing, repaving, and other surface improvements constructed under this Contract. CONTRACTOR shall, upon proper notice from OWNER, make all repairs in surfaces of trenches and excavations. All expenses incurred by OWNER and/or CONTRACTOR in making repairs and all expenses in maintaining trench and excavation surfaces shall be at the expense of CONTRACTOR regardless of the material used in backfilling trench excavations. OWNER reserves the right to make all emergency repairs necessary to make safe all streets and walks at the expense of CONTRACTOR regardless of the material used in backfilling trench excavations. A maintenance guarantee fund, if specified in the **SPECIAL PROVISIONS**, will be withheld from the final amount due CONTRACTOR for a period of six months after acceptance of the Work to assure such maintenance.

CONTRACTOR shall be responsible for controlling dust dispersion during utility and street construction. Remedial actions required as a result of inadequate dust control shall be CONTRACTOR's responsibility. To control dust, CONTRACTOR shall apply calcium chloride or ammonium lignin sulfonate in 12 to 14% solution or other dust control palliative acceptable to OWNER. Prior to application of dust palliative, the street shall be graded smooth.

SECTION 6—ROADWAY AND DRAINAGE EXCAVATION, GRADING AND BASE COURSE

6.1 GENERAL

The Work under this section includes all clearing, grubbing, excavation, grading, base course, and other miscellaneous items of Work required for restoration of utility construction Work and for street construction as shown on the Drawings and included in the Standard Specifications.

Unless otherwise specified, all street construction Work shall conform to the KYDOH Specifications as amended herein. Street construction shall mean street, roadway, parking lot, driveway, and similar type construction.

See **SPECIAL PROVISIONS** for availability of water for use in street construction.

6.2 CLEARING AND GRUBBING

In general, allowable tree removals shall be those trees which are necessary to remove for utility and street construction within the right-of-way or easement areas. Actual allowable tree removals will be determined in the field by ENGINEER. All trees and brush outside the right-of-way or easement areas shall be protected by CONTRACTOR, unless otherwise allowed by ENGINEER.

For utility construction, trees and brush to be removed outside the immediate trench area shall be cut flush with the ground surface or pushed over for all brush and for all trees 12-inch Diameter Breast Height (DBH) or less measured 4.5 feet aboveground. Trees in excess of 12-inch DBH shall be cut to within 6 inches of the ground surface. A basal application of herbicide shall be applied to all remaining stumps to prevent the development of suckers. Trees that are pushed over shall have their stumps removed and disposed of off-site.

Trees and brush, including stumps, within the trench area and within areas of street, sidewalk, bike path, and driveway construction shall be removed from the site and disposed of.

6.3 COMMON EXCAVATION

All street excavation shall be performed as called for in Section 204 of the KYDOH Specifications and as herein modified.

The following items of Work shall be included in common excavation:

- a. The excavation to subgrade elevations as detailed in the Drawings including road bed areas, terraces, sidewalks, bike paths, driveways, and other miscellaneous surface improvements.
- b. Removal (and stockpiling, if the use of salvaged topsoil is required) of topsoil from all cut areas and fill areas within a 1:1 slope of finished street, sidewalks, bike paths, driveways, and other miscellaneous surface improvements.
- c. The preparation, grading, compaction, and proof-rolling of subgrade areas for roadbed, sidewalks, bike paths, driveways, and other miscellaneous surface improvements to the elevations detailed on the Drawings.
- d. Excavation and grading required to realign and/or create ditch lines and drainage ways to route drainage to or from storm facilities as shown on the Drawings, or as necessary to maintain positive drainage.
- e. Removal of temporary backfill placed in new utility trenches above the subgrade.
- f. The removal and disposal of all undesirable and surplus materials.

Common excavation may be completed as part of utility construction prior to initiating general street excavation activities.

All subgrade areas in streets and parking lots, including utility trench restoration areas, shall be proof-rolled with a heavily loaded triaxle dump truck or other similar equipment requested by ENGINEER prior to the placement of any fill materials or base course. ENGINEER must be present during proof-rolling to review the Work necessary for the stabilization of any unstable areas identified.

Saw cuts shall be made in existing pavement, driveways, curb and gutter, and sidewalks to allow restoration to neat straight lines. Saw cuts damaged during construction shall be recut prior to beginning restoration.

6.4 ROCK EXCAVATION, STREETS

Rock excavation for streets shall include removal of rock to subgrade elevations. Rock for excavation purposes shall be as defined in the Rock Excavation, Utilities section. Such rock shall be classified as undesirable backfill and disposed of in accordance with the Excavation to Grade section.

6.5 BORROW EXCAVATION

CONTRACTOR shall salvage suitable materials from utility and street construction activities to provide fill for street construction. Where sufficient quantities of materials suitable for street construction are not available from areas of the site, CONTRACTOR shall perform borrow excavation to make up the deficit in accordance with Section 205 of the KYDOH Specifications.

6.6 EXCAVATION BELOW SUBGRADE

ENGINEER may request the excavation of unsuitable materials in areas of unstable subgrade. The excavation of such materials, except in areas where CONTRACTOR has completed utility construction or placed street fill, shall be measured by ENGINEER for payment.

The excavation and replacement of unstable utility trench backfill and/or street fill placed by CONTRACTOR shall be at CONTRACTOR's expense.

Base course placed on unstable foundation shall be removed and replaced at CONTRACTOR's cost following excavation of the affected area.

Where requested by ENGINEER in the field, excavation below subgrade areas shall be lined with geotextile material and backfilled with Size No. 2 crushed stone base course as specified herein.

6.7 GEOTEXTILES

Geotextile shall be placed as requested by ENGINEER to stabilize street subgrade areas. Construction fabric shall be Mirafi 600X, Propex 2006, or equal. Any alternate fabric must have ENGINEER's approval prior to use. Construction fabric shall be installed in accordance with the manufacturer's recommendations. Vibratory compaction shall not be used in the compaction of base course in areas where construction fabrics are used.

6.8 PREPARATION OF FOUNDATION

The subgrade shall be graded and rolled to provide uniform density and shall comply with the profile and cross sections contained in the Drawings. All Work shall comply with Section 207 of the KYDOH Specifications.

6.9 CRUSHED AGGREGATE BASE COURSE

Crushed aggregate base course shall consist of crushed stone or crushed gravel and be furnished in accordance with Section 302 of the KYDOH Specifications. Crushed aggregate base course shall be placed directly on subgrade areas or on top of salvaged asphaltic millings. CONTRACTOR shall supply ENGINEER with a current sieve analysis of the material prior to use. The material furnished shall be uniformly graded and shall conform to ASTM C33.

For street construction, base course shall be placed to the thickness shown on the standard sections. Where standard sections are not provided, a minimum of 9 inches of base course shall be provided. Base course thickness for utility trench patches in street areas shall match existing base course thickness with 12 inch minimum. The top 3 inches of base course shall be DGA. The remaining base course shall be Size No. 2. Base course shall be wetted and rolled with a self-propelled hydrostatic-drive vibratory roller. Unless otherwise requested by ENGINEER in the field, excavation below subgrade backfill shall be Size No. 2.

The finished new base course shall be fine-graded, rolled, and compacted in preparation for placement of new pavement. CONTRACTOR shall maintain the finished surface until pavement is placed.

6.10 SALVAGED ASPHALT PAVEMENT BASE

Where required on the Drawings or in the **SPECIAL PROVISIONS**, CONTRACTOR shall salvage existing asphaltic pavement for use as base course for street construction and/or restoration. Work shall be completed in accordance with Section 408 and 409 of the KYDOH Specifications as amended herein.

Pulverized asphalt millings shall consist of asphalt pavement that has been pulverized in place to the full depth of existing pavement. Pulverized millings shall be graded and compacted to the grades established by ENGINEER prior to placement of new asphaltic pavement. Ninety-five percent (95%) of pulverized millings shall pass a 1 1/4-inch screen with all material less than 4 inches in its longest dimension.

Salvaged asphalt millings shall consist of asphalt pavement that has been milled and transported for use as base course for street construction and/or restoration. Ninety-five percent (95%) of salvaged millings shall pass a 1 1/4-inch screen with all material less than 4 inches in its longest dimension.

SECTION 7—CONCRETE CURB AND GUTTER, SIDEWALK, AND PAVEMENT

7.1 GENERAL

The Work under this division includes the construction or reconstruction of all concrete improvements required for utility or street construction as shown on the Drawings and as specified. CONTRACTOR shall schedule its Work to comply with the Traffic Control section of Division 01.

Unless otherwise specified, all street construction Work shall conform to the KYDOH Specifications as amended herein.

7.2 CONCRETE

All concrete shall conform to the requirements as called for in Section 601 of the KYDOH Specifications, unless otherwise specified. All concrete shall be normal set air-entrained concrete with water reducing agent, Grade A-WR with Type IA cement capable of producing a minimum compressive strength of 3,000 psi in 10 days.

As soon after finishing operations as the free water has disappeared, the concrete surface shall be sealed by spraying on it a uniform coating of curing material to provide a continuous water impermeable film on the entire concrete surface.

Liquid curing compounds shall conform to the requirements of AASHTO Designation M148, Type 2, White Pigmented.

The material shall be applied to form a uniform coverage at the rate of not less than 1/2 gallon per 100 square feet of surface area.

Within 30 minutes after the forms have been removed, the edges of the concrete shall be coated with the curing compound, applied at the same rate as on the finished surface.

CONTRACTOR shall erect and maintain suitable barricades to protect the new concrete. Where it is necessary to provide for pedestrian traffic, CONTRACTOR shall construct adequate crossings. Crossing construction shall be such that no load is transmitted to the new concrete.

Any part of the Work damaged or vandalized prior to final acceptance shall be repaired or replaced at the expense of CONTRACTOR.

Pedestrian traffic shall not be permitted over new concrete prior to 72 hours after application of curing material. Vehicular traffic shall not be permitted over newly placed concrete until a minimum compressive strength of 3,000 psi has been achieved.

When the atmospheric temperature exceeds 80°F during concrete placement, ACI 305.1 shall apply in addition to all other sections of the Standard Specifications.

Cold weather concreting shall conform to the requirements of ACI 306.1 and all other sections of the Standard Specifications. Cold weather is defined as a period when, for more than 3 successive days, the average daily temperature drops below 40°F. The average daily temperature is the average of the highest and lowest temperature during the period from midnight to midnight. When temperatures above 50°F occur during more than half of any 24-hour period, the period will no longer be regarded as cold weather.

The temperature of the delivered concrete shall not exceed 85°F.

Care shall be exercised to keep mixing time and elapse time between mixing and placement at a minimum. Ready-mix trucks shall be dispatched in a timely manner to avoid delay in concrete placement, and the Work shall be organized to use the concrete promptly after arrival at the jobsite.

The subgrade, forms, and reinforcing shall be sprinkled with cool water just prior to placement of concrete. Prior to placing concrete, there shall be no standing water or puddles on the subgrade.

If approved by ENGINEER, an admixture for retarding the setting of the concrete may be used.

Concrete shall be thoroughly tamped to remove all voids. The exposed surface shall be thoroughly troweled and finished with a brush at right angles to vehicular or pedestrian traffic. All edges shall be rounded with a 1/4-inch-radius edger. Honeycombed areas shall be pointed and rubbed with mortar to provide a void-free surface.

Before final finishing, a 10-foot straight edge shall be used to check the surface. Any areas showing a variation of more than 1/4 inch from the straight edge shall be corrected. Final finishing shall be delayed a sufficient time so that excess water and grout will not be brought to the surface.

7.3 CURB AND GUTTER

Curb and gutter where required for street construction, site work construction, or for restoration of utility construction shall be placed using forms or a machine to the dimensions and shape shown. Where curb and gutter details are not provided, curb and gutter shape and dimensions shall match existing adjacent curb and gutter. The base course beneath the curb and gutter shall be trimmed or filled as necessary to provide a full depth of curb and gutter as shown on the Detail Drawings. In the absence of Detail Drawings, depth shall be to the adjacent street subgrade with a minimum 4 inches. Prior to placement of concrete, the base shall be thoroughly compacted and moistened.

Where forms are used, they shall be of metal and of sufficient strength to resist distortion or displacement. Forms shall be full depth of the Work. Facing boards, if used, shall be built to obtain the cross section called for on the Detail Drawings. Forms shall be securely staked and held firmly to line and grade. Forms shall be cleaned thoroughly and oiled before reuse.

All curved curb and gutter shall form smooth curves and shall not be a series of chords. Radius forms shall be used for all curved curb and gutter where the radius of curvature is 100 linear feet or less.

Driveway openings in the curb line will be staked by ENGINEER in the field. The details for concrete gutter sections through a driveway are shown on the Detail Drawings.

A 3/4-inch expansion joint filler shall be placed through the curb and gutter at the radius points of all intersection curbs at storm inlets and at a maximum interval of 100 feet. This expansion joint filler shall extend through the entire thickness of concrete and shall be perpendicular to the surface and at right angles to the line of the curb and gutter.

At intervals of not more than 10 feet, a contraction joint shall be tooled to a depth of one-fifth of the total concrete thickness with a 1/4-inch-radius jointer. The contraction joint shall be at right angles to the line of the curb and gutter.

If machine-formed curb and gutter is placed by CONTRACTOR, CONTRACTOR shall create a plane of weakness at all joints that is sufficient to cause contraction cracking at the joints.

CONTRACTOR may saw contraction joints. The depth of cut shall be a minimum of one-fifth of the total concrete thickness. Sawing shall be done as soon as practicable after the concrete has set sufficiently to preclude raveling during the sawing and before any shrinkage cracking takes place in the concrete. If this results in random cracking, CONTRACTOR will be required to tool the contraction joints as specified above.

Steel separator plates of a section conforming to the curb and gutter as shown on the Detail Drawings shall be placed directly opposite all contraction joints in abutting street pavement. After separator plates have been removed, the edges of the joints shall be rounded with a 1/4-inch-radius edge. The use of steel separator plates at other locations will not be allowed.

7.4 CONCRETE SIDEWALK AND DRIVEWAYS

Concrete sidewalk and driveway construction required for a street or site work construction or for restoration of utility construction shall be placed using forms or machines to the dimensions and thicknesses shown. Where details are not provided match existing, but sidewalks shall be no less than 5 inches thick and driveways shall be no less than 7 inches thick.

The subgrade shall be thoroughly compacted and finished to a trim, firm surface. All soft or unsuitable material shall be removed and replaced with suitable material.

A minimum 4-inch-thick layer of sand, sand and gravel, or base course shall be placed under all sidewalks and driveways. This material shall be thoroughly moistened and compacted before the concrete is placed.

Where forms are used, they shall be of metal or wood and shall be of sufficient strength to resist distortion or displacement. They shall be full depth of the Work and shall be securely staked to hold the required line and grade. Where machines are used, concrete mixture shall be controlled to prevent distortion from sloughing.

Concrete sidewalk shall be segmented into 5-foot-long rectangular blocks with tooled joints. Concrete driveways shall be segmented into uniform rectangular blocks with tooled joints at a maximum spacing of 10 feet in each direction. The joint must extend at least one-fifth of the total thickness of concrete. The edges of the sidewalk along forms and joints shall be rounded with an edging tool of 1/4-inch radius. All joints shall be at right angles to the centerline of the sidewalk.

A 1/2-inch-thick asphaltic expansion joint filler shall be placed at sidewalk-driveway intersections, at sidewalk-sidewalk intersections, at the intersection with new or existing curb and gutter, around all castings, and at maximum 40-foot intervals in sidewalks.

Sidewalk cross slope shall be 1.5 percent unless otherwise noted in the Drawings or requested by ENGINEER. Handicap ramps shall have a maximum slope of 7 percent, with maximum grade changes of 11% at curb to ramp transitions, and be provided with a truncated dome patterned surface meeting ADA requirements.

SECTION 8--ASPHALTIC PAVING

8.1 GENERAL

The Work under this division includes asphaltic concrete pavement and other miscellaneous items and Work required for utility or street construction as shown on the Drawings and included in the Standard Specifications for paving.

Unless otherwise specified, all paving shall conform to the KYDOH Specifications as amended by these Standard Specifications and by the **SPECIAL PROVISIONS**.

ENGINEER may request samples of asphaltic concrete for testing. CONTRACTOR shall cut samples from the finished pavement where requested by ENGINEER and patch the sample area. Samples for sieve analysis and asphalt content will be taken by ENGINEER prior to placement.

8.2 ADJUSTING CASTINGS

Where surface course paving is completed in the following construction season, castings shall initially be set to the finished lower course grade before lower course is placed. Where upper course paving and lower course paving are completed in the same construction season, castings shall be adjusted to final grade prior to paving.

Where adjustments are required, they shall not be made more than 48 hours prior to the anticipated time of paving. CONTRACTOR shall furnish Class 1 barricades with flashers on all adjusted castings until paving has been completed.

Internal chimney seals, where required, shall be installed after castings have been adjusted to finished grade.

Valve boxes shall be adjusted by turning the box. The valve box shall be seated on the adjusting threads to prevent future settlement. The box shall be adjusted to conform to the finished pavement and shall be plumb to allow valve operation. OWNER shall be contacted by CONTRACTOR to check operation of valve after box adjustment and prior to paving.

8.3 ASPHALTIC CONCRETE PAVING

This Work shall include the construction of asphaltic concrete surface course for areas to be paved including utility trench restoration and new street construction. All Work shall be performed in accordance with Section 403 of the KYDOH Specifications and as modified by **SPECIAL PROVISIONS**.

Asphaltic concrete pavement shall be ESAL Class 2.

Asphaltic binder for intermediate course and surface course shall be PG 64-22 per Section 806 unless specified otherwise in the **SPECIAL PROVISIONS**.

Aggregate shall comply with Sections 804 and 805.

Prior to the commencement of paving, mix designs and aggregate sieve analysis shall be submitted to ENGINEER.

The pavement structure for street areas and driveways shall be in accordance with the standard sections. Where standard sections are not provided, the minimum pavement structure shall consist of 2 1/4 inches of asphaltic concrete intermediate course material and 1 3/4 inches of asphaltic concrete surface course for street and parking lot construction and 2 1/2 inches of surface course material for bike paths, sidewalks, and asphalt driveways. Pavement thickness for trench restoration shall match adjacent pavement thickness or minimum thickness as specified for street construction, whichever is greater.

8.4 TACK COAT

Unless otherwise specified in the **SPECIAL PROVISIONS** or shown on the Drawings, CONTRACTOR shall provide tack coat between all layers of new asphalt and on existing pavement to be overlaid with new asphalt. Tack coat shall meet the requirements of Section 406 of the KYDOH Specifications.

8.5 PAVEMENT STRIPING

Where required on the Drawings or in the **SPECIAL PROVISIONS**, CONTRACTOR shall provide painted pavement markings.

Two-way traffic shall be maintained at all times.

Centerline marking shall be double 4-inch solid yellow line, placed at the marked centerline.

Traffic lane marking shall be single 4-inch broken white line, placed 12 feet from median curb flange or as shown or requested by ENGINEER. Turning lane markings and crosswalk markings shall be 8 inches and 6 inches solid white, respectively. Stop bars shall be 18 inches solid white.

All markings shall be applied in accordance with Sections 713 and 842 of the KYDOH Specifications and the Manual on Uniform Traffic Control Devices.

Markings shall be placed at locations noted within 1-inch tolerance.

SECTION 9—RESTORATION AND SITE WORK

9.1 SCOPE

The Work under this portion of the Contract includes finished grading, seeding, sodding, miscellaneous restoration, and other miscellaneous items of Work outside of the areas to be paved.

CONTRACTOR shall proceed with restoration of property and cleanup of all disturbed areas concurrently with the installation of utilities and street construction.

Where restoration is included as a portion of a Bid item, the estimated cost of restoration and cleanup, up to a maximum of 15% of each Bid item, may be withheld until final cleanup of the Work in each Bid item.

Unless otherwise specified, all restoration Work shall conform to the KYDOH Specifications and the **SPECIAL PROVISIONS**.

See **SPECIAL PROVISIONS** for availability of water for use in restoration and site work.

9.2 SEEDING AND SODDING

Seeding and sodding shall be completed in all areas disturbed by construction other than areas with finished gravel, brick, asphalt, concrete, or decorative landscape treatments.

9.2.1 SEED RESTORATION

Unless otherwise shown on the Drawings or specified in the **SPECIAL PROVISIONS**, all areas disturbed by construction shall be restored with seed restoration. Prior to seeding, disturbed areas shall be graded to subgrade for placement of topsoil.

Topsoil shall consist of salvaged topsoil or hauled-in topsoil provided and placed in accordance with Sections 212 and 827 of the KYDOH Specifications. Topsoil shall be placed to a uniform depth of 6 inches in place.

All areas requiring terrace restoration that do not require sod restoration shall be restored by seed restoration. Seed restoration shall consist of placing and grading topsoil, seeding, fertilizing, and mulching.

Seed materials and placement shall conform to Sections 212 and 827 of the KYDOH Specifications unless otherwise requested by ENGINEER. CONTRACTOR shall not be responsible for watering. Fertilizer shall conform to Sections 212 and 827. Mulching shall conform to Sections 213 and 827 for straw mulch.

9.2.2 SOD RESTORATION

Specific areas to be restored with sod shall be shown on the Drawings or specified in the **SPECIAL PROVISIONS**. Sod restoration shall be completed in accordance with the following: Prior to placement of sod, finish grading shall be completed. Finish grading shall consist of placing topsoil to the edge of hard-surfaced areas or to limits established by ENGINEER.

Topsoil shall be of humus-bearing soil, adapted to the sustenance of plant life and commonly known as black dirt, and shall be free of stones, debris, vegetable material, and excesses of peat, sand, or clay. Unless otherwise specified, topsoil shall be placed 4 inches thick and shall be graded and raked. Finished

top soiled areas shall be free of stones, road material, or lumps of dirt. The soil in the area to be sodded shall be loosened and brought to a reasonably fine granular texture to a depth of not less than about 1 inch.

A 15-30-15 fertilizer shall be spread uniformly over the areas at the rate of 17 pounds per 1,000 square feet of area unless otherwise specified in the Contract. Fertilizer shall be worked into the soil prior to placing sod.

Sod shall consist of a dense, well-rooted growth of permanent and desirable grasses, indigenous to the general locality where it is to be used, and shall be practically free from weeds or undesirable grasses. At the time the sod is cut, the grass on the sod shall have a length of approximately 2 inches (if longer, the grass shall be cut to approximately this length), and the sod shall have been raked free from debris.

The sod shall be cut in uniform strips approximately 18 inches by 36 inches but no longer than is convenient for handling and transporting.

The thickness of the sod shall be as uniform as possible, approximately 1 1/2 inches or more, depending on the nature of the sod, so that almost all of the dense root system of the grasses will be retained, but exposed, in the sod strip and so that the sod can be handled without undue tearing or breaking.

Sod shall be laid so that the joints caused by abutting ends of sod strips are not continuous. Each sod strip shall be so laid as to abut snugly against the strip previously laid.

As the sod is being laid, it shall be rolled or firmly but lightly tamped with suitable wooden or metal tampers to set or press the sod into the underlying soil.

At points where water will flow over a sodded area, the upper edges of the sod strips shall be turned into the soil below the adjacent area and a layer of earth placed over this juncture, which earth shall be thoroughly compacted to conduct the surface water over the upper edge of the sod.

At the limits of sodded areas, wherever practical or feasible, the end strips shall be placed to effect a broken line, and ends of the strips shall be turned in and treated as above described.

All sodded areas shall be kept thoroughly moist until the sod is established. Sod that dies during correction period shall be replaced at no cost to OWNER.

9.3 MISCELLANEOUS RESTORATION

CONTRACTOR shall be responsible for the proper replacement of all damaged street and highway signs and markers at all times during construction. Repair or replacement of signs shall be subject to review of ENGINEER and applicable local, state, and federal highway departments before final acceptance of the Work.

CONTRACTOR shall restore all culverts removed, damaged, or disturbed during construction to their original condition or they shall be replaced. Mailboxes shall be restored to their original locations and height. Light poles and power poles shall be restored to their original location. Underground improvements, such as water main, gas main, telephone or electric lines or drain tiles shall be restored to original condition. At all locations where utilities cross, compacted backfill shall be used from the bottom of the excavation to the top of the highest conduit. All street improvements, fences, walkways, and home and yard improvements, if destroyed, damaged, or removed shall be replaced to original condition or better.

Where construction interrupts existing private or public sewer and water systems, it shall be CONTRACTOR's responsibility to maintain these systems or provide alternative means until the new

system is placed in operation or until final acceptance of the Work, whichever occurs first. No bypassing of untreated wastewater will be allowed.

9.4 RETAINING WALLS

9.4.1 BOULDER WALLS

In areas as generally shown on the Drawings and as specifically noted in the field by ENGINEER, CONTRACTOR shall construct boulder walls.

The boulders shall be round field stone. The stone shall consist of varying sizes and weights. The minimum weight shall be 250 pounds.

The stone shall be placed randomly. The larger stone shall be placed at the bottom; minimum 12 inches deep into the soil. The minimum batter shall be 3 inches in one vertical foot unless otherwise allowed by ENGINEER. Geotextile fabric shall be installed behind the wall to prevent the backfill from eroding through the joints and courses. Backfill shall meet the requirements of the Backfilling section. The layout of the wall shall be reviewed by ENGINEER prior to construction of the wall. A suitable foundation shall be provided to preclude settlement. The wall may be constructed in conjunction with the new embankment. Chinking shall be provided to secure stability of the stones.

9.4.2 CUT BLOCK MODULAR RETAINING WALL

This Work includes construction of interlocking modular concrete retaining wall units and accessories at locations shown on the Drawings and as requested by ENGINEER in the field.

Modular wall units shall be constructed in accordance with ASTM C90, ASTM C140, ASTM D2339, and ASTM D4475.

Masonry units, when delivered to the site, shall be thoroughly cured and shall be dry. When stored on the site, they shall not be in contact with the ground and shall be kept clean.

CONTRACTOR shall submit gradation of base leveling pad material and unit fill material as well as color samples for OWNER's selection.

CONTRACTOR shall provide design calculations verifying the proposed design satisfies the design parameters as shown on the Drawings and as required herein.

Masonry units shall be Keystone Retaining Units, or equal, as manufactured in accordance with ASTM C90 and ASTM C140.

Masonry units shall have a minimum 28-day compressive strength of 3,000 psi. The concrete shall have a maximum moisture absorption of 8%.

Standard units shall be classic straight split face, 8 inches high by 18 inches wide. Top row of units shall have a smooth face. Color of units will be selected by OWNER from manufacturer's standard color selections. A concrete wall cap/sidewalk will be constructed on top of the wall.

Units shall be interlocked with noncorrosive fiberglass pins.

Connecting pins shall be 1/2-inch-diameter thermoset isophthalic polyester resin-pultruded fiberglass reinforcement rods.

Pins shall have a minimum flexural strength of 128,000 psi and short beam shear of 6,400 pounds per ASTM D4475.

Construction adhesive shall be Keystone Kapseal, or equal, and shall meet requirements of ASTM D2339.

Base leveling pad material shall be 6 inches of compacted crushed stone, 3/8 inches to 3/4 inches. Pea gravel shall not be allowed.

Unit fill shall be free-draining, well-graded crushed stone, 3/8 inches to 3/4 inches, with no more than 5% passing the No. 200 sieve. Masonry unit voids shall be capable of accepting a railing post diameter of up to 3 inches. Nonshrink grout shall be used in voids accepting railing posts.

All walls shall be designed for a surcharge of 250 psf and a railing load of 50 plf in addition to the loads imposed by the retained material. The engineered design shall be in accordance with the AASHTO Standard Specifications for Highway Bridges, Section 5.8.

Foundation soil shall be excavated as required for leveling pad dimensions shown on the Drawings.

Subgrade shall be approved by the Project Soils Engineer to confirm that the actual foundation soil conditions meet or exceed assumed design strength. Soils not meeting required strength shall be removed and replaced with acceptable material.

Leveling pad materials shall be placed as shown on the Drawings to a minimum thickness of 6 inches and shall extend laterally a minimum of 6 inches in front of and behind the modular wall.

Materials shall be compacted to provide a level surface on which to place the first course of units. Compaction shall be to 95% of standard proctor for sand or gravel type materials. For crushed rock, material shall be densely compacted.

Leveling pad shall be prepared to ensure complete contact of retaining wall unit with base.

Units shall be installed to conform to elevations shown on the Drawings or as staked in the field to match existing grade.

The first course of concrete wall units shall be placed on the base leveling pad. The units shall be checked for level and alignment. Bottom of wall shall be minimum 12 inches below finished grade.

Units shall be placed side by side for full length of wall alignment. Alignment may be done by a string line or offset from base line.

Units shall be interlocked with fiberglass pins. Pins shall protrude into adjoining courses above a minimum of 1 inch. Two pins required per unit.

All voids inside and between units and drainage zone behind units shall be filled with tamped unit fill material. Automated compaction equipment shall not be used directly over the units. Walk-behind mechanical compaction equipment may be used to compact soils that are placed beyond the drainage zone behind the unit. Mobile mechanical compaction equipment shall not be used within 5 feet of the wall face.

While placing material behind first course of units, the passive soil wedge at the front of these units shall be placed.

All excess material from top of units shall be cleaned prior to installing the next course. Each course is to be completely filled, backfilled, and compacted prior to proceeding to next course.

A permanent mechanical connection of cap units to wall units shall be provided with construction adhesive.

9.4.3 STRUCTURAL GEOGRID

Geogrid shall be a product with a regular grid structure of a select high density polyethylene or polypropylene resin, UX1500MSE, as manufactured by Tensar Corporation, or equal.

Minimum allowable junction strength of the geogrid, per G.R.I.–GG2, shall be equal to or greater than 90% of the ultimate strength of the geogrid, as per G.R.I.–GG1.

The geogrid soil reinforcement shall be laid horizontally on compacted backfill. Place the next course of modular concrete facing units over geogrid. The geogrid shall be pulled taut and anchored prior to backfill placement on the geogrid.

Geogrid reinforcement shall be continuous throughout their embedment length(s). Spliced connections between shorter pieces of geogrid will not be allowed.

9.5 PLANTINGS

Plantings shall be provided as shown on the Drawings or as otherwise specified in the **SPECIAL PROVISIONS**. Plants should be planted on the day of delivery. If this is not possible, protect the stock not planted. Plant material shall be kept in the shade, well-protected with soil, wet moss or other acceptable material and shall be well-watered. Plants shall not be bound with wire or rope at any time to avoid damaging the bark or breaking branches.

Plants shall be lifted and handled from the bottom of the ball only. Plants moved with a ball will not be accepted if the ball is cracked, loose, or broken before or during the planting operations.

Fertilizer shall be delivered to site in original, unopened containers, each bearing manufacturer's guaranteed analysis. Packaged materials shall be stored off ground and protected from moisture.

CONTRACTOR shall coordinate planting Work with installation of sod and the construction of other site features.

CONTRACTOR shall take precautions to ensure that equipment and vehicles do not disturb or damage existing site grading, walks, drives, utilities, plants, etc., and shall replace and/or return to original condition any damage caused by CONTRACTOR's negligence at no cost to OWNER.

CONTRACTOR shall maintain plantings immediately upon installation of plants and continue until acceptance, including watering, weeding, removal of dead material, resetting of plants to proper grade and plumb position, and other necessary operations.

Plants shall be alive and in good, healthy, and flourishing condition of growth at the end of the correction period.

Any plant installed under this Contract that is dead or not in a vigorous, thriving condition shall be removed from the site and replaced at CONTRACTOR's cost as soon as conditions permit during the normal planting season. In case of any questions regarding the condition of a rejected plant, CONTRACTOR may elect to allow such plant to remain through another complete growing season. If at that time, the rejected plant is found to be dead or in an unhealthy or badly impaired condition, it shall be replaced.

One replacement after acceptance shall constitute fulfillment of CONTRACTOR's guarantee for the particular plant replaced. All replacements shall be plants of the same kind and size as specified originally. CONTRACTOR shall make all necessary repairs required because of plant replacements. Such repairs shall be done at no extra cost to OWNER. Plants shall be replaced, mulched, wrapped, fertilized, pruned, and restored to original condition at no extra cost to OWNER.

Plant names shall conform to those given in *Standardized Plant Names*, 1942 Edition, American Joint Committee on Horticultural Nomenclature. All plants shall be true to name and legibly tagged as to name and size. Federal or other governmental certificates of inspection shall accompany all shipments as required.

Plant materials, methods, etc. shall conform to the latest edition of ANSI Z60.1.

CONTRACTOR shall have investigated the sources of supply and shall be satisfied that CONTRACTOR can supply the listed plants in the size, variety and quality specified before submitting a Bid. Failure to do so will not relieve CONTRACTOR of the responsibility for furnishing and installing all plant materials in strict accordance with the Contract Documents.

All material shall be the highest quality. Plants shall have typical growth habit for their species. Plants shall be sound, healthy, vigorous, and free from insect pests, plant diseases, and injury. One-sided plants and plants taken from tightly planted nursery rows will be rejected.

All plants shall equal or exceed measurements specified, measured before pruning with branches in normal position. Height and spread refers to main body of plant and not from tip to tip of branches and roots. Trees shall have a well-defined central leader.

Soil excavated from plant pits that is similar in nature to topsoil and is determined to be suitable for planting soil shall be thoroughly mixed with one part of peat to five parts of existing soil. Very poor soils of clay, gumbo, gravel, hard-pan, or other soils injurious to plants shall not be used.

If quantity of soil excavated from planting pits is not adequate for planting, CONTRACTOR shall furnish imported planting soil consisting of partially decomposed vegetable matter of natural occurrence. Such soil shall be black, clean, low in content of mineral or woody material, mildly acidic, fertile and friable. This soil shall be mixed with one part of peat to five parts of soil. Peat shall be a domestic product consisting of partially decomposed vegetable matter of natural occurrence-black, clean, granulated, or shredded.

Fertilizer shall be equal to Milorganite (6-2-0), Louisville Green (5-3-0), or equal uniform in composition and free-flowing. Fertilizer which becomes caked or otherwise damaged making it unsuitable for use will not be accepted. Rate of application shall be as recommended by nursery.

Wood mulch shall be shredded hardwood bark of local origin, similar in physical composition to shredded mulches sold under the brand names of Montaho, Pay-Gro, or equal.

Mulches shall be a minimum of 4 inches thick.

Deciduous trees and shrubs shall be planted from November 1 to April 1. All trees and shrubs shall be planted so as to provide the maximum growing time allowable under the Contract Times. At the option and on full responsibility of CONTRACTOR, planting operations may be conducted under unseasonable conditions without additional compensation or change to warranty.

CONTRACTOR shall stake out on the ground the location of all plants before excavation is begun, and review layout with OWNER. Plants installed at incorrect locations shall be relocated by CONTRACTOR at no expense to OWNER.

CONTRACTOR shall excavate the plant pit, centered at the location stake, cylindrical in shape with vertical sides and flat or saucer-shaped bottom. Planting soil for backfilling shall be kept separate from excavated subsoil. Pit shall be large enough to provide at least 12 inches of planting soil backfill around and beneath the root system. Where surface or subsurface conditions prevent digging a plant pit to specified dimensions, obtain approval from landscape architect to modify location or pit dimensions.

The root ball shall be centered in the plant pit resting on 12 inches of planting soil well-tamped. The plant hole shall be backfilled with planting soil placed in layers around the root ball. Each layer shall be hand-tamped in place in a manner to avoid injury to roots and ball. When approximately two thirds of the plant hole has been backfilled, the hole shall be filled with water to allow the soil to settle around the roots. Top of root ball shall be 1 inch above surrounding grade. The cord or wire securing burlap at base of tree shall be cut, with the burlap folded back.

Just prior to inspection for acceptance, CONTRACTOR shall prune all plantings. The amount of pruning will be limited to the minimum necessary to remove dead or injured twigs and branches to compensate for loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit or shape of the plant.

CONTRACTOR shall promptly remove any soil, peat or similar material that has been brought onto paved areas by planting operations, keeping those areas clean at all times, and shall remove all debris resulting from planting operations from the site.

Replacement plantings shall match existing plant type, with minimum 4-year nursery growth.

SECTION 10–MISCELLANEOUS REQUIREMENTS

10.1 GRADE STAKES AND PROPERTY STAKES

CONTRACTOR shall furnish and place in position all items necessary to control the horizontal and vertical accuracy of the Work including lasers, batterboards, string lines, plummets and graduated poles.

Where lasers are used, CONTRACTOR shall check the Work against intermediate grade stakes. Prior to initial use of the laser, CONTRACTOR shall set up laser on ground surface and check line and gradient controls. Lasers not functioning properly shall be immediately removed.

If existing property stakes, not within the limits of the trench or street slope limits, are removed or damaged by CONTRACTOR, CONTRACTOR shall bear the cost of replacement. Replacement shall be made by a legal survey performed by a licensed Land Surveyor hired by OWNER. Cost for survey shall be deducted from the Contract Price.

10.2 TESTING PIPELINES

10.2.1 GENERAL

CONTRACTOR shall conduct testing on all new pipe lines as specified below.

Utility installations which fail to meet the test limits shall be repaired in a manner acceptable to ENGINEER. In general, defective pipe installations should be uncovered and relaid, with new pipe if necessary, to repair the defect. Under no circumstances shall defects be sealed from the interior of the pipe, and only where specifically allowed by ENGINEER, shall defects be sealed from the exterior of the pipe.

10.2.2 SANITARY SEWER LEAKAGE TESTING

All sanitary sewer gravity mains shall be tested for leakage after installation of laterals and placement of backfill. Leakage testing of thermoplastic sanitary sewer gravity mains shall be conducted in accordance with ASTM F1417. Testing of rigid sanitary sewer mains shall be in accordance with ASTM C828 for clay pipe and ASTM C1214 for concrete pipe. CONTRACTOR shall keep a record of all tests performed. These records shall show the individual lengths of main tested and test results.

Sewers 18 inches and larger may be tested for leakage by infiltration or exfiltration in lieu of vacuum testing. Concrete pipe shall be tested per ASTM C969 except as modified herein. If groundwater is 2 feet or more above the sewer, measurements will be taken to determine the rate of infiltration into the sewer. If groundwater is below 2 feet above the sewer, the stretch of sewer shall be plugged at its downstream end and water shall be placed inside the sewer to provide a minimum of 4 feet of head above the upstream end.

Measurements will then be taken to determine the rate of leakage out of the sewer. CONTRACTOR shall furnish all labor and materials necessary for making the tests. The allowable leakage shall be as indicated below for final acceptance.

At the conclusion of construction and before final acceptance of the Work, the downstream end of all sanitary sewer will be measured for infiltration. Allowable infiltration shall not exceed 100 gallons/inch of pipe diameter/mile/day for that portion of the Work under groundwater. If infiltration is exceeded, the leak or leaks shall be located and repaired.

CONTRACTOR shall prepare all pipeline for testing and shall furnish all equipment, materials, tools, and labor necessary for performance of the tests. Equipment for the low pressure air test of gravity mains shall be equal in all operational aspects to that as furnished by Cherne Industrial, Inc., or United Survey, Inc.

Air and leakage testing of storm sewers will not be required.

10.2.3 MANHOLE TESTING

If required on the Drawings or in the **SPECIAL PROVISIONS**, sanitary sewer manholes shall be vacuum tested in accordance with ASTM C1244. Pipes entering the manhole shall be plugged and the seal inflated in accordance with manufacturer's recommendations.

Vacuum testing of storm sewer and other manholes will not be required.

10.2.4 TELEVISED INSPECTION

Where specified in the **SPECIAL PROVISIONS**, a color televised survey of installed sanitary sewer shall be provided after air testing to confirm branch locations, verify cleanliness of sewer, and confirm presence or absence of sags or deviations in sewer alignment. Sewers shall be cleaned immediately prior to the survey. The survey shall conform to NASCO PACP standards.

Televised inspection of storm sewers will not be required.

10.2.5 DEFLECTION TESTING

All PVC pipe used for sanitary sewer shall be tested for vertical deflection. Maximum deflection after completion of backfilling shall be 5% of the inside pipe diameter. Testing shall not be started until trench backfill has been in place for 30 days. CONTRACTOR shall keep a record of all tests performed. These

records shall show the individual lengths of main tested and test results. Deflection shall be measured by pulling a mandrel with a vertical diameter equal to 95% of the pipe inside diameter through the line, after thoroughly flushing the lines to be tested. The testing device shall be controlled using cables at both the upstream and downstream manholes. The testing device must pass freely through the sewer without the use of unreasonable force on the control cables. Any line that will not pass the test cylinder will not be accepted until the faulty sections have been removed and replaced and the line retested.

Deflection testing of thermoplastic storm sewer shall be provided in accordance with the above requirements.

10.2.6 WATER MAIN DISINFECTION

CONTRACTOR shall furnish all water and other materials, equipment, and labor necessary to disinfect all new water mains and all existing water mains disturbed by construction. Sampling and testing shall conform to AWWA C651 and Section 4 of 401 KAR 8:150. CONTRACTOR shall coordinate and bear cost for necessary testing by a certified laboratory and shall submit the results to the Environmental and Public Protection Cabinet. Sampling and testing shall be scheduled to complete the Work within the Contract Times. A water main shall not be placed in service until satisfactory test results are obtained. Items of material for testing shall be furnished in the size and quantity necessary to properly complete the test. Interruption or delay of CONTRACTOR's Work progress caused by testing and sampling shall not be cause for extra payment under the Contract nor shall they be cause for extension of Contract Time.

10.2.7 WATER MAIN AND FORCE MAIN TESTING

CONTRACTOR shall conduct hydrostatic pressure tests and leakage tests of all joints in accordance with the requirements of AWWA C600 for iron pipe and AWWA C605 for PVC pipe. During performance of the hydrostatic pressure test, water main shall be subjected to a minimum pressure of at least 50% above normal working pressure with a minimum pressure 125 psi. Force main shall be tested to 200% of normal operating pressure in the main, but to no more than the pressure rating of the pipe. All air shall be removed from the main during testing. This shall be done by flushing, by installing corporations at high points, or by releasing air at valves at high points. Test pumping equipment used shall be centrifugal pumps or other pumping equipment that will not place shock pressures on the main. Power plunger pumps will not be permitted for use on closed pipe systems. Pumps shall be disconnected during test periods.

Prior to conducting the pressure and leakage test, CONTRACTOR shall backfill the trench for its full depth. All bends and special connections to the main shall be adequately blocked and tied prior to the test. Any damage caused to the main or its appurtenances during performance of these tests shall be corrected by CONTRACTOR at its expense.

CONTRACTOR shall keep a record of all tests performed. These records shall show the individual lengths of main tested and test results.

Where connections are made to existing mains, it shall be the responsibility of CONTRACTOR to provide the necessary hydrostatic tests on all new mains installed. This may necessitate, but is not limited to, the installation of temporary valves to isolate the new system from the existing system. All materials, Work, and equipment necessary for this Work shall be furnished by CONTRACTOR at its expense.

All testing of pipelines shall proceed concurrently with installation. CONTRACTOR is advised that it may be advantageous to conduct daily preliminary testing of its Work.

Water from disinfection testing shall not be discharged to a stream, creek, river, storm sewer tributary thereto, or to a navigable water without first neutralizing the chlorine residual in the water and complying with local, state, and federal laws thereto.

10.3 TRAFFIC CONTROL

CONTRACTOR shall conduct its Work to minimize disruption of traffic on the jobsite and on adjacent streets and alleys. Where construction is in an area having only one vehicular access, CONTRACTOR shall conduct its Work to avoid or minimize blockage of such access. Blocking of streets or providing detours shall only be done if allowed in the **SPECIAL PROVISIONS**. Safe access shall be provided at all times for local traffic when CONTRACTOR is not working. CONTRACTOR shall keep local police and fire departments informed as to traffic access status as the Work proceeds.

CONTRACTOR shall furnish and install all necessary flagmen, barricades, signs, warning lights, and appurtenances to provide for safe and convenient control of traffic throughout the Project site. Barricading, signing and flagging shall be accomplished in strict accordance with the Manual on Uniform Traffic Control Devices and the KYDOH Specifications.

10.4 EROSION CONTROL

Where land disturbance activities do not exceed one acre, CONTRACTOR shall maintain site conditions where erosion and pollution are controlled.

Unless otherwise specified in the **SPECIAL PROVISIONS**, CONTRACTOR shall, for land disturbance activities exceeding one acre, develop and implement a Storm Water Erosion and Pollution Control Plan in accordance with conditions of federal and state permits, local ordinances, Best Management Practices, and as required by the Notice of Intent (NOI).

The following certification shall be included in the Storm Water Erosion and Pollution Control Plan, which CONTRACTOR and all subcontractors shall sign:

"I certify under penalty of law that I understand the terms and conditions of the General Pollutant Discharge Elimination System (NPDES) Permit that authorizes the storm water discharges associated with industrial activities from the construction site and as may be detailed in the Contract Documents. I agree to indemnify and hold OWNER harmless from any claims, demands, suits, causes of action, settlements, fines, or judgments and the costs of litigation, including, but not limited to, reasonable attorney's fees and costs of investigation and arising from a condition, obligation or requirement assumed or to be performed by CONTRACTOR for storm water pollution and erosion control."

Where land disturbances exceed one acre, CONTRACTOR shall execute a Notice of Intent (NOI) and send to OWNER and the Kentucky Division of Water, KPDES Branch.

Such controls as identified in the Storm Water Erosion and Pollution Control Plan shall be installed prior to disturbing any soil on the site. CONTRACTOR shall construct, maintain, and remove the erosion and pollution controls in accordance with the plan.

CONTRACTOR shall provide a "qualified" inspector to inspect erosion control and pollution controls. Inspector shall have prior experience with erosion and pollution controls and have knowledge of installation and maintenance of erosion and pollution controls as described by the Best Management Practices. Inspector shall be identified in the erosion and pollution control plan. In accordance with the General Pollution Elimination Systems General Permit conditions, the Project site erosion control inspection shall be every seven days and after each 1/2 inch rainfall or greater. CONTRACTOR shall

maintain hard copies of the inspection report with Storm Water Erosion and Pollution Control Plan for the duration of the Project.

CONTRACTOR shall respond within 24 hours to all corrective measures noted on the inspection report to address pollution issues. CONTRACTOR shall submit to OWNER a written notice stating the times, dates and actions taken to rectify the defective pollution and erosion controls.

CONTRACTOR shall pay any fines or other fees resulting from failure of CONTRACTOR to comply with the permit requirements or failure to provide a permit.

CONTRACTOR shall submit a "Notice of Termination" (NOT) to KDOW at end of the Project.

10.5 PRECONSTRUCTION VIDEO

Prior to mobilization at the site, CONTRACTOR shall furnish to ENGINEER a high resolution color audio-video recording of all planned construction areas, including but not limited to streets, driveways, sidewalks, curbs, fencing, visible utilities, retaining structures, and adjacent building structures. The purpose of the video is to document existing conditions and to provide a fair measure of required restoration. Care should be taken to record all existing conditions that exhibit deterioration, imperfections, structural failures, or situations that would be considered substandard.

The video recording shall be performed by a professional firm specializing in audio-video work. The videos shall be high quality, color, and high resolution. The video shall be provided in a digitized format that is supported by Window Media Player. The videos shall be provided via DVD, thumb drive, or other media required by OWNER. Temporary lighting shall be provided as necessary to properly video areas where natural lighting is insufficient (indoors, shadows, etc.). The videos shall include an audio soundtrack, to provide the following information.

1. Detailed description of location being viewed referenced to Contract Drawings (i.e., station number, building designation, pipeline route, etc.).
2. Direction (N, S, E, W, looking up, looking down, etc.) of camera view.
3. Date, time, temperature, and environmental conditions at time of video.

Video recording shall not be performed during inclement weather or when the ground is covered partially or totally with snow, ice, leaves, etc.

As many videos as are necessary to satisfy the requirements of this section shall be prepared. The original videos shall be submitted to ENGINEER accompanied by a detailed log of the contents of each video. The log should include location descriptions to facilitate the quick location of information contained in the videos. The videos will be maintained by ENGINEER during construction and may be viewed at any time by CONTRACTOR upon request. Upon final acceptance, the videos will become permanent property of OWNER.

10.6 MISCELLANEOUS WORK

CONTRACTOR shall provide miscellaneous Work as specified in the **SPECIAL PROVISIONS**.

SECTION 11–MEASUREMENT AND PAYMENT

11.1 GENERAL

Payment for changes in quantities, as shown in the Bid and Contract, shall be made in accordance with the prices bid. No change of grade, alignment or location shall annul or impair the Contract made and entered into relative to said Work. Payment shall be made for the quantities of each Bid item as actually installed. If a price is not provided in the Bid for an item of Work, the Work shall be considered incidental and included in adjacent items of Work.

11.2 UTILITY CONSTRUCTION

Payment for utility construction including water main, storm sewer, sanitary sewer, and force main will be made as listed in the Bid for furnishing all materials, labor, and equipment for the complete installation of the sewers, mains, and appurtenances as shown and specified.

The prices bid shall include the pipe, excavation, dewatering, bedding, laying, jointing, backfilling, paving, restoration, testing, and maintenance of surface, and all other labor and material necessary for complete compliance with these Standard Specifications. Wye and tee branches shall be included in the prices bid for sewer main unless otherwise listed in the Bid proposal form. The cost of all special connections to existing mains and appurtenances shall be included in the prices bid. Unless otherwise shown on the Drawings or specified in the **SPECIAL PROVISIONS**, the prices bid for utility construction shall include the cost of backfilling with existing materials.

11.3 SERVICES, LATERALS, AND RISERS

Water services, standard sewer laterals, and modified sewer laterals, as listed in the Bid, will be paid for in addition to the prices bid for water main and sanitary sewer. The prices bid for services and laterals shall include the entire cost for all labor, tools, bends, couplings and incidentals to install the services and laterals beyond the tap or wye or tee branches as shown and specified. Lengths of services and laterals for payment will be measured along the centerline of the pipe from the center of the main to the end of service. The cost of tunneling under or removing and replacing existing sidewalk and curb and gutter or other existing improvements shall be included in the prices bid. The cost of connecting existing water services to new water services shall be considered incidental to the Work

Risers will be paid for in addition to the prices bid for sanitary sewer main. The prices bid for risers shall be for the installation of risers constructed of ductile iron complete in place as shown on Drawing 01-975-75A. If included in the Bid, lengths of risers for payment will be measured along the centerline of the riser from the center of the main to the top 90° bend. In the prices bid, CONTRACTOR shall include all labor, equipment, and material necessary to install and support the riser column and to also provide ductile iron pipe from the riser column to the end of the service. If not included in the Bid, risers shall be paid for the same as for sanitary sewer laterals above.

11.4 INLET LEADS

The prices bid for inlet leads shall include the entire cost of all labor, excavations, backfilling, and material necessary for installation of the pipe from the center of the sewer main to the inlet box. The costs of special pipe fittings necessary to make the connections at the sewer main and at the inlet box shall be included in the prices bid.

The depth of service laterals and inlet leads will vary. The prices bid shall be for pipe installed at depths as shown on the Drawings or as requested by ENGINEER.

11.5 MANHOLES

Where manholes are not included in other Bid items, they will be paid for according to the prices bid. The prices bid for manholes shall include the cost of all material, Work, excavation, and backfilling necessary for construction of manholes as shown on the Drawings. Special bedding or pipe adjacent to manholes to standard trench width shall be included in the manhole price. The prices bid shall include the furnishing and installation of casting, steps, adjusting rings, and eccentric cone or flat slab as shown on the Drawings.

Special manholes will be paid for as shown on the Drawings and as listed in the Bid.

11.6 DROP ENTRANCES

Drop entrances to manholes shall be furnished and installed as shown on the Drawings and as specified. No additional payment will be made for drop entrances to manholes. Drop entrances will vary in depth from a minimum of 2 feet to the maximum as indicated on the Drawings.

11.7 STORM SEWER INLETS

The prices bid for inlets shall include the entire cost of all materials, labor, excavation, and backfilling necessary for complete construction of the inlets as shown and as specified. The cost of inlet lead pipe will be paid for under a separate Bid item. The depth of inlet will vary from the minimum shown on Drawing 01-975-41A to the amount specified. The prices bid shall apply for all inlet depths as actually installed. The cost of concrete encasement at the sewer main, where necessary, shall be included in the prices bid for inlets.

11.8 ROCK EXCAVATION, UTILITIES

Rock excavation for utility trenches shall be paid at the price bid. Such price bid may either be per linear foot regardless of trench depth or on a cubic yard basis as measured in place.

Rock excavation shall include the cost of hauling and disposal of excavated rock and furnishing and placing backfill material and will be in addition to the prices bid for utility installations and appurtenances thereto.

11.9 SPECIAL BEDDING AND CONCRETE CRADLE

Where ENGINEER determines that unstable soils are present and are not CONTRACTOR's fault, payment for special bedding will be made. The price bid for special bedding shall include excavation for the bedding and furnishing and placing the bedding material.

The price bid for concrete cradle shall include forming, sheeting, excavation, and all materials for installation as shown on the Drawings. Measurement of concrete cradle will be made within the trench width for the depth as shown on the Drawings or requested by ENGINEER.

Special bedding and concrete cradle, where requested, will be paid for in addition to the prices bid for utility installations.

11.10 GRANULAR BACKFILL

The cost of granular backfill shall be included in the prices bid for utility installations and appurtenances where shown on the Drawings or specified. Where requested in the field by ENGINEER, payment will be made based on the prices bid measured in place following compaction. Costs shall include hauling away

and disposing of material replaced by the granular backfill. Volume allowed for payment on a unit price basis shall not exceed an average trench width of 8 feet for the depth of fill placed.

Cover material and material placed within the zone of the trench where restoration materials are to be placed, such as topsoil and base course, shall not be included in the quantity measured for hauled-in granular backfill.

11.11 TRENCH SHEETING

Payment will be made only for sheeting required on the Drawings or **SPECIAL PROVISIONS**. The prices bid shall include the entire cost of furnishing all materials and labor for installation of the sheeting.

11.12 DEWATERING

The cost of removal of ground water and surface water shall be included in the prices bid for utility and street construction. No separate payment will be made for dewatering.

11.13 TUNNELING, BORING, JACKING, OR BORING AND JACKING

Payment for placement of casing pipe and carrier pipe inside the casing pipe shall be for the limits as shown on the Drawings and as listed in the Bid. The prices bid shall include the cost for furnishing the casing and carrier pipes, equipment, and labor necessary for installation including jacking pits, sheeting, special Work to install the casing and carrier pipe, backfilling, and restoration of surface improvements. Placement of the carrier pipe inside the casing pipe, including blocking and filling of the annular space, shall also be included in the prices bid.

11.14 EROSION CONTROL

Erosion control shall be paid at the various prices bid, if listed individually, or shall be included in the price bid for erosion control. If not included in the Bid, erosion control shall be considered incidental and included in the price bid for adjacent Work.

11.15 BEDDING DIKE

Bedding dike shall be paid at the prices bid, if listed separately. If not included in the Bid, it shall be considered incidental and included in the price bid for adjacent Work.

11.16 AGGREGATE SLURRY (FLOWABLE) BACKFILL

Aggregate slurry (flowable) backfill shall be paid at the prices bid, if listed separately. If individual Bid items are not provided in the Bid, it shall be considered incidental and included in the price bid for adjacent Work.

11.17 CLEARING AND GRUBBING

Cost for clearing and grubbing as described shall be paid for according to the Bid items included in the Bid. If individual Bid items are not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

11.18 COMMON EXCAVATION

Common excavation shall be included in the price bid for the Work, if listed separately. If individual Bid items are not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

The cost for utility installations within areas where common excavation is to be performed shall not include the cost for common excavation required in this Contract for street construction.

If listed separately, the price bid shall include excavation of materials and placement and compaction of excavated materials, except topsoil, to subgrade elevations. For lump sum bids, CONTRACTOR shall be responsible to make its own computations for common excavation in compiling the price bid.

Saw cutting will be paid for according to the price bid, if listed separately. If individual Bid items are not provided, the cost of this Work shall be considered incidental.

11.19 ROCK EXCAVATION, STREETS

Rock excavation for grading of streets or for site work shall be paid at the price bid, and shall include the hauling and disposal of the excavated rock. Such price bid will be on a cubic yard basis as measured in place by cross sectioning the rock before and after its removal.

11.20 BORROW EXCAVATION

Cost for borrow excavation shall be paid for according to the items included in the Bid. If individual Bid items are not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

11.21 EXCAVATION BELOW SUBGRADE

Payment for excavation below subgrade will only be made if excavation below subgrade is reviewed by ENGINEER and only within the limits as requested. Excavation below subgrade shall be measured in place. The price bid for excavation below subgrade shall include all costs to excavate, remove, and dispose of undesirable material.

Cost for providing geotextile beneath excavation below subgrade shall be paid for in accordance with the price bid, if listed separately. If individual Bid items are not provided in the Bid, it shall be considered incidental and included in the price bid for adjacent Work.

11.22 GEOTEXTILES

Geotextile fabrics shall be paid at the prices bid, if listed separately. If individual Bid items are not provided in the Bid, they shall be considered incidental and included in the price bid for adjacent Work.

11.23 BASE COURSE

Payment for crushed aggregate base course shall be made at the price bid and shall include all labor, materials, and Work necessary for complete installation. Payment will be made based on weight tickets provided to ENGINEER within one week of delivery for each truckload of base course.

Fine grading shall be included in the price bid for fine grading, if listed separately. If a Bid price for fine grading is not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

Placement of base course for driveways, sidewalks, and outside the limits of a 1:1 slope from the bottom pavement or curb edge or top of shoulder edge shall not be eligible for payment unless the limits are extended on the typical section.

11.24 SALVAGED ASPHALT PAVEMENT

Cost for placement of salvaged asphalt pavement as base course shall be included in the price bid, if listed separately. This price shall include grading and compaction. Cost for salvaged asphalt milling shall include the cost of milling and transport. If a Bid price is not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

11.25 CONCRETE

The cost for removal of existing concrete pavement, curb and gutter, sidewalk, driveway, and pavement shall be paid for according to the price bid for these items. If a Bid price is not provided in the Bid, the cost for these removals shall be included in the price bid for adjacent utility and street construction Work.

The costs for meeting both cold and hot weather concrete requirements shall be included in the price bid for the Work, if listed separately. If a Bid price is not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

The cost for protecting newly placed concrete from damage will be considered incidental to the Work.

Concrete pavement shall be included in the price bid for the Work, if listed separately. If a Bid price is not provided in the Bid, the cost of this Work shall be considered incidental to adjacent utility and street construction Work.

11.26 CURB AND GUTTER

The prices bid for concrete curb and gutter, if listed separately, shall apply to both straight and curved curb and gutter (outside of median nose areas), to standard and reject curb and gutter, and to driveway sections at driveways and curb ramps (outside of median nose areas). Curb and gutter will be paid for through all inlets. The cost of base preparation, placing and finishing, jointing, tie bars, and utility markings, shall be included in the price bid for curb and gutter. The cost of curb and gutter placed in median nose areas shall be included in the price bid for median nose, if listed separately. If Bid prices are not provided in the Bid, the cost for these items shall be included in the cost for adjacent utility and street construction Work.

11.27 CONCRETE SIDEWALK AND DRIVEWAYS

Cost for new or replacement concrete sidewalk and driveway, if listed separately, shall be paid for according to the price bid. Price shall include grading, subgrade preparation, base material, placement, finish, and all other items necessary to complete the Work. If a Bid price is not provided in the Bid, the cost for these items shall be included in the price bid for adjacent utility and street construction Work.

11.28 ASPHALTIC CONCRETE PAVING

The cost for adjusting castings for new utility construction shall be considered incidental to the Work.

If existing castings are being replaced as part of the Work, the cost for adjusting the replacement castings shall be included in the price bid for the replacement castings.

Payment for adjusting new manhole castings from the finished intermediate course surface to finished grade and for adjusting existing castings to intermediate course and/or surface course grades shall be in accordance with the prices bid, if listed separately. If a Bid price is not provided in the Bid, the cost for these adjustments shall be included in the price bid for adjacent utility and street construction Work.

Providing and placing asphaltic tack coat material, if listed separately in the Bid shall include all labor, materials, and equipment necessary to provide the tack coat as specified herein. If not included in the Bid, it shall be considered incidental to the Work.

The price bid for new asphaltic concrete intermediate and surface course pavement, if listed separately, will be based on the price bid for the Work. Payment will only be made for the quantities where weight tickets for each truckload have been delivered to ENGINEER within one week of placement. Price bid shall include all materials, labor, and Work necessary for complete, in-place, asphaltic concrete pavement including fine grading and ramps. Asphaltic material will not be paid for as a separate item. The price bid for asphaltic pavement shall include CONTRACTOR's costs for labor, tools, and materials to cut, excavate, and match the new Work to the existing pavement. Where a unit price is not provided, the cost for paving shall be considered incidental to the Work.

11.29 PAVEMENT STRIPING

Pavement striping, if listed separately in the Bid, shall include all labor, materials, and equipment necessary to provide the markings as specified herein, including traffic control. If not included in the Bid, it shall be considered incidental and included in the price bid for adjacent Work.

11.30 SEEDING AND SODDING

Seeding and sodding (including topsoil), if listed separately, shall be paid for in accordance with the prices bid, which price shall be full compensation for preparing the earth bed including providing, grading, and rolling topsoil; furnishing and placing seed or sod, watering; and for all labor, equipment, tools, and incidentals necessary to complete the Work. Where prices are not provided, the cost for this Work shall be considered incidental to the Work and included in the costs for adjacent utility and street construction Work.

11.31 MISCELLANEOUS RESTORATION

Cost for miscellaneous restoration items shall be paid for according to the prices bid, if listed separately. Where prices are not provided in the Bid, the costs shall be included in the price bid for adjacent utility and street construction Work.

11.32 BOULDER WALLS

Boulder wall will be paid for at the price bid, which price shall be full compensation for furnishing and installing the stone, for selecting the stone, preparation of the foundation, including excavation, backfilling, disposing excess materials, for all labor, tools, and equipment, and transportation necessary to complete the Work. Payment shall include the stone wall face that is buried 12 inches.

11.33 CUT BLOCK MODULAR RETAINING WALLS

Modular retaining wall will be paid for at the price bid, which price shall be full compensation for furnishing and installing the wall; preparation of the foundation, including excavation, backfilling, and disposing excess materials; and for all labor, tools, equipment, and transportation necessary to complete the Work.

11.34 PLANTINGS

Plantings, if listed separately, shall be paid for in accordance with the prices bid. The price bid for plantings shall include all items as specified herein and as shown on the Drawings. Where unit prices are not provided for, they shall be included in the cost for adjacent utility and street construction Work.

11.35 DUST CONTROL

Unless, provided for in the Bid, dust control shall be considered incidental to the Work and included in adjacent or related items of Work.

11.36 PRECONSTRUCTION VIDEO

Preconstruction video shall be paid for in accordance with the price bid. The price bid shall include all items specified herein. Where unit prices are not provided in the Bid, a preconstruction video will not be required.

11.37 TRACER WIRE

Tracer wire shall be paid for in accordance with the price bid. The price bid shall include all items specified herein. Where unit prices are not provided for in the Bid, tracer wire will not be required.

11.38 SPECIAL ITEMS OF WORK, MATERIAL, AND EQUIPMENT

Payment for special items of Work, material, and equipment will be paid for as specified in the **SPECIAL PROVISIONS**.

11.39 MISCELLANEOUS WORK

Payment for miscellaneous Work will be paid for as specified in the **SPECIAL PROVISIONS**.

SECTION 12–SPECIAL PROVISIONS

The following modifies, expands, or clarifies the Standard Specifications for Utility and Street Construction. Reference is made in this Section 12 to the specific provision of the Standard Specifications being clarified, modified, or expanded. These **SPECIAL PROVISIONS** shall govern whenever there is conflict or discrepancy with the Standard Specifications and the KYDOH Specifications.

12.1 1.1 GENERAL

Work includes installation of new watermain of various size and material in existing and new easements. Customer service connections are included.

Drawings 01-975-42A, 01-975-64A, AND 01-975-65A, can be found at the end of these Standard Specifications and the other Drawings referred in Sections 1 through 11 are not applicable.

12.2 1.2 PIPE

The following pipe materials shall be used on the Project:

Pipe Application	Material
Water Main	PVC ASTM D2241-CL 250, SDR 17; PVC ASTM D2241-CL 200, SDR 21; HDPE CL-250, DR 9
Water Services	PVC SDR-PR Pipe, HDPE Tubing
Fittings for PVC and DI Pipe Used in Water Main or Force Main	Ductile or Cast Iron, Mechanical Joint

12.3 1.2.9 IRON PIPE AND FITTINGS

Minimum pressure class rating of ductile iron pipe shall be 250 psi. Iron pipe and fittings shall be American made and meet AIS requirements.

12.4 1.2.11 PVC PIPE (SDR-PR)

Standard dimension ratio PVC pressure rated pipe in sizes 2 inches to 3 inches may be used. Pipe shall comply with all other requirements of the Standard Specifications.

12.5 1.2.13 HIGH DENSITY POLYETHYLENE PRESSURE (HDPE) PIPE AND FITTINGS

For water services, HDPE pipe may be used in lieu of copper tubing. HDPE pipe shall comply with AWWA C901. Pipe material shall conform to PE 3408. The pipe shall be NSF approved and have a rated working pressure of 200 psi. Stainless steel inserts shall be required at compression joints.

12.6 1.2.14 PVC PRESSURE PIPE FITTINGS

PVC fittings may be provided in lieu of iron fittings in sizes 2 inches and smaller. PVC fittings shall have the same pressure rating of and be compatible with the main in which they are installed. Fittings shall conform to the following standards:

- a. AWWA C900, C905, and AWWA C907 for PVC Pipe (AWWA).
- b. ASTM D3139 for PVC Pipe (SDR-PR). Gasket shall comply with ASTM F477.

c. ASTM D2466 or ASTM D2467 for PVC Schedule Pipe.

12.7 1.2.17 COPPER WATER TUBING

For water services, HDPE piping may be use in lieu of copper tubing. HDPE pipe shall comply with AWWA C901. Pipe material shall conform to PE 3608. The pipe shall be NSF approved and have a rated working pressure of 200 psi. Stainless steel inserts shall be provided at compression joints.

12.8 1.2.18 SURFACE WATER CROSSINGS

Crossings shall be installed by a method chosen by CONTRACTOR subject to review by ENGINEER and approval by OWNER and KDOW. When installing pipe crossings, CONTRACTOR shall keep pipe full of water until the pipe is bedded and covered and then the trench is backfilled with well graded 3 inches minimum to 6 inches maximum stone to the bottom of the crossing profile. All Work shall be done with suitable equipment and erosion control measures to prevent bed disturbance or silt deposition. Excavation shall be made so as to provide relatively level bottom conditions and to have side slopes at the edge of the area from which material is removed of not more than one vertical to four horizontal.

See Division 01 for any permit requirements. All spoil material shall be disposed of at upland sites. CONTRACTOR shall give notice to OWNER and KDOW no less than 5 days before the Work is to begin.

12.9 1.3 VALVES

The following valves shall be used on the Project:

Valve Applications	Type
Shutoff Valves in Water Main ≤12 inches	Resilient Wedge Gate Valves

12.10 1.3.6 CORPORATION STOPS, CURB STOPS, AND TAPPING SADDLES

Corporations stops shall be Mueller H-15000 N (flare connections), H-15008 (compression connections), or equal. Tapping saddles are required at PVC main installations.

Curb stops shall be Mueller Mark II Oriseal with H-15204 (flair connections), H-15209 (compression connections), or equal. CONTRACTOR shall provide all necessary transition fittings to make connections to existing services on the customer side of the curb stop.

12.11 1.3.7 FIRE HYDRANTS

Fire hydrants are not required for the Project. Provide flush hydrants meeting the requirements of the Standard Specifications for fire hydrants except that the 4 1/2-inch nozzle is not to be provided.

12.12 1.3.8 VALVE BOXES

Valve boxes shall be two-piece sliding type as shown on the Drawings.

12.13 1.13 SPECIAL MATERIALS AND EQUIPMENT

RURAL WATER INSTALLATIONS

TRACER WIRE—PVC water main shall be provided with No. 12 gauge solid insulated copper tracer wire taped at 5-foot intervals. Wire shall be continuous between and terminate at valve boxes, manholes, and fire hydrants. Any splices shall be soldered and fitted with a Raco, or equal, insulated watertight boot.

AIR RELEASE VALVES—Automatic air release valves shall be installed at locations shown on the Drawings or as indicated below. Automatic air release valves shall be Val-Matic Model 25, APCO, or equal iron body with bronze or stainless steel internals with 1-inch screw connection. Air release valves shall be lever and pin operated, 150 psi working pressure with flanged top plate cover for ease of repair. Valve body shall contain drain and blowoff plugs.

PRESSURE REDUCING VALVES—Pressure reducing valves shall be furnished and installed where shown on the Drawings. These valves shall maintain a constant downstream pressure regardless of fluctuations in demand. They shall be hydraulically operated, diaphragm-actuated, glove or angle pattern valves. Each valve shall contain a resilient, synthetic rubber disc having a rectangular cross section, contained on three and one-half sides by a disc retainer and forming a tight seal against a single renewable seat. The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing valve from the line.

The pilot control shall be a direct acting, adjustable, spring-loaded, normally open, diaphragm valve designed to permit flow when controlled pressure is less than the spring setting.

The main valve shall be a Model 690-01ASB-SS Pressure Reducing Valve and the secondary valve shall be a Model 90-AS-SS Pressure Reducing Valve as manufactured by Cla-Val Co., Newport Beach, California 92663, or equal.

Valve shall reduce outgoing pressure to as noted on Drawings. Incoming pressure maximum high is noted on Drawings.

TAPPING SLEEVES AND VALVES—Tapping sleeves shall be Mueller or equal, stainless steel, 200 psi working pressure with 304 stainless steel nuts and bolts. Provide gaskets for full area of sleeve flanges. Tapping valves shall conform to requirements for gate valves except that one end shall be flanged and the other mechanical joint. Tapping valves shall be provided with oversized openings to permit use of full sized cutters.

WATER METERS AND BOXES—OWNER will provide Sensus SR2 meters for CONTRACTOR installation.

Meter boxes shall be Maclean Highline, or equal. They shall be made of PVC material, rectangular shape to fit meter, 1 1/2-feet deep, with plastic lids.

Provide Mueller H-14227N, or equal compression union for splicing copper.

METER SETTERS—Meter setters for services 1 inch or less shall be copper with plain stop, with appropriate riser. Setters shall be 5/8 inches by 3/4 inches by 7 inches with dual check valves and shall have a 1-inch FML by 1-inch CTS grip. Copper setters shall be Mueller Model 234B2404-2-N. Where pressure reducing valves are required setter shall accommodate their installation.

SERVICE SADDLES—Saddles for service connections to PVC pipe shall be Dresser Series 194, Ford Model S70 or S90 Series, Mueller, or equal made of bronze or stainless steel.

Saddles for cast iron sized pipe shall be Dresser Industries, Inc. Style 91 or 291, Smith-Blair, Inc. Style 311 or 313, Ford, Mueller, or equal with malleable or ductile iron bodies that extend at least

160 degrees around the circumference of the pipe. Clamps shall have neoprene gaskets cemented to the saddle bodies. Clamps with tap sizes 1 inch and smaller may be single strap design. Clamps with tap sizes larger than 1 inch shall be double strap design.

12.14 2.1 WATER MAIN AND FORCE MAIN DEPTH

The minimum depth for water main shall be 3 feet.

12.15 3.1 GENERAL EXCAVATION

The waterline route has been chosen to minimize tree removal. Tree removal of all sizes is included in the Contract price bid.

12.16 3.5 ROCK EXCAVATION, UTILITIES

Blasted rock may be used as backfill from 1 foot above the top of the pipe to 1 foot below finished grade as long as all rock material is less than 8 inches in its greatest dimension.

12.17 3.10 TUNNELING, BORING, JACKING, OR BORING AND JACKING

Annular space shall not be filled, only casing spacers will be used.

Boring and the Railroad shall conform to all requirements of Norfolk Southern's NSCE-8 Specifications.

12.18 3.11 HORIZONTAL DIRECTIONAL DRILLING

Where pipe sizes are shown on the Drawings, they refer to the nominal pipe size. Pipe outside diameter shall conform to DIPS. Wall thickness provided shall be sufficient to provide a safe pull strength for the installation. Pipe shall have a maximum dimension ratio of SDR 9 with lower dimension ratio pipe provided as needed for the safe pull strength required. Provide information to OWNER on pipe selected.

The HDPE pipe shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, and other defects. All HDPE pipe shall be cut, joined, and installed in accordance with the manufacturer's recommendations. Joining, laying, and pulling of HDPE pipe shall be accomplished by personnel experienced in working with HDPE pipe systems.

All HDPE pipe shall be joined to itself by the heat fusion process which produces a homogeneous seal with leak-tight joints. Tie-ins between sections of HDPE pipe shall be made by the butt fusion procedure outlined in ASTM F2620. A record of certificate of training for the fusion operator must be provided that documents training to the fundamentals of ASTM F2620. Considerations should be given to and provisions made for adverse weather conditions, such as temperatures below freezing, precipitation, or wind, which are subject to the review and approval by the OWNER.

The pipe butt fusion machine shall be a self-contained hydraulic fusion machine capable of butt fusing HDPE pipe. The carriage must be removable from the chassis for in-ditch use. The machine must be compatible with an electronic data recording device. Accessories will include all butt fusion inserts for the specified range of pipe sizes, a pyrometer kit for checking the surface temperature for the heater, extension cord (25 feet minimum), and hydraulic extension hoses (minimum of four).

In areas where there may be insufficient space to lay out the entire length of fused pipe to be pulled-back, CONTRACTOR shall utilize continuous HDPE pipe fusion equipment such as a PolyHorse or other means in order to fuse the length of pipe necessary for the installation. CONTRACTOR shall be

responsible for securing and obtaining easements from adjacent property owners if necessary, for staging and/or fusing of the pipe at no additional cost to the OWNER.

High density polyethylene pipe shall be installed in strict accordance with the manufacturer's recommendations and these Specifications. CONTRACTOR shall have the manufacturer furnish technical assistance, installation instruction and jointing supervision required so that the pipe is properly installed. CONTRACTOR shall furnish the services of a technical representative of the manufacturer to supervise the Work. Upon satisfactory completion of the Work, CONTRACTOR shall furnish ENGINEER a written statement from the manufacturer's technical representative certifying that he has witnessed the Work and approved the techniques used and the results obtained by CONTRACTOR. The manufacturer's technical representative shall have had previous experience with similar work, and be fully qualified to supervise and demonstrate proper procedures for jointing and laying the high density polyethylene pipe.

CONTRACTOR shall restrain pipe, components, and test equipment as required so that testing can be accomplished in a safe manner, including protection of personnel, equipment, and public in the event of a failure during testing. Pressure testing shall be conducted in accordance with requirements and recommendations of ASTM F2164 and AWWA Manual of Practice M55 Chapter 9. The section of pipe to be tested shall be filled with potable water. While the system is being filled with water, air shall be carefully and completely exhausted. If permanent air vents are not located at all high points, the CONTRACTOR shall install fittings and valves at such points so the air can be expelled as the pipe system is slowly filled with water.

The test procedure for HDPE pipe consists of two steps: 1) the initial expansion phase and 2) the test phase. The test pressure shall be 1.5 times the operating pressure at the lowest point in the system. During the initial expansion phase, sufficient make-up water shall be added hourly for 3 hours to return the carrier pipe to the determined test pressure. During the test phase, the test pressure is reduced by 10 psi and monitored for at least one hour (3 hours maximum). If the test pressure remains steady (within 5% of the target value), no leakage is indicated. Under no circumstance shall the total time under test exceed eight (8) hours. If the test is not completed, depressurize the test section and permit the system to relax for eight (8) hours prior to the next testing sequence. If the test section fails this test, the CONTRACTOR shall repair or replace all defective materials and/or workmanship at no additional cost to the OWNER.

12.19 4.3 BEDDING AND COVER

Clean native material, free of rock and debris, may be utilized for pipe bedding and backfill to 12 inches above the pipe. If clean native material is not available, size 8 or 9 stone shall be used.

12.20 9.1 RESTORATION AND SITE WORK—SCOPE

There is no local water available. CONTRACTOR shall provide water needed via tanker trucks or other similar means.

12.21 9.5 PLANTINGS

CONTRACTOR shall inspect landscaping before starting major portions of the Work, make a list of plantings to be removed during the Work, provide the list to OWNER for review and approval, and replace plantings in-kind upon completion of the utility or street construction.

12.22 10.3 TRAFFIC CONTROL

CONTRACTOR shall comply with the requirements of Section 01 57 00.

12.23 11.2 UTILITY CONSTRUCTION

Prices bid for stream and roadway crossing to include backfill materials per details and Drawings.

12.24 11.8 ROCK EXCAVATION, UTILITIES

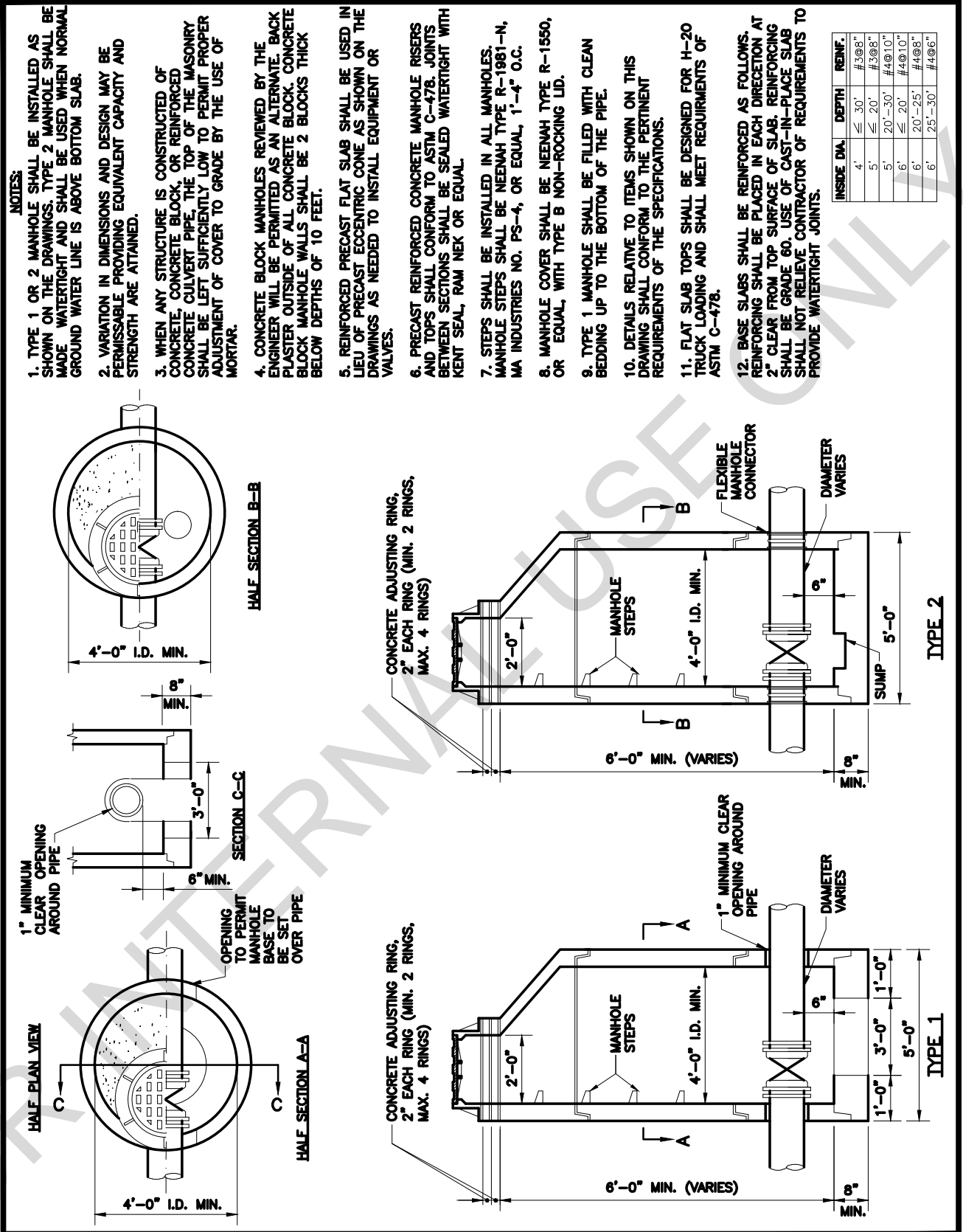
All excavation is unclassified. Cost associated with rock excavation shall be included in the Unit Price Bid for pipe installation. No extra payment will be made for rock excavation.

END DIVISION 50

FOR INTERNAL USE ONLY

FOR INTERNAL USE ONLY

DRAWINGS



**WATER MAIN
VALVE MANHOLES**

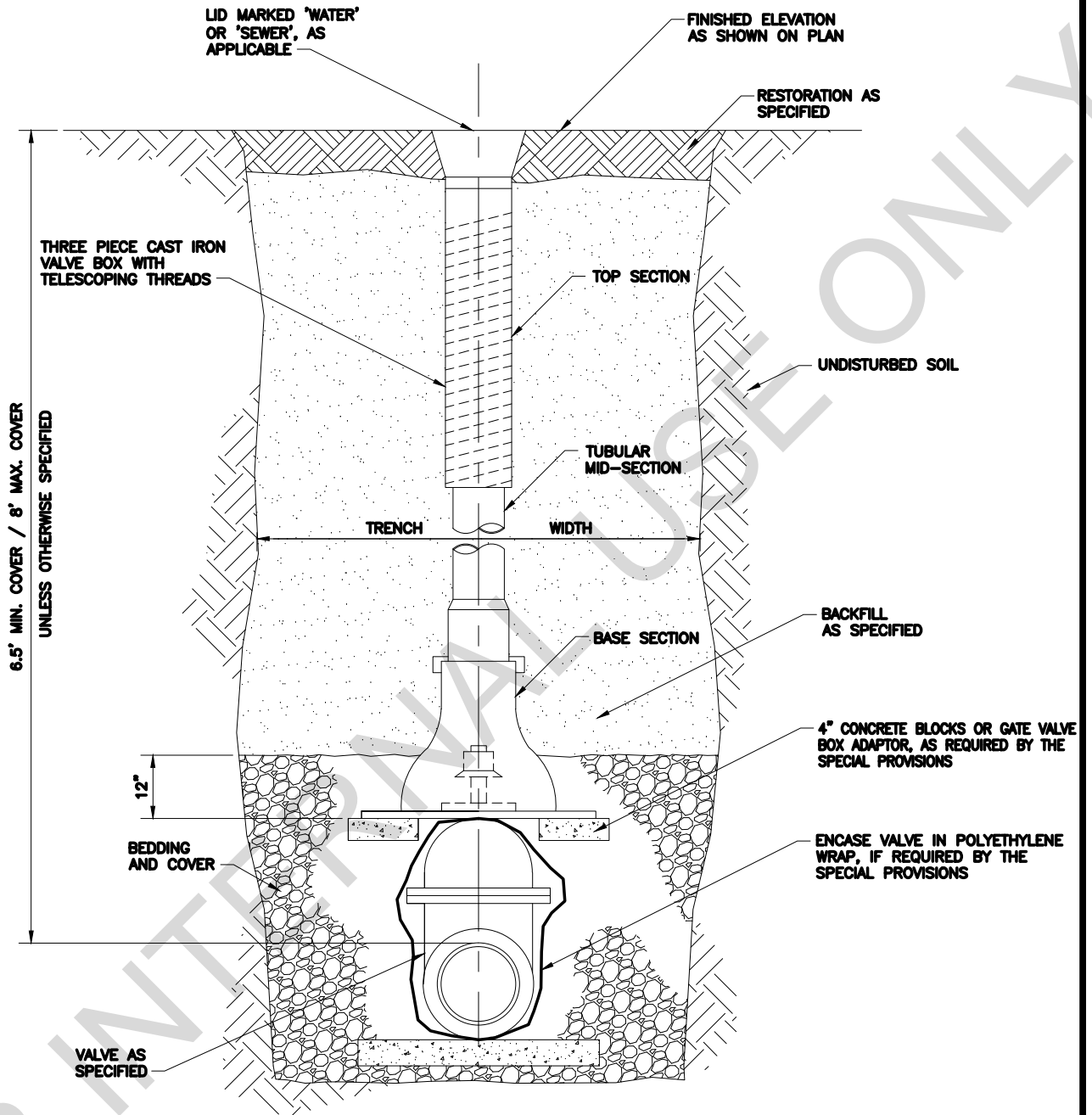
STANDARD DETAIL



01-975-42A

OCTOBER 2011

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STANDARD BURIED GATE VALVE BOX SETTING

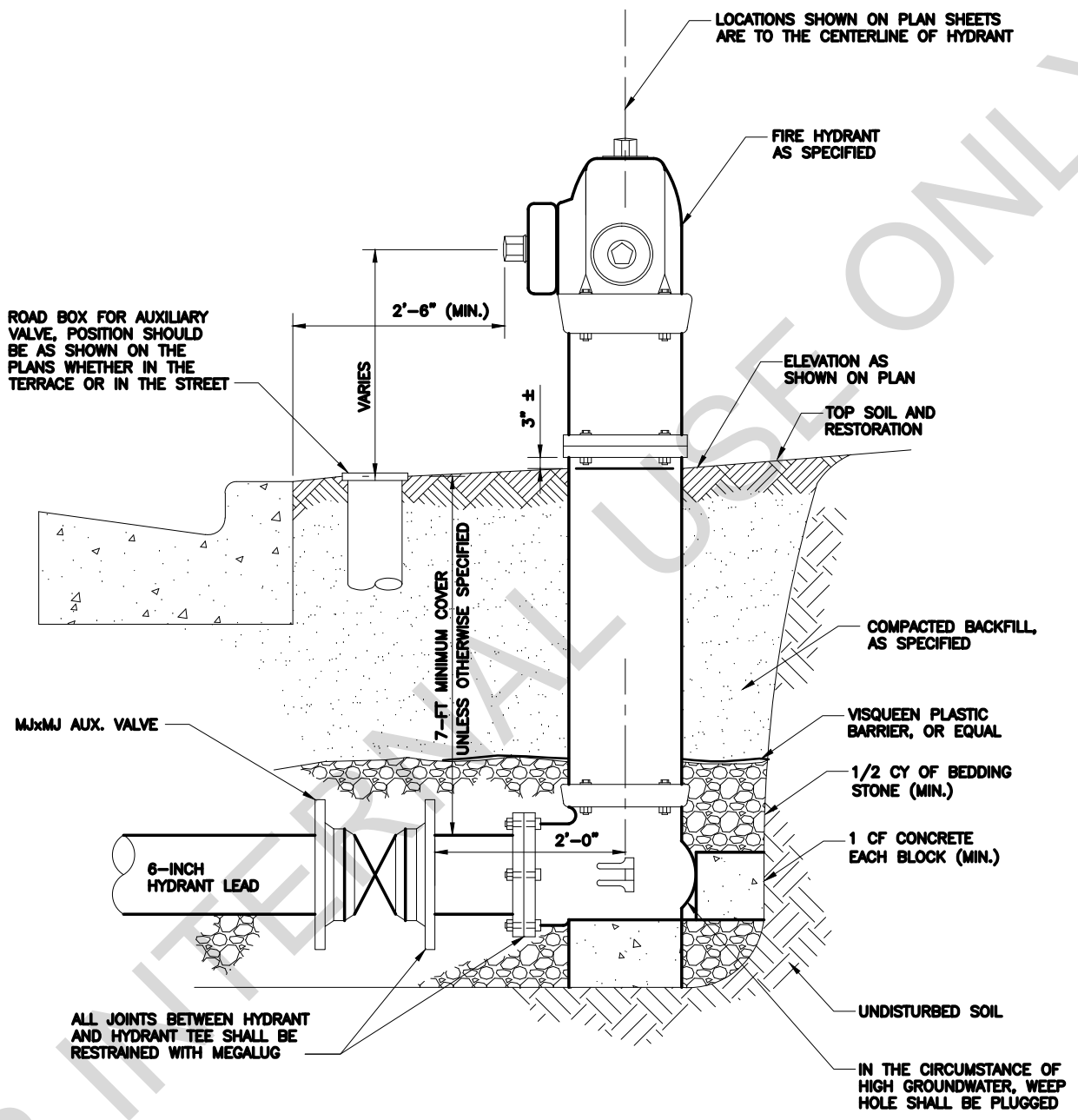
STANDARD DETAIL



01-975-64A

OCTOBER 2011

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HYDRANT INSTALLATION

STANDARD DETAIL



01-975-65A

OCTOBER 2011

For more location information
please visit www.strand.com

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Cincinnati, Ohio | 513.861.5600

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Joliet, Illinois | 815.744.4200

Lexington, Kentucky | 859.225.8500

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