

Specifications & Contract Documents

prepared for the

Mortons Gap Water Works



for the proposed

WATER SYSTEM REHABILITATION & UPGRADE PROJECT

CONTRACT 3 - Miscellaneous System Upgrades & Line Extensions

prepared by

MCGHEE ENGINEERING, INC.

Guthrie, Kentucky

March 2021

Specifications and Contract Documents
Water System Rehabilitation & Upgrade Project
Contract 3 – Miscellaneous System Upgrades & Extensions

prepared for the

**Morton
Gap
Water
Works**



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3/8/21

City of Mortons Gap Water Works

WATER SYSTEM REHABILITATION & UPGRADE PROJECT Contract No. 3 – Miscellaneous System Upgrades & Line Extensions CONTRACT DOCUMENTS

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City of Mortons Gap Water Works

WATER SYSTEM REHABILITATION & UPGRADE PROJECT Contract No. 3 – Miscellaneous System Upgrades & Line Extensions CONTRACT DOCUMENTS

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- 2 Kentucky Division of Water Plan & Spec Approval
- 3 Miscellaneous Project Permits (Army Corp, KDOW, KYTC, County, USF&W, etc)

Contract Drawings

Contract Drawings consist of 15 sheets bound separately from this document

ADVERTISEMENT FOR BIDS

City of Mortons Gap
P.O. Box 367 - 131 Cross Street
Mortons Gap, KY 42440

**RE: Water System Rehabilitation & Upgrade Project
Contract 3 – Miscellaneous System Upgrades & Line Extensions**

The **City of Mortons Gap** will receive separate, sealed Proposals for their **Water System Rehabilitation & Upgrade Project: Contract 3 – Miscellaneous System Upgrades & Line Extensions** until **10:00 a.m. local time, Thursday, May 27, 2021** at the Mortons Gap City Hall, 131 Cross Street, P.O. Box 367, Mortons Gap, Kentucky, 42440, at which time they will be publicly opened and read aloud.

The contract involves the replacement of various sized waterlines, extension of new 3” waterlines to serve unserved rural residences, miscellaneous valve additions, various hydrant replacements, and the addition of a new SCADA system; all in the Mortons Gap Water System (Hopkins County). 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 for the Bidding Documents is: McGhee Engineering, Inc., at P.O. Box 267, 202 South Ewing Street, Guthrie, Kentucky 42234 or by calling (270) 483-9985. Perspective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of 8:30-4:30 pm, and may obtain copies of the Bidding Documents from the Issuing Office as described below. Plans must be ordered by visiting www.mcgheeengineering.com and clicking “**Bid Opportunities**”. Plans will be sold with an option of Digital only OR Printed Set w/ Digital copy. Bids will be accepted only from registered contractors holding approved bid forms provided by the Issuing Office. Plan holders may be viewed at www.mcgheeengineering.com.

A **Pre-bid Conference** will be held at **3:00 P.M. local time, on Monday, May 17, 2021**, at the **Mortons Gap City Hall**, 131 Cross Street, Mortons Gap, KY 42440. Bidders are encouraged to attend and participate in the conference.

All bidders shall submit with their bid an acceptable bid bond or a certified check in the amount of five percent (5%) of the bid, payable to the Owner. The Owner reserves the right to waive any informalities or to reject any and all bids. No bidder may withdraw their bid after the date of the bid opening. The award of this project will be to the lowest, responsive, responsible bidder. The Bidder awarded the contract shall substantially complete this project within **120** calendar days. Liquidated damages will be assessed at **\$500** per calendar day. This project is funded with funds provided by Community Development Block Grant program plus the Kentucky Drinking Water State Revolving Fund (SRF) with federal funds provided by the Environmental Protection Agency. SRF requirements and provisions must be met by the Bidder and all subcontractors. Bidders must comply with Title VI of the Civil Rights Act of 1964, the Anti-Kickback Act, and the Contract Work Hours Standard Act. Bidders must comply with the President's Executive Order No. 11246 as amended, which prohibits discrimination in employment regarding race, creed, color, sex or national origin. This project will be in compliance with Executive Order 11246 (Equal Employment Opportunity) as amended. Contractor/Subcontractor will comply with 41 CFR 60-4, in regard to affirmative action, to insure equal opportunity to females and minorities and will apply the time tables and goals set forth in 41 CFR 60-4. Bidder will make positive efforts to use small, minority, women owned and disadvantaged businesses. Procurement will be subject to DOW Procurement Guidance including the Davis-Bacon Act.

Preparation of Bid for CDBG Funded Project:

Each bid must be submitted on the prescribed form and accompanied by Certification of Bidder Regarding Equal Employment Opportunity, Form 950.1; Certification of Bidder (Contractor) Concerning Labor Standards and Prevailing Wage Requirements, Form 1421; & Certification of Bidder Regarding Section 3 and Segregated Facilities. All blank spaces for bid prices must be filled in, by ink or typewritten, in both words and figures, and the foregoing Certifications must be fully completed and executed when submitted. Attention of bidders is particularly called to the requirements as to conditions of employment to be observed and Davis/Bacon Act prevailing minimum wages to be paid under contract, Section 3, Segregated Facility, Section 109, and E.O 11246 and Title VI. Minority bidders are encouraged to bid. Owner reserves the right to waive any informalities or to reject any or all bids.

Published by the authority of the City of Mortons Gap
Chris Phelps, Mayor

Dated: May 3, 2021

INSTRUCTIONS TO BIDDERS

A. These Instructions to Bidders establish requirements for Bidding and Award of Contract.

B. Table of Articles

Article 1 – Defined Terms

Article 2 – Copies of Bidding Documents

Article 3 – Qualifications of Bidders

Article 4 – Site and Other Areas; Existing Site Conditions; Examination of Site; Owner’s Safety Program;
Other Work at the Site

Article 5 – Bidder’s Representations

Article 6 – Pre-Bid Conference

Article 7 – Interpretations and Addenda

Article 8 – Bid Security

Article 9 – Contract Times

Article 10 – Liquidated Damages

Article 11 – Substitute and “Or-Equal” Items

Article 12 – Subcontractors, Suppliers, and Others

Article 13 – Preparation of Bid

Article 14 – Basis of Bid

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Article 16 – Modification and Withdrawal of Bid

Article 17 – Opening of Bids

Article 18 – Bids to Remain Subject to Acceptance

Article 19 – Evaluation of Bids and Award of Contract

Article 20 – Bonds and Insurance

Article 21 – Signing of Agreement

Article 22 – Retainage

Article 23 – Licenses, Fees & Taxes

Article 24 – Wage Rate Determination

Article 25 – Other Bid Requirements

Article 26 – Laws, Ordinances & Regulations

Article 27 – Insurance

Article 28 – Safety Standards & Accident Prevention

ARTICLE 1- DEFINED TERMS

Other terms used in the bidding documents and not defined elsewhere have the following meanings which are applicable to both the singular and plural thereof.

1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and the Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.

- A. Bidder - The individual or entity who submits a Bid directly to OWNER.
- B. Issuing Office - The office from which the Bidding Documents are to be issued.
- C. Successful Bidder - The lowest responsible Bidder submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.

2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assume 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 confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within **10** 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."

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.

4.05 *Other Work at the Site*

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

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work,
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the

Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;

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

ARTICLE 6 – PRE-BID CONFERENCE

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

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

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

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents. Addenda will be mailed no later than **three days** prior to the day set for receiving Bids. Failure of any Bidder to receive any such Addendum or interpretation shall not relieve such Bidder from any obligations under the Bid as submitted. All Addenda so issued shall become part of the Contract Documents.

7.03 Addenda may also be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

7.04 Receipt of all addenda must be acknowledged in space provided in the Bid.

ARTICLE 8 - BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of **five percent (5%)** of the Bidder's maximum Bid price and in the form of a certified check or a Bid Bond (EJCDC No. C-430, 2013 Edition) issued by a surety meeting the requirements of paragraphs 6.01 and 6.02 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 10 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 91 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

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

ARTICLE 10 - LIQUIDATED DAMAGES

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

ARTICLE 11 - SUBSTITUTE OR "OR-EQUAL" ITEMS

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

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 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 A list of subcontractors, suppliers, individuals, or entities shall be submitted along with the Bid at the Bid Opening to the OWNER.

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(s) in excess of the limits stated in SC 7.06.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

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

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown. The corporate seal shall be affixed and attested by the secretary or an assistant secretary.

13.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.

13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown below the signature.

13.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.

13.06 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The joint venture's address for receiving notices shall be shown.

13.07 All names shall be typed or printed in ink below the signatures.

13.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the number and dates of which must be filled in on the Bid form.

13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

13.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 - BASIS OF BID; COMPARISON OF BIDS

14.01 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.

14.02 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.

14.03 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.

ARTICLE 15 - SUBMITTAL OF BID

15.01 Bid Form is to be completed and submitted with all the attachments as required.

15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the location of the bid opening, as listed in the Advertisement.

15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BIDS

16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the

Bidder.

16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.

16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

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

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

18.01 All Bids will remain subject to acceptance for a period of **90 days**, 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 & 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 responsive Bid perceived by the Owner as offering the greatest advantage to the Owner.

19.03 Evaluation of Bids

- A. In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternatives, 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(s) 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 The 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 of the state of the "nonresident bidder." If the state of "nonresident bidder" provides no specific preference, then "resident" and "nonresident bidders" are to be treated the same when evaluating Bids.

19.07 If a Contract is to be awarded, OWNER will give the successful Bidder a Notice of Award within 90 days after the time set for opening Bids. **Note that the OWNER reserves the right to award only a portion of the work, at the stated unit prices, due to the possible limited funds available for the project.**

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 insurances. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by the required performance and payment bonds and insurances.

20.02 All bonds required by the project shall be payable to the OWNER in an amount of one hundred percent of the Contractor's maximum Base Bid price.

ARTICLE 21 - SIGNING OF AGREEMENT

21.01 When the OWNER gives a Notice of Award to the Successful Bidder, it will be accompanied by a list of items and information required of the Successful Bidder for evaluation by the OWNER and funding agency, if applicable. Within **10** days thereafter, the successful Bidder shall deliver the full number of original copies of the items listed and the Notice must be acknowledged by the Successful Bidder within **10** days thereafter. After receipt of an acknowledged Notice of Award, a pre-construction meeting will be scheduled at which time the OWNER and Successful Bidder will execute the required number of Agreements and Notice to Proceed. After certification by the Local Counsel and any other required parties, the OWNER shall deliver one fully signed counterpart to the Successful Bidder along with a complete set of Drawings with appropriate identification. OWNER will furnish the Contractor up to three (3) sets of conforming Contract Documents, Technical Specifications and Plans free of charge. Additional sets may be obtained from the Engineer at commercial reproduction rates. The successful bidder shall commence work within ten (10) calendar days after receipt of written notice to proceed and shall progress therewith so that the work shall be completed in accordance with the terms of the Contract Documents within the time allowed after the date of the commencement of contract time.

21.02 This Contract is expected to be funded in part with funds provided by the Kentucky Drinking Water State Revolving Fund (SRF) as administered by the Kentucky Infrastructure Authority (KIA) and the Community Development Block Grant (CDBG). SRF & CDBG requirements and provisions must be met by the Bidder and all subcontractors.

21.03 Concurrence by KIA in the award of the Contract is required before the Contract is effective.

21.04 This procurement will be subject to Division of Water Procurement Guidance including the Davis-Bacon Act.

ARTICLE 22 - RETAINAGE

22.01 Prior to Substantial Completion, OWNER will retain an amount equal to 5% of each progress payment application. Amounts previously retained shall not be paid to the CONTRACTOR until substantial completion of the Work. In no event shall the total Retainage be more than 5% of the value of the work satisfactorily completed.

22.02 Retainage shall be applicable to the Total Value of Work and Stored Materials less the Value of In-place OWNER Purchased Materials.

ARTICLE 23 – LICENSES, FEES, AND TAXES

23.01 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.

23.02 Successful Bidder must comply with any City ordinances relating to Occupational License Fees, Business Licenses, payroll, and net profits taxes and any other ordinances which may apply to the project. Refer to the Supplementary Conditions SC-6.10 for additional information.

23.03 Successful Bidder must provide proof of having all such licenses or fees at or before the signing of the Contract.

ARTICLE 24 - WAGE RATE DETERMINATION

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

24.02 Federal Davis-Bacon wage rates do apply to this contract, and a copy of that determination has also been inserted as a part of the Bidding Documents. Bidders shall inspect the wage rate determination and shall incorporate its requirements into their Bid. **The awarded contractor shall be subject to employee interviews and submit payroll reports, at a sufficient interval, to demonstrate adherence to the wage rate requirements.**

ARTICLE 25 – OTHER BID REQUIREMENTS

25.01 Bidder shall complete the following documents attached to the Bid:

Statement of Experience

Certification of Bidder Regarding Equal Employment Opportunity (*CDBG – Form 950.1*)

Certification of Bidder (Contractor) Concerning Labor Standards & Prevailing Wage Requirements (*CDBG – Form 1421*)

Certification of Bidder Regarding Section 3 & Segregated Facilities (*CDBG*)

ARTICLE 26 – LAWS, ORDINANCES, AND REGULATIONS

26.01 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.

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

26.03 Bidders must comply with the President's Executive Order No. 11246 as amended, which prohibits discrimination in employment regarding race, creed, color, sex or national origin.

26.04 This project will be in compliance with Executive Order 11246 (Equal Employment Opportunity) as amended.

26.05 The Contractor/Subcontractor will comply with 41CFR 60-4, in regard to affirmative action, to insure equal opportunity to females and minorities and will apply the time tables and goals set forth in 41 CFR 60-4.

26.06 Bidder will make positive efforts to use small, minority, women owned and disadvantaged businesses.

26.07 Bidder/Owner will comply to provisions for timely periodic payments and for limiting retainage (40 CFR 31.36).

ARTICLE 27 – INSURANCE

27.01 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 28 – SAFETY STANDARDS AND ACCIDENT PREVENTION:

28.01 With respect to all work performed under this contract, the contractor shall:

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

BID BOND

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

BIDDER *(Name and Address):*

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

OWNER *(Name and Address):*

**City of Mortons Gap
102 South Main Street
Mortons Gap, Kentucky 42440**

BID

Bid Due Date:

Description *(Project Name and Include Location):*

BOND

Bond Number:

Date *(Not earlier than Bid due date):*

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

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

BIDDER

SURETY

Bidder's Name and Corporate Seal (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

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint ventures, if necessary.

PENAL SUM FORM

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 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 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.

BID FORM

Project Identification: City of Mortons Gap
Water System Rehabilitation & Upgrade Project

Contract Identification: Contract 3 – Miscellaneous System Upgrades & Line Extensions

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is Submitted to: City of Mortons Gap
PO Box 367
Mortons Gap, Kentucky 42440

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

ARTICLE 2 – BIDDER'S ACKNOWLEDGMENTS

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

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

Addendum No. _____ Dated _____
Addendum No. _____ Dated _____
Addendum No. _____ Dated _____
Addendum No. _____ Dated _____

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, performance of the Work.

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

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

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

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

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

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

ARTICLE 5 – BASIS OF BID

5.01 Bidder will compete the Work in accordance with the Contract Documents for the following prices:

Section A: Primary Line Replacements (Noffsinger Ln, S. Main Street, Elm Street & Church to Shop St.)					
Item No.	Item	Quantity	Units	Unit Price	Total Price
A001	6-inch PVC SDR 21 Class 200 water line, in place & ready for use, including testing clean up. {Note pay limits per Spec 02-500, Section 2.0}	230	LF	\$ _____	\$ _____
A002	6-inch DIP Class 350 water line, in place & ready for use, including testing clean up. {Note pay limits per Spec 02-500, Section 2.0}	30	LF	\$ _____	\$ _____
A003	3-inch PVC SDR 21 Class 200 water line, in place & ready for use, including testing clean up. {Note pay limits per Spec 02-500, Section 2.0}	1,607	LF	\$ _____	\$ _____
A004	Final Cleanup of affected pipeline route (<u>Exc. Bores & paved areas</u>) in accordance with Spec 02-950, Sect. 4.0 {Note minimum unit price stipulation.}	1,786	LF	\$ _____ { \$4.00 Minimum }	\$ _____
A005	Shallow Ditch Crossing, in place, completed & ready for use.	30	LF	\$ _____	\$ _____
A006	Open Cut, Cased Road Crossing, 10" casing (excluding 6" carrier) in place, complete & ready for use.	25	LF	\$ _____	\$ _____
A007	Uncased Driveway Bore, all sizes, in place, complete & ready for use.	14	LF	\$ _____	\$ _____
A008	Pavement Replacement (w/ <u>Concrete</u>) & Stone Backfill of affected waterline & appurtenances' area, in place, complete & ready for use.	42	LF	\$ _____	\$ _____
A009	8"x3" tapping sleeve, valve, box, applicable fittings, all in place , complete and ready for use.	1	EA	\$ _____	\$ _____
A010	6"x6" tapping sleeve, valve, box, applicable fittings, all in place , complete and ready for use.	2	EA	\$ _____	\$ _____
A011	6"x3" tapping sleeve, valve, box, applicable fittings, all in place , complete and ready for use.	1	EA	\$ _____	\$ _____
A012	Remove appurtenance &/or connect to existing waterline or gate valve w/ applicable fittings, temp. cap, in place, complete & ready to use	1	EA	\$ _____	\$ _____
A013	Remove Existing Flush Hydrant, cap pipe, & Deliver usable parts to Owner; complete & Ready for use.	2	EA	\$ _____	\$ _____
A014	Small Post Hydrant with 3" Gate Valve, for new waterline, in place, complete and ready for use.	3	EA	\$ _____	\$ _____
A015	Plug & Cap existing 6-inch waterline at project completion, including thrust block & fittings, in place, complete & ready for use	2	EA	\$ _____	\$ _____

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A016	Plug & Cap existing 2-inch or smaller waterline at project completion, including thrust block & fittings, in place, complete & ready for use	3	EA	\$ _____	\$ _____
A017	Reconnect existing near side meter with new ¾" service line; in place, complete and ready for use	10	EA	\$ _____	\$ _____
A018	Reconnect existing far side meter with new ¾" service line from main to meter, encased under road; in place, complete & ready for use	2	EA	\$ _____	\$ _____

Sub-total of Section A Bid Items

\$ _____

Section B: Line Modifications & Improvements (White City Road Creek X-ing & Hotel/Truck Stop Feed)					
B001	3-inch PVC SDR 21 Class 200 service line, in place & ready for use, including testing clean up. {Note pay limits per Spec 02-500, Section 2.0}	680	LF	\$ _____	\$ _____
B002	Final Cleanup of affected pipeline routes (Exc. Bores & paved areas) in accordance with Spec 02-950, Sect. 4.0 {Note minimum unit price stipulation.}	770	LF	\$ _____ { \$2.00 Minimum }	\$ _____
B003	New Meter service for dedicated Hotel Service, including tap, 2" meter and large meter box, near side, in place, complete & ready for use.	1	EA	\$ _____	\$ _____
B004	Re-Connection to existing commercial service line (Hotel & Truck Stop; all sizes) by a licensed plumber .	2	EA	\$ _____	\$ _____
B005	6-inch PVC SDR 21 Certa-Lok Yelomine waterline, in place, & ready for use, including testing and clean up. {Note referenced pay limits}	90	LF	\$ _____	\$ _____
B006	Wide Stream Creek Crossing, 10" casing (excluding 6" carrier) in place, complete & ready for use.	35	LF	\$ _____	\$ _____
B007	Remove appurtenance &/or connect to existing 3-inch waterline or gate valve w/ applicable fittings, in place, complete & ready to use	2	EA	\$ _____	\$ _____
B008	3" gate valve and box, including applicable fittings, in place, complete & ready to use.	1	EA	\$ _____	\$ _____

Sub-total of Section B Bid Items

\$ _____

Section C: New Line Extensions (White City Road and Tirey Lane)					
Item No.	Item	Quantity	Units	Unit Price	Total Price
C001	3-inch PVC SDR 21 Class 200 waterline, in place & ready for use, including testing clean up. {Note pay limits per Spec 02-500, Section 2.0}	6,070	LF	\$ _____	\$ _____
C002	3-inch PVC SDR 21 Certa-Lok Yelomine waterline, in place, & ready for use, including testing and clean up. {Note referenced pay limits}	120	LF	\$ _____	\$ _____

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C003	Steel cased Highway Bore, 8" casing (excluding 3" carrier) in place, complete & ready for use.	30	LF	\$ _____	\$ _____
C004	Wide Stream Creek Crossing, 8" casing (excluding 3" carrier) in place, complete & ready for use.	85	LF	\$ _____	\$ _____
C005	Shallow Ditch Crossing, in place, completed & ready for use.	20	LF	\$ _____	\$ _____
C006	Final Cleanup of affected pipeline route (Exc. Bores & paved areas) in accordance with Spec 02-950, Sect. 4.0 {Note minimum unit price stipulation.}	6,160	LF	\$ _____ { \$2.00 Minimum }	\$ _____
C007	Small Post Hydrant with 3" Gate Valve, for new waterline, applicable fittings, in place, complete and ready for use.	2	EA	\$ _____	\$ _____
C008	Remove appurtenance &/or connect to existing 3-inch waterline or gate valve w/ applicable fittings, in place, complete & ready to use	1	EA	\$ _____	\$ _____
C009	3" gate valve and box, including applicable fittings, in place, complete & ready to use.	3	EA	\$ _____	\$ _____
C010	New Meter service including 3/4" service line, meter and box, near side, in place, complete and ready for use.	3	EA	\$ _____	\$ _____
C011	New Meter service including 3/4" service line, meter and box, far side, in place, complete and ready for use.	3	EA	\$ _____	\$ _____

Sub-total of Section C Bid Items

\$ _____

Section D: Miscellaneous Distribution System Improvements					
Item No.	Item	Quantity	Units	Unit Price	Total Price
D001	Isolated Gate Valve Addition on Existing 6" Line via Cut-in, including applicable fittings & piping, in place, complete & ready to use	7	EA EA	\$ _____	\$ _____
D002	Isolated Gate Valve Addition on Existing 8" Line via Cut-in, including applicable fittings & piping, in place, complete & ready to use	6	EA	\$ _____	\$ _____
D003	New Fire Hydrant with 6"x6" Tapping Sleeve & 6" Valve for existing waterline, in place, complete and ready for use.	3	EA	\$ _____	\$ _____
D004	Fire Hydrant Replacement utilizing Existing Valve, including applicable fittings & surface restoration, in place, complete & ready for use, all as referenced in Typ. Detail #8, Sheet D2	5	EA	\$ _____	\$ _____
D0054	Fire Hydrant Relocation utilizing Existing Valve, including applicable fittings & surface restoration, in place, complete & ready for use, all as referenced in Typ. Detail #8, Sheet D2	1	EA	\$ _____	\$ _____

D006	Point Repair on Existing 6" PVC Waterline to replace w/ MJ Fittings & Restraint; Complete & ready for use. <i>Payment per Spec 02-500.</i>	3	EA	\$ _____	\$ _____
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Sub-total of Section D Bid Items

\$ _____

Section E: SCADA System Addition					
Item No.	Item	Quantity	Units	Unit Price	Total Price
E001	Site 1: New Master Meter Vault, Accessories & Piping to accommodate new SCADA Equipment addition; in place, complete & ready for use. {See Plan Sheet P7 & Detail 3, Sheet D4}	1	LS	\$ _____	\$ _____
E002	Site 2: Retrofit an Existing Vault to Add a New 8" Master Meter w/ Accessories to accommodate SCADA Equipment addition; in place, complete & ready to use {See Plan Sht. P7 & Detail 5, Sht.D3}	1	LS	\$ _____	\$ _____
E003	Site 3: New Master Meter Vault (Water), Piping, & Accessories to accommodate new SCADA Equipment addition; in place, complete & ready for use. {See Plan Sheet P8 & Detail 1, Sheet D4}	1	LS	\$ _____	\$ _____
E004	Site 4 & 5: Pipe Modifications & Vault Alterations to accommodate SCADA equipment addition, in place, complete & ready for use. {Per all specified work items on Plan Sht P6 plus Details 2 & 3, Sht. D3}	1	LS	\$ _____	\$ _____
E005	Supervisory Control & Data Acquisition (SCADA) System (all sites) including computers, MTU, all RTUs, radios, antennas, licenses, software, set-up, supplies, & training. Complete & ready to use	1	LS	\$ _____	\$ _____

Sub-total of Section E Bid Items

\$ _____

TOTAL AMOUNT OF BID (A+B+C+D+E)

\$ _____

5.02 General SCADA System Supplier included in this Bid is **(Check One)**:

<p>Bidder proposes to Utilize:</p> <p><input type="checkbox"/> HTI, Inc. (270.274.4632)</p> <p><input type="checkbox"/> Primex (763.559.0568)</p>
--

5.03 Unit prices have been computed in accordance with paragraph 11.03A of the General Conditions.

5.04 Bidder acknowledges that Bid Item No. B004 will require the use of a licensed plumber to make reconnections to an existing service line on the customer side of the OWNER's water meter. The Bidder intends to utilize:

Plumber: _____

License#: _____

- 5.05 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.
- 5.06 SUPPLEMENTAL UNIT PRICES: The following Supplemental Unit Prices will apply in the event that additions to or deductions from the work required in the Bid are ordered. A single price shall be bid for each item. OWNER reserves the right to accept or reject these prices by inclusion in or omission from the Contract Documents to be executed after the award of the Contract.

Item	Type of Work	Unit	Supplemental Unit Price		
			(Words)		(Numbers)
1.	Unclassified undercut, where ordered by the Engineer.	CY	_____.	Dollars	\$_____.
2.	No. 57 aggregate refill, where ordered by the Engineer.	Ton	_____.	Dollars	\$_____.
3.	Class "B" concrete refill, where ordered by the Engineer	CY	_____.	Dollars	\$_____.
4.	Point Repair on Ex. 8" PVC Waterline to replace w/ MJ Fittings & Restraint; In place & ready for use. <i>Payment per Spec 02-500.</i>	EA	_____.	Dollars	\$_____.
5.	New Fire Hydrant with 8"x6" Tapping Sleeve & 6" Valve for existing waterline, in place, complete and ready for use.	EA	_____.	Dollars	\$_____.
6.	Pavement Replacement (w/ Asphalt) & Stone Backfill of affected linear trenches & other areas, in place, complete & ready for use. {Per Note 3; Detail 7, Sheet D1}	LF	_____.	Dollars	\$_____.
7.	Isolated EZ Valve Insertion on Existing 6" Waterline including surface repair, in place, complete & ready for use.	EA	_____.	Dollars	\$_____.
8.	Isolated EZ Valve Insertion on Existing 8" Waterline including surface repair, in place, complete & ready for use.	EA	_____.	Dollars	\$_____.
9.	Open Cut, Steel cased Road Crossing, 8" casing (excluding 3" carrier) in place, complete & ready for use.	LF	_____.	Dollars	\$_____.
10.	Installation of New Hydrant on Existing Waterline via Cut-in Tee x 6" Outlet/Gate Valve; in place & ready for use	EA	_____.	Dollars	\$_____.
11.	Relocate & Reconnect Near Side Meter to new main & existing customer-side service line, all with new tubing, new meter box, new setter & fittings; in place & ready for use.	EA	_____.	Dollars	\$_____.
12.	Site 3: New Master Meter Vault (<u>Sewer</u>) cut into existing 10" Force Main, all piping & other accessories needed to pair with new SCADA Equipment addition (10" mag meter); in place, complete & ready for use.	EA	_____.	Dollars	\$_____.

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 attached to and made a condition of the Bid:

- A. Required Bid security in the form of a Bid Bond (EJCDC No. C-430) or Certified Check (circle type of security provided);
- B. Statement of Experience
- C. Certification of Bidder Regarding Equal Employment Opportunity (*CDBG – Form 950.1*)
- D. Certification of Bidder (Contractor) Concerning Labor Standards & Prevailing Wage Requirements (*CDBG – Form 1421*)
- E. Certification of Bidder Regarding Section 3 & Segregated Facilities (*CDBG*)

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

9.01 This Bid submitted by:

Submitted by:

Signature

Business

Printed or Typed Name

Bidder's Business Address

Title

City, State, Zip Code

Employer's Tax ID No.

Business Phone No.

Business Fax No.

Business Email Address

Cell Phone No.

Other Contact No.

9.02 Bid submitted on _____, 2021.

Seal (if required)

STATEMENT OF EXPERIENCE

The following list represents the most recent clients for whom similar work was performed by the BIDDER. The persons listed may be contacted as references. Provide at least four unique and non-Owner related project references.

No. Contact Person, Company & Phone No. Project Description, Date & Approximate Value of Work

1.		
2.		
3.		
4.		
5.		
6.		

Bidder

**CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY
(CDBG)**

CERTIFICATION OF BIDDER
REGARDING EQUAL EMPLOYMENT OPPORTUNITY

Instructions

This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The Implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.

For contracts over \$10,000, the Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms 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, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract. The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract. *Gender identity* and *Sexual Orientation* have the meanings given by the Department of Labor's Office of Federal Contract Compliance Programs, and are found at www.dol.gov/ofccp/LGBT/LGBT_Faq's.html.

Certification by Bidder		
Name and Address of Bidder (include zip code)		
1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.		
Yes	No	
2. All required compliance reports were filed in connection with such contract or subcontract.		
Yes	No	
3. Bidder has filed all compliance reports due under applicable instructions, including Monthly Employment Utilization Report (257)		
Yes	No	None Required
4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?		
Yes	No	
5. Bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained.		
Name and Title of Signer (please type)		
Signature	Date	

**CONTRACTOR'S CERTIFICATION CONCERNING LABOR STANDARDS AND
PREVAILING WAGE REQUIREMENTS**

TO (Appropriate Recipient):	DATE
C/O	PROJECT NUMBER (if any)
	PROJECT NAME

1. The undersigned, having executed a contract with _____ for the construction of the above identified project, acknowledges that:
 - (a) The Labor Standards provisions are included in the aforesaid contract;
 - (b) Prevailing wage requirements are followed, including paying the higher of the Federal or State wage rate by labor classification.
 - (c) Correction of any infractions of the aforesaid conditions, including infractions by any of his subcontractors and any lower tier subcontractors, is his responsibility.

2. He certifies that:
 - (a) Neither he nor any firm, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor., Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 U.S. C. 276a-2(a)).

 - (b) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designed as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. He agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by his subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. He certifies that:
 - (a) The legal name and the business address of the undersigned are:

(b) The undersigned is:

(1) A SINGLE PROPRIETORSHIP	(3) A CORPORATION ORGANIZED IN THE STATE OF:
(2) A PARTNERSHIP	(4) OTHER ORGANIZATION (Describe)

(c) The name, title and address of the owner, partners, or officers of the undersigned are:

NAME	TITLE	ADDRESS
_____	_____	_____
_____	_____	_____
_____	_____	_____

(d) The names and addresses of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (if none, so state)

NAME	ADDRESS	NATURE OF INTENT
_____	_____	_____
_____	_____	_____
_____	_____	_____

(e) The names, addresses and trade classifications of all other building construction contractors in which undersigned ha a substantial interest (if none, so state):

NAME	ADDRESS	TRADE CLASSIFICATION
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date _____ (Contractor)

By: _____

WARNING

U.S. Criminal Code, Section 1010, Title 18, U.S. C., provides in part: "Whoever makes, passes, utters, or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

CERTIFICATION OF BIDDER REGARDING SECTION 3 (CDBG)

Name of Prime Contractor

Project Name

Project Number

The undersigned hereby certifies that:

- a) Section 3 provisions are included in the Contract.
- b) If bid exceeds \$100,000, a Contractor Section 3 Plan was prepared and submitted as part of the bid proceedings.

Name and Title of Signer (print or type)

Signature

Date

Contractor Section 3 Plan (Sample)
(If bid exceeds \$100,000)

_____ (Name of Contractor) agrees to implement the following specific affirmative action steps directed at increasing the utilization of lower income residents and businesses within the Town/City/County of _____.

- A. To ascertain from the locality's CDBG program official the exact boundaries of the Section 3 covered project area and where advantageous, seek the assistance of local officials in preparing and implementing the Section 3 Plan.
- B. To attempt to recruit from within the city the necessary number of lower income residents through: Local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service.
- C. To maintain a list of all lower-income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.
- D. To insert this Section 3 plan in all bid documents, and to require all bidders on subcontracts to submit a Section 3 plan including utilization goals and the specific steps planned to accomplish these goals. *
- E. To insure that subcontract which are typically let on a negotiated rather than a bid basis in areas other than Section 3 covered project areas, are also let on a negotiated basis, whenever feasible, when let in a Section 3 covered project area.*
- F. To formally contact unions, subcontractors and trade associations to secure their cooperation for this program.
- G. To insure that all appropriate project area business concerns are notified of pending subcontractual opportunities.
- H. To maintain records, including copies of correspondence, memoranda, etc., which document that all of the above affirmative action steps have been taken.
- I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of this Section 3 plan.
- J. To list on Table A, information related to subcontracts to be awarded.
- K. To list on Table B, all projected workforce needs for all phases of this project by occupation, trade, skill level and number of positions.

*Loans, grants, contracts and subsidies for \$100,000 or less are exempt.

As officers and representatives of _____
(Name of Contractor)

We the undersigned have read and fully agree to this Section 3 Plan, and become a party to the full implementation of this program.

Signature

Title

Date

Signature

Title

Date

TABLE A

Proposed subcontracts breakdown for the period covering _____ through _____
(Duration of the CDBG-Assisted Project)

Column 1	Column 2	Column 3	Column 4	Column 5
TYPE OF CONTRACT (BUSINESS OR PROFESSION)	TOTAL NUMBER OF CONTRACTS	TOTAL APPROXIMATE DOLLAR AMT.	ESTIMATED NO. OF CONTRACTS TO SECTION 3 BUSINESSES*	ESTIMATE DOLLAR AMT. TO SECTION 3 BUSINESSES

* A Section 3 business is: one that is owned by Section 3 residents (low and very low income residents of the project area, public housing residents or persons with disabilities); one that employs Section 3 residents; or one that subcontracts to businesses that provide opportunities for low and very low income residents.

The Project Area is coextensive with the City/County of _____'s boundaries.

Company

Project Name

Project Number

EEO Officer-Signature

Date

TABLE B
Estimated Project Workforce Breakdown

Column 1	Column 2	Column 3	Column 4	Column 5
JOB CATEGORY	TOTAL ESTIMATED POSITIONS	NO. POSITIONS CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS NOT CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS TO BE FILLED WITH SECTION 3 RESIDENTS*
OFFICERS SUPERVISORS				
PROFESSIONALS				
TECHNICIANS				
HOUSING SALES RENTAL/MANAGEMENT				
OFFICE CLERICAL				
SERVICE WORKERS				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				

* Section 3 residents include low and very low income persons who live in the project area, public housing residents and persons with disabilities.

Company

Project Name

Project Number

EEO Officer-Signature

Date

"General Decision Number: KY20210061 02/19/2021

Superseded General Decision Number: KY20200061

State: Kentucky

Construction Type: Heavy

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

HEAVY CONSTRUCTION PROJECTS (including sewer/water construction).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	02/19/2021

ENGI0181-009 07/01/2020

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 33.95	17.25
GROUP 2.....	\$ 31.09	17.25
GROUP 3.....	\$ 31.54	17.25
GROUP 4.....	\$ 30.77	17.25

OPERATING ENGINEER CLASSIFICATIONS

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

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

GROUP 3 - Articulating Truck Operator

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

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

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

IRON0782-010 08/01/2020

	Rates	Fringes
IRONWORKER (Reinforcing & Structural)		
Projects over \$20,000,000.00.....	\$ 30.13	25.17
Projects under \$20,000,000.00.....	\$ 28.54	23.75

LABO0189-001 07/01/2020

	Rates	Fringes
LABORER		
Concrete Saw (Hand Held/Walk Behind).....	\$ 23.51	15.62

LABO0561-003 07/01/2020

	Rates	Fringes
LABORER		
Form Worker.....	\$ 23.91	16.10

LABO1214-001 07/01/2019

	Rates	Fringes
LABORER		
Backfiller, Carpenter Tender, Common or General, Concrete Worker, Dumpman, Fence Erection.....	\$ 23.26	14.87
Pipelayer & Tamper (Hand Held/Walk Behind).....	\$ 23.51	14.87

* UAVG-KY-0001 01/01/2020

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

SUKY2011-017 06/25/2014

Rates	Fringes
-------	---------

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

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

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

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION"

NOTICE OF AWARD

TO:

PROJECT Description: **City of Mortons Gap Water Works
Water System Rehabilitation & Upgrade Project
Contract 3 – Miscellaneous System Upgrades & Line Extensions**

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated **March 10, 2021** and Instructions to Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$ _____

You are required by the Instructions to Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER's acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

Within ten (10) days of your compliance of the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with an additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 2021.

CITY OF MORTONS GAP

Chris Phelps, Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged and dated this _____ day of _____ 2021.

(Contractor)

Name, Title

SUGGESTED FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)
FUNDING AGENCY EDITION

THIS AGREEMENT is by and between City of Mortons Gap, Kentucky (“Owner”) and
_____ (“Contractor”).

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, 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:

The Work involves the replacement of various sized waterlines, extension of new 3” waterlines to serve unserved rural residences, miscellaneous valve additions, various hydrant replacements, and the addition of a new SCADA system; all in the Mortons Gap Water System (Hopkins County).

ARTICLE 2 – THE PROJECT

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

Contract No. 3 – Miscellaneous System Upgrades & Line Extensions

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by McGhee Engineering Inc.

3.02 The Owner has retained McGhee Engineering 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 **120** days after the date when the Contract Time 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 **150** days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. Substantial Completion: Contractor shall pay Owner **\$500** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially 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 **\$500** 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.

ARTICLE 5 – CONTRACT PRICE

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

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

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

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

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the **first** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 95 percent of Work completed (with the balance being retainage); and
 - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 2. Upon Substantial Completion of the entire construction to be provided under the Contract Documents..

6.03 *Final Payment*

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

ARTICLE 7 – INTEREST

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

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

1.02 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 6 inclusive).
 2. Performance bond (pages 1 to 3 inclusive).
 3. Payment bond (pages 1 to 3 inclusive).
 4. Bid bonds (pages 1 to 2 inclusive).
 5. General Conditions (pages 1 to 66 inclusive).
 6. Supplementary Conditions (pages 1 to 3 inclusive).
 7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings & Exhibits consisting of 1 sheet bearing the following general title: Contract 3- Miscellaneous System Upgrades & Line Extensions
 9. Addenda (numbers 0 to 0, inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (**pages 1 to 5 inclusive**).
 - b. Documents submitted by Contractor prior to Notice of Award – Statement of Experience.
 - c. Documents submitted by Contractor outlined in SRF Supplemental General Conditions.
 - d. Documents submitted by Contractor outlined in CDBG Supplemental General Conditions.
 11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed (pages 1 to 1, inclusive).
 - b. Work Change Directives.
 - c. Change Order(s).
- 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 in the Supplementary Conditions.

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

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

OWNER:

CONTRACTOR

City of Mortons Gap

By: _____

By: _____

Title: Chris Phelps, Mayor

Title: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: Ashley Andry, City Clerk

Title: _____

Address for giving notices:

Address for giving notices:

PO Box 367

Mortons Gap, KY 42440

License No. (where applicable):

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

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

PERFORMANCE BOND

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

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

OWNER (*Name and Address*):

City of Mortons Gap
PO Box 367
Mortons Gap, KY 42440

CONTRACT

Effective Date of Agreement:
Amount:
Description (*Name and Location*):

BOND

Bond Number:
Date (*Not earlier than Effective Date of Agreement*):
Amount:
Modifications to this Bond Form:

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

Note: Provide execution by additional parties, such as joint ventures, if necessary.

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

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.
2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
 - 2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
 - 2.3 Owner has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract; or
 2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.
3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:
 - 3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
 - 3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
 - 3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
 2. Deny liability in whole or in part and notify Owner citing reasons therefore.
4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

- 5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
- 5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
- 5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

6. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the 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 Owner or its heirs, executors, administrators, or successors.

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

8. 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 Contractor Default or within two years after Contractor ceased working or within two years after 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 period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

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

11. Definitions.

- 11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
- 11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
- 11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address and Telephone)*

Surety Agency or Broker:

Owner's Representative *(Engineer or other party)*:

PAYMENT BOND

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

CONTRACTOR (*Name and Address*):

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

OWNER (*Name and Address*):

**City of Mortons Gap
PO Box 367
Mortons Gap, KY 42440**

CONTRACT

Effective Date of Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of Agreement*):

Amount:

Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal (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

Note: Provide execution by additional parties, such as joint ventures, if necessary.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2 Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. Reserved.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, 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 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.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

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

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions

15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms “labor, materials or equipment” that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and 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.

15.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address, and Telephone)*

Surety Agency or Broker:

Owner’s Representative *(Engineer or other)*:

NOTICE TO PROCEED

TO: _____

DATE: _____

PROJECT: **City of Mortons Gap, Kentucky
Water System Rehabilitation & Upgrade
Project: Contract 3 (Upgrades & Extensions)**

You are hereby notified to commence WORK in accordance with the Agreement dated _____ on or before _____. You are to substantially complete the WORK within **120** consecutive calendar days thereafter. The required date of substantial completion of the WORK is therefore _____. You are also required to fully complete all WORK within **150** consecutive calendar days. The required date of final completion is therefore _____.

CITY OF MORTONS GAP, KENTUCKY

Chris Phelps, Mayor

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged and dated this ____ day of _____ 2021.

(Contractor)

Name, Title

Employer Identification Number

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



Endorsed by



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

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

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**STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT**

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.
 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature

whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.

27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms

“substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.

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

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives*:
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for

compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

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

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract),

the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.

- C. *Evidence of Owner's Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

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

2.03 *Before Starting Construction*

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the

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

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

2.06 *Electronic Transmittals*

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

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

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

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of

opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

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

B. *Resolving Discrepancies:*

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

3.04 *Requirements of the Contract Documents*

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

3.05 *Reuse of Documents*

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

4.04 *Progress Schedule*

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

4.05 *Delays in Contractor's Progress*

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

- 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

5.01 *Availability of Lands*

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

5.02 *Use of Site and Other Areas*

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

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

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

5.03 *Subsurface and Physical Conditions*

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

5.04 *Differing Subsurface or Physical Conditions*

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

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

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

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

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information

from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Possible Price and Times Adjustments:*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
- b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
- c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
- d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.

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

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
2. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as

defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such

condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 - 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 - 3. Broad form property damage coverage.

4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.

3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

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

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

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

6.07 *Receipt and Application of Property Insurance Proceeds*

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

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

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

7.02 *Labor; Working Hours*

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

7.03 *Services, Materials, and Equipment*

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

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

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

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.

- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an “or-equal” item, Contractor may request that Engineer 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.

Supplementary Conditions

A. 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.

B. 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.

C. 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 Defined Terms

SC 1.01.A.3 Add the following language at the end of last sentence of Paragraph 1.01.A.3:

The Application for Payment form to be used on this project is RD Form 1927-7.

SC 1.01.A.8 Insert a comma and the word “Engineer” immediately after the word “Contractor” in this definition.

SC 1.01.A.8 Add the following language at the end of last sentence of Paragraph 1.01.A.8:

The Change Order form to be used on this Project is EJCDC C-941. Agency approval is required before Change Orders are effective.

SC 1.01.A.48 Add the following language at the end of the last sentence 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 Paragraph 1.01.A.50:

Manufacturer’s Certification letter is documentation provided by the manufacturer, supplier, distributor, vendor, fabricator, etc. to various entities stating that the American Iron and Steel products to be used in the project are produced in the United States in accordance with American Iron and Steel requirements. Refer to Manufacturer’s Certification Letter provided in these Contract Documents.

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

AIS - refers to requirements mandated by 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. The term “iron and steel products” means 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.

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-2.02 Copies of Documents

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

Owner shall furnish the Contractor up to five copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

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-2.05 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 25% of completion of the Work and the schedule for maintenance manuals shall show all submittals complete before 50% of completion of the Work.

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-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-4.01 Commencement of Contract Times; Notice to Proceed

SC 4.01.A 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 ninetieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

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

Delete Paragraphs 5.03.A and 5.03.B in their entirety and insert the following:

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

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. Every Bond must run to Owner.

I. If the principal is an individual, his/her full name and residence shall be inserted in the body thereof, and he/she shall sign the Bonds with his/her usual signature on the line opposite the scroll seal. If the principals are partners, their individual names shall appear in the body of the Bonds, with the recital that they are partners comprising a firm, naming it, and all the members of the firm shall execute the Bonds as individuals.

J. The signature of a witness shall appear in the appropriate places, attesting the signatures of each individual party to the Bonds.

K. If the principal is a corporation, the name of the state in which incorporated shall be inserted in the appropriate place in the body of the Bonds, and said instrument shall be executed and attested under the corporate seal as indicated on the form. If the corporation has no seal, the fact shall be stated, in which case a scroll or adhesive seal shall appear following the corporate name. This also applies to execution by surety.

L. The date of the Bonds must not be prior to the date of the Contract for which given.

M. The bond shall be signed by an individual authorized to sign on behalf of the surety and a power of attorney, authorizing the execution of the Bonds by an attorney-in-fact, or agent of the surety, shall be attached to one executed counterpart of the Bonds.

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. Endorsements shall not exclude supervisory or inspection services.

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

8. Railroad Protective Liability Policy: Not applicable.

a. CONTRACTOR shall provide a Railroad Protective Liability Policy for bodily injury, property damage liability, and physical damage to property liability, per limits, duration, and conditions noted in the documents provided by the Railroad bound at the end of Division 1.

9. The types of insurance and the limits of liability indicated are the minimum required. Neither Owner nor Engineer warrant the adequacy of the types of insurance or the limits of liability required. Any policy exclusions shall be indicated on the insurance certificate. Contractor shall provide verification of all coverages with or on the insurance certificate.

10. Regardless whether or not an Owners' and Contractors' Protective (OCP) policy or Project Management Protective Liability (PMPL) policy is furnished, insurance certificates for commercial general, automobile, umbrella, and builders risk 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.

11. As an alternative to providing Form CG 20 10 10 01 or CG 20 10 07 04, Contractor may furnish to Owner an OCP policy or a PMPL policy with Owner as the named insured and Engineer as either an additional insured or a named insured. OCP policy or PMPL policy shall provide for bodily injury and property damage coverage equal to the sum of: the general aggregate limit for commercial general liability plus the amount specified for the umbrella coverage. OCP policy or PMPL policy shall provide coverage arising out of:

- a. operations performed by Contractor at the project location.
- b. acts or omissions in connection with the general supervision, inspection and/or coordination of such operations.

If an OCP or PMPL policy is provided, Contractor shall provide originals of the Final OCP or PMPL to all insured and additional insured parties.

12. Endorsements, OCP policy, PMPL policy, or General Liability policy shall not exclude supervisory or inspection services.

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

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

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: Statutory

Federal, if applicable (e.g., Longshoreman's): Statutory

Foreign voluntary worker compensation Statutory

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

General Aggregate \$ 2,000,000

Products - Completed Operations Aggregate	\$ <u>2,000,000</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:

Combined Single Limit of	\$ <u>1,000,000</u>
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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	\$ _____
General Aggregate	\$ _____

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

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: none.

SC-6.05 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.

Add the following to the list of items in Paragraph 6.05.A, as numbered items:

14. include for the benefit of Owner loss of profits and soft cost coverage including, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, plus attorneys fees and engineering or other consultants' fees, if not otherwise covered;

SC-7.02.B Labor; Working Hours

Amend the first and second sentences of Paragraph 7.02.B to state "...all Work at the Site shall be performed during regular daylight working hours, 7:00 am through 5:00 pm. Contractor will not perform Work on a Saturday, Sunday or any legal holiday unless approved by the Engineer."

SC-7.03 Services, Materials and Equipment

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.

Add the following new Paragraph 7.03.D:

All iron and steel products must meet American Iron and Steel requirements.

SC-7.04 "Or Equals"

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 or is followed by 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 Paragraph a.3.

SC 7.04.A.1 Delete paragraph 7.04.A.1.a.4 in its entirety and insert "Deleted" in its place.

SC 7.04.B.1 Add paragraph 7.04.B.1.in its entirety:

Contractor shall include a Manufacturer's Certification letter for compliance with American Iron and Steel requirements in support data, if applicable. In addition, Contractor shall maintain an updated AIS Materials List to ensure that for de minimis waiver, cost is less than 5% of total materials cost for project and for minor components waiver, the cost of the non-domestically produced component is less than 5% of the total materials cost of the project. An excel version that will compute all totals can be obtained from the RD state office that can be used as working copy.

SC-7.05 Substitutes

SC 7.05.A.3.a.4 Add paragraph 7.05.A.3.a.4 in its entirety:

- 4) comply with American Iron and Steel by providing Manufacturer's Certification letter of American Iron and Steel compliance, if applicable. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

SC-7.06 Concerning Subcontractors, Suppliers, and Others

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), without prior written approval of the Owner.

SC 7.06.B Delete paragraph 7.06.B in its entirety and insert "Deleted" in its place.

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-7.08 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-7.10 Laws and Regulations

Add Paragraph 7.10.D as follows:

- D. Contractor shall comply with the following Kentucky Bidding & Wage Requirements:

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

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

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

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

Replace Paragraph 7.11.A with the following:

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. Manufacturers' Certification letter 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 American Iron and Steel Requirements. Refer to Manufacturer's Certification Letter provided in these Contract Documents. 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. 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 Paragraph 7.16.A.1.e:

- e. obtain the Manufacturer's Certification letter for any item in the submittal subject to American Iron and Steel requirements and include the Certificate in the submittal. Refer to Manufacturer's Certification Letter provided in these Contract Documents.

Add Paragraph 7.16.D.9

- 9. Engineer's review and approval of Shop Drawing or Sample shall include review of compliance with American Iron and Steel requirements, as applicable.

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 Paragraph 7.17.E:

E. Contractor shall certify upon Substantial Completion that all Work and Materials has complied with American Iron and Steel requirements as mandated and subsequent statutes mandating

domestic preference. Contractor shall provide Contractor's Certification Letter to Owner. Refer to General Contractor's Certification Letter provided in these Contract Documents.

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-10.10. American Iron & Steel

Add Paragraph 10.10.A

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 and services required to determine to 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 United States or are the subject of an approved waiver under the Consolidated Appropriations Act of 2017.

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. Change Proposals

Modify Paragraph 11.06.A.1

Inserting the following sentence after “within 15 days after the submittal of the Change Proposal.”: “Include supporting data (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, as applicable.”

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

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-13.02 Allowances

Delete Paragraph 13.02.C in its entirety and insert "Deleted" in its place.

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; &
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-14.03 Defective Work

Add Paragraph 14.03.G:

G. Installation of Materials that are non-compliant with American Iron and Steel requirements shall be considered defective work.

SC-15.01 Progress Payment

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:

The Application for Payment form to be used on this Project is RD Form 1924-18. The Agency must approve all Applications for Payment before payment is made.

SC 15.01.B.5 Add the following new Paragraph after Paragraph 15.01.B.4:

By submitting Materials for payment, Contractor is certifying that the submitted Materials are compliant with American Iron and Steel 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 new Paragraph after Paragraph 15.01.C.2.c:

d. the Materials presented for payment comply with American Iron and Steel.

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

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-15.02 Contractor’s Warranty of Title

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 Substantial Completion

Modify 15.03.A by adding the following after the last sentence: “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 are either produced in the United States 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 United States or are the subject of an approved waiver.”

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

SC-18 Miscellaneous

SC 18.09 Add the following new paragraph after Paragraph 18.08:

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

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 sections 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 "Certificate of Owner's Attorney" before Owner submits the executed Contract Documents to Agency for approval.

B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

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

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

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.B with the title "Audit and Access to Records":

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

SC 19.06 Add the following language after Article 19.05.A with the title “Small, Minority and Women’s Businesses”:

A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women’s businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women’s businesses on solicitation lists; (2) assuring that small, minority and women’s businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women’s businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women’s businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

SC 19.07 Add the following after Article 19.06.A with the title “Anti-Kickback”:

A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States”). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC 19.08 Add the following after Article 19.07.A with the title “Clean Air and Pollution Control Acts”:

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

SC 19.09 Add the following after Article 19.08 with the title “State Energy Policy”:

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

SC 19.10 Add the following after Article 19.09 with the title “Equal Opportunity Requirements”:

A. If this Contract exceeds \$10,000, Contractor shall comply with Executive Order 11246, “Equal Employment Opportunity,” as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and as supplemented by regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

B. Contractor’s compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41

CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR part 60-4. Compliance with the goals will be measured against the total work hours performed.

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

SC 19.11 Add the following after Article 19.10.C with the title "Restrictions on Lobbying":

A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

SC 19.12 Add the following after Article 19.11.A 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 – Environmental mitigation measures for the Project are noted on the Plan Sheets.

SC 19.13 Add the following after Article 19.12.E:

Add “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” means 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. The de minimis and minor components waiver apply to this contract as defined in the Contract Documents..”

SC 19.14 “Definitions” - Add the following after Article 19.13:

“Assistance recipient” is the entity that receives funding assistance from programs required to comply with AIS requirements in the Consolidated Appropriations Act of 2017 and any 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 United States in accordance with American Iron and Steel (AIS) Requirements. If items are purchased via a supplier, distributor, vendor, etc. vs. 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 United States.

“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 United States, 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 United States. This exemption only applies to coatings on the *external surface* of iron and steel components, 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 contractor (or is expected to) to perform construction services (or for water and waste projects funded by the programs which are

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”.

“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).

“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 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.

“General 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, 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.

“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 United States. 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.

“Pass through Entities” is an entity that provides a subaward to a loan and/or grant recipient to carry out part of a Federal program. Examples are grantees utilizing the Revolving Loan Program and Household Water Well Program and Alaska Native Tribal Health Consortium (ANTHC) or the State of Alaska from the RAVG Program.

“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.

“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.

“Ultimate recipient” is a loan or grant recipient receiving funds from a pass-through entity. Examples include: (1) a loan recipient from the Revolving Loan Fund; (2) a loan recipient from the Household Water Well Program; and (3) a grant recipient from ANTHC or the State of Alaska from the RAVG Program.

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

SUPPLEMENTAL GENERAL CONDITIONS
FOR
CLEAN WATER STATE REVOLVING FUND
DRINKING WATER STATE REVOLVING FUND
(Drinking Water and Wastewater)

Project Name: Mortons Gap Water System
Rehabilitation & Upgrade Project

Project Number: WX21107050

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

	<u>Attachment No.</u>
SRF Special Provisions	1
KRS Chapter 45A-Kentucky Model Procurement Code	2
Equal Employment Opportunity (EEO) Documents:	
Notice of Requirement for Affirmative Action	3
Contract Specifications (Executive Order 11246)	4
EEO Goals for Region 4 Economic Areas	5
Special Notice #1 - Check List of EEO Documentation	6
Employer Information Report EEO-1 (SF 100)	7
Labor Standards Provisions for Federally Assisted Construction, EPA Form 5720-4	8
Certifications	
Debarment, Suspension and Other Responsibility Matters	9
Anti-lobbying	10
Region 4 Disadvantaged Business Enterprise (DBE)	11
Bonds and Insurance	12
Storm Water General Permit	13
Davis-Bacon Wage Rate Requirements under FY 2013 Continuing Resolution	14
American Iron and Steel Requirement	15

SRF SPECIAL PROVISIONS

- (a) **Line crossings of all roads and streets shall be done in accordance with the Kentucky Transportation Cabinet requirements as may be set forth in the Special Conditions.**
- (b) **Construction is to be carried out so as to prevent by-passing of flows during construction unless a schedule has been approved by the State or EPA, whichever is applicable. Siltation and soil erosion must be minimized during construction. All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The permit can be found at the following web address: <https://dep.gateway.ky.gov/eForms/default.aspx?FormID=7>.**

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

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

KRS Chapter 45A
Kentucky Model Procurement Code

45A.075 Methods of awarding state contracts.

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

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

Effective: June 24, 2003

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

45A.080 Competitive sealed bidding.

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

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

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

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

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

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

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

Effective: July 15, 2010

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

45A.085 Competitive negotiation.

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

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

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

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

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

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

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

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

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

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

Effective: July 15, 2010

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

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

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

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(a) That there are no additional funds available from any source so as to permit an award to the responsive and responsible bidder whose bid offers the best value; and
(b) The best interest of the state will not permit the delay attendant to a resolicitation under revised specifications, or for revised quantities, under competitive sealed bidding as provided in KRS 45A.080, then a negotiated award may be made as set forth in subsections (2) or (3) of this section.

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

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

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

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

Effective: July 15, 2010

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

45A.095 Noncompetitive negotiation.

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

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

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

(c) For library books;

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

(e) For interests in real property;

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

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

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

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

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

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

Effective: July 15, 2002

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

45A.100 Small purchases by state governmental bodies.

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

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

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

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

(3) The secretary of the Finance and Administration Cabinet may grant to any state agency with a justifiable need a delegation of small purchasing authority which exceeds the agency's small purchase limit provided in subsection (1) of this section. Delegations of small purchasing authority shall be granted or revoked by the secretary of the Finance and Administration Cabinet, in accordance with administrative regulations promulgated by the cabinet pursuant to KRS Chapter 13A. These administrative regulations shall establish, at a minimum, the criteria for granting and revoking delegations of small purchasing authority, including the requesting

agency's past compliance with purchasing regulations, the level of training of the agency's purchasing staff, and the extent to which the agency utilizes the Kentucky Automated Purchasing System. The administrative regulations may permit the secretary of the Finance and Administration Cabinet to delegate small purchase procurements up to the maximum amount specified in subsection (1)(b) of this section.

Effective: July 15, 2010

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

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

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

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

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

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

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

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

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

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

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

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

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

EEO Specifications

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

1. As used in these specifications:
 - (a) Covered Area means the geographical area described in the solicitation from which this contract resulted.
 - (b) Director means Director, Office of Federal Contract Compliance Program, United States Department of Labor, or any person to whom the Director delegates authority;
 - (c) Employer identification number means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - (d) Minority includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take a good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7-a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has

employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative actions steps at least as extensively as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligation.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7-b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and

by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, lay-off, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative actions obligations (7 a through p). The efforts of a contractor association, joint contractor-union, contractor-community, of other similar group of which the contractor is a member and participant may be asserted as fulfilling any one or more of its obligations under 7 a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure

that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example: even though the Contractor has achieved its goal for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables for affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

EEO Goals for Economic Areas in Region 4

Source: Appendix B-80 in 45 FR 65984 (October 3, 1980)

Kentucky:

053 Knoxville, TN	
SMSA Counties:	
3840 Knoxville, TN	6.6
TN Anderson; TN Blount; TN Knox; TN Union.	
Non-SMSA Counties	4.5
KY Bell; KY Harlan; KY Knox; KY Laurel; KY McCreary; KY Wayne; KY Whitley; TN	
Campbell; TN Claiborne; TN Cocke; TN Cumberland; TN Fentress; TN Grainger, TN Hamblen;	
TN Jefferson; TN Loudon; TN Morgan; TN Roane; TN Scott;	
TN Sevier.	
054 Nashville, TN:	
SMSA Counties:	
1660 Clarksville - Hopkinsville, TN - KY	18.2
KY Christian; TN Montgomery.	
5360 Nashville - Davidson, TN	15.8
TN Cheatham, TN Davidson; TN Dickson; TN Robertson; TN Rutherford; TN Sumner; TN	
Williamson; TN Wilson.	
Non-SMSA Counties	12.0
KY Allen; KY Barren; KY Butler; KY Clinton; KY Cumberland; KY Edmonson; KY Logan; KY	
Metcalfe; KY Monroe; KY Simpson; KY Todd; KY Trigg; KY Warren; TN Bedford; TN Cannon;	
TN Clay; TN Coffee; TN DeKalb; TN Franklin; TN Giles; TN Hickman; TN Houston; TN	
Humphreys; TN Jackson; TN Lawrence; TN Lewis; TN Macon; TN Marshall; TN Maury; TN	
Moore; TN Overton; TN Perry; TN Pickett; TN Putnam; TN Smith; TN Stewart; TN Trousdale;	
TN Van Buren; TN Warren; TN Wayne; TN White.	
056 Paducah, KY:	
Non-SMSA Counties	5.2
IL Hardin; IL Massac; IL Pope; KY Ballard; KY Caldwell; KY Calloway. KY Carlisle; KY	
Crittenden; KY Fulton; KY Graves; KY Hickman; KY Livingston; KY Lyon. KY McCracken; KY	
Marshall.	
057 Louisville, KY:	
SMSA Counties:	
4520 Louisville, KY-IN	11.2
IN Clark; IN Floyd; KY Bullitt; KY Jefferson; KY Oldham.	
Non-SMSA Counties	9.6
IN Crawford; IN Harrison; IN Jefferson; IN Orange; IN Scott; IN Washington; KY Breckinridge;	
KY Grayson; KY Hardin; KY Hart; KY Henry; KY Larue; KY Marion;	
KY Meade; KY Nelson; KY Shelby; KY Spencer; KY Trimble; KY Washington.	
058 Lexington, KY	
SMSA Counties	
4280 Lexington-Fayette, KY	10.8
KY Bourbon; KY Clark; KY Fayette; KY Jessamine; KY Scott; KY Woodford.	
Non-SMSA Counties	7.0
KY Adair KY Anderson; KY Bath; KY Boyle; KY Breathitt; KY Casey; KY Clay; KY Estill; KY	
Franklin; KY Garrard; KY Green; KY Harrison; KY Jackson; KY Knott; KY Lee; KY Leslie; KY	
Letcher; KY Lincoln; KY Madison; KY Magoffin; KY Menifee; KY Mercer; KY Montgomery;	
KY Morgan. KY Nicholas; KY Owsley; KY Perry; KY Powell; KY Pulaski; KY Rockcastle; KY	
Russell; KY Taylor; KY Wolfe.	
059 Huntington, WV:	
SMSA Counties:	
3400 Huntington – Ashland, WV-KY-OH	2.9
KY Boyd; KY Greenup; OH Lawrence; WV Cabell; WV Wayne.	
Non-SMSA Counties	2.5
KY Carter; KY Elliott; KY Floyd; KY Johnson; KY Lawrence; KY Martin; KY Pike; KY Rowan;	
OH Gallia; WV Lincoln; WV Logan; WV Mason; WV Mingo.	
067 Cincinnati, OH:	
SMSA Counties:	
1640 Cincinnati, OH-KY-IN	11.0
IN Dearborn; KY Boone; KY Campbell; KY Kenton; OH Clermont;	
OH Hamilton; OH Warren.	

3200 Hamilton-Middletown, OH	5.0
OH Butler.	
Non-SMSA Counties	9.2
IN Franklin; IN Ohio; IN Ripley; IN Switzerland; KY Bracken; KY Carroll; KY Fleming; KY Gallatin; KY Grant; KY Lewis; KY Mason; KY Owen; KY Pendleton; KY Robertson; OH Adams; OH Brown; OH Clinton; OH Highland.	
080 Evansville, IN:	
SMSA Counties	
2440 Evansville, IN-KY	4.8
IN Gibson; IN Posey; IN Vanderburgh; IN Warrick; KY Henderson.	
5990 Owensboro, KY	4.7
KY Daviess.	
Non-SMSA Counties	3.5
IL Edwards; IL Gallatin; IL Hamilton; IL Lawrence; IL Saline; IL Wabash; IL White; IN Dubois; IN Knox; IN Perry; IN Pike; IN Spencer; KY Hancock; KY Hopkins; KY McLean; KY Muhlenberg; KY Ohio; KY Union; KY Webster.	

**CHECK LIST OF EEO DOCUMENTATION FOR BIDDERS
ON GRANT/LOAN CONSTRUCTION
(Required by Executive Order 11246 as amended)**

The low, responsive responsible bidder must forward the following items, in duplicate, to the owner no later than ten (10) days after bid opening. The owner shall have one (1) copy available for inspection by the Office of Federal Contracts Compliance within 14 days after the bid opening. The web site for the OFCC is http://www.dol.gov/ofccp/regs/compliance/ca_11246.htm.

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

Employer Information Report EEO-1

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

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

The EEO-1 Report must be filed by:

(A) All private employers who are: (1) subject to Title VII of the Civil Rights Act of 1964 (as amended by the Equal Employment Opportunity Act of 1972) with 100 or more employees EXCLUDING State and local governments, primary and secondary school systems, institutions of higher education, Indian tribes and tax-exempt private memberships clubs other than labor organizations; OR (2) subject to Title VII who have fewer than 100 employees if the company is owned or affiliated with another company, or there is centralized ownership, control or management (such as central control of personnel policies and labor relations) so that the group legally constitutes a single enterprise and the entire enterprise employs a total of 100 or more employees.

(B) All federal contractors (private employers), who: (1) are not exempt as provided for by 41 CFR 60-1.5, (2) have 50 or more employees, and (a) are prime contractors or first-tier subcontractors, and have a contract, subcontract, or purchase order amounting to \$50,000 or more; or (b) serve as depository of Government funds in any amount, or (c) is a financial institution which is an issuing or paying agent for U.S. Savings Bonds and Notes.

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

When filing for the EEO-1 Report for the first time, go to the web site at:

<http://www.eeoc.gov/employers/eeo1survey/>

and select "Filing Time Filers" from the box labeled INFORMATION. File out the electronic questionnaire to enter your company into Joint Reporting Committee (JRC) system. Once you have completed the registration process, you will be contacted on how to proceed with the EEO-1 Report. If you have previously registered with the JRC, follow their instructions to update your information.

Labor Standards Provisions for Federally Assisted Construction

Labor standards provisions applicable to contracts covering federally financed and assisted construction (29 CFR 5.5, Contract Provisions and Related Matters) that apply to EPA Special Appropriations Projects grants are:

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

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

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

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

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

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

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

(3) Withholding for unpaid wages and liquidated damages. The U.S. Environmental Protection Agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally- assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such liabilities of such contractor or

subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) (2) of this section.

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

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

CERTIFICATIONS

Debarred Firms

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

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

Anti-lobbying Certification

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

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

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

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

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

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

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

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

CERTIFICATION REGARDING LOBBYING
Certification for Contracts, Grants,
Loans, and Cooperative Agreements

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

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

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

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

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

Typed Name & Title of Authorized Representative

Signature of Authorized Representative

Date

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

EPA DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

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

Grant recipient responsibilities:

- Conduct an Availability Analysis and negotiate fair share objectives with EPA (§33.411), or adopt the fair share objectives of the oversight state agency revolving loan fund for comparable infrastructure. (§33.405(b)(3)).
- Include the Appendix A term and condition in each contract with a primary contractor (§3.106). The term and condition is included in the EPA Region 4 contract specifications insert *FEDERAL REQUIREMENTS AND CONTRACT PROVISIONS FOR SPECIAL APPROPRIATION ACT PROJECTS US ENVIRONMENTAL PROTECTION AGENCY, Region III, June 2008*.
- Employ the six Good Faith Efforts during prime contractor procurement (§33.301).
- Require prime contractor to comply with the following prime contractor requirements of Title 40 Part 33:
 - To employ the six Good Faith Efforts steps in paragraphs (a) through (e) of §33.301 if the prime contractor awards subcontracts (§33.301(f)).
 - To provide EPA form 6100-2 – *DBE Subcontractor Participation Form* to all DBE subcontractors (§33.302(e)).
 - To submit EPA forms 6100-3 – *DBE Program Subcontractor Performance Form* and 6100-4 – *DBE Program Subcontractor Utilization Form* with bid package or proposal. (§33.302 (f) and (g)).
 - To pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§33.302(a)).
 - To notify recipient in writing by its prime contractor prior to any termination of a DBE subcontractor for convenience by the prime contractor (§33.302(b)).
 - To employ the six good faith efforts described in §33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§33.302(c)).
 - To employ the six good faith efforts described in §33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).

- Semiannually complete and submit to Charles Hayes, EPA Region 4 DBE Coordinator EPA form 5700-52A summarizing DBE participation achieved during the previous six months (§33.502).
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including documentation of its, and its prime contractors', good faith efforts (§33.501(a)).

Prime Contractor Responsibilities:

- Employ the six Good Faith Efforts steps in paragraphs (a) through (e) of §33.301 if the prime contractor awards subcontracts (§33.301(f)).
- Provide EPA form number 6100-2 – *DBE Program Subcontractor Participation Form* and form number 6100-3 – *DBE Program Subcontractor Performance Form* to each DBE subcontractor prior to opening of the contractor's bid or proposal (§33.302(e) and (f)).
- Complete EPA form number 6100-4 – *DBE Program Subcontractor Utilization Form* (§33.302(g)).
- Submit to recipient with its bid package or proposal the completed EPA form number 6100-4, plus an EPA form number 6100-3 for each DBE subcontractor used in the contractor's bid or proposal (§33.302(f) and (g)).
- Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§33.302(a)).
- Notify the recipient in writing prior to prime contractor termination of a DBE subcontractor for convenience (§33.302(b)).
- Employ the six good faith efforts described in §33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§33.302(c)).
- Employ the six good faith efforts described in §33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
- Semiannually inform recipient of DBE participation achieved (§33.502).
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including documentation of its, and its prime contractors', good faith efforts (§33.501(a)).

Subcontractor Responsibilities:

- May submit EPA form 6100-2 – *DBE Subcontractor Participation Form* to Charles Hayes, EPA Region 4 DBE Coordinator (§33.302(e)).
- Must complete EPA form 6100-3 – *DBE Program Subcontractor Performance Form*, and submit it to the prime contractor soliciting services from the subcontractor prior to the opening of bids for the prime contract.

SPAP Requirements:

Form	Requirement	Provided By:	Completed By:	Submitted To:
EPA Form 6100-2	Grant Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	EPA Region 4 DBE Coordinator Charles Hayes
EPA Form 6100-3	Grant Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	Grant Recipients as part of a bid or proposal package
EPA Form 6100-4	Grant Recipients required to have prime contractors complete the form	Grant Recipients	Prime Contractors	Grant Recipients as part of a bid or proposal package

SRF Requirements:

Form	Requirement	Provided By:	Completed By:	Submitted To:
EPA Form 6100-2	Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	DOW Project Administrator
EPA Form 6100-3	Recipients required to have prime contractors provide form to Subcontractors	Prime Contractors	DBE Subcontractors	Dow Project Administrator w/ATA Package
EPA Form 6100-4	Recipients required to have prime contractors complete the form	Recipients	Prime Contractors	DOW Project Administrator w/ATA Package
Pay Request DBE Form	Recipients required to have prime contractors complete the form	Recipients	Prime Contractors	DOW Project Administrator w/EACH PAYMENT

DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION POLICY

PROJECT NAME: _____

BID DATE: _____

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

Prime Contractor's Name: _____

Contact Person: _____

Address: _____

Phone: _____

Cell Phone: _____

Email: _____

Total Contract Amount: _____

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

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

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

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

6. List of MBE Subcontractors:

Name: _____

Contact Person: _____

Address: _____

Phone: _____

Cell Phone: _____

Email: _____

Type of Contract: _____

Work to be Done: _____

Amount: _____

7. List of WBE Subcontractors:

Name: _____

Contact Person: _____

Address: _____

Phone: _____

Cell Phone: _____

Email: _____

Type of Contract: _____

Work to be Done: _____

Amount: _____

Attach Additional Sheets, If Necessary

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

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

(i). Ensure DBE construction firms or material suppliers are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing DBEs on solicitation lists and soliciting them whenever they are potential sources. A good source for a list of DBEs is the Kentucky Transportation’s website: <http://transportation.ky.gov/Civil-Rights-and-Small-Business-Development/Pages/Certified-DBE-Directory.aspx>.

The prime contractor certifies that a bidders list (see example sheet below) of qualified vendors, including DBEs, was developed for current and future solicitations and that the list will be maintained. *Submit a copy of the list as documentation.*

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

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

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

Company name and phone number: _____

Area of work expertise: _____

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

b. Advertisements, if applicable: List each publication in which an announcement or notification was placed. *Submit a tear sheet of each announcement from each publication as documentation.*

Name of publication: _____

Date(s) of advertisement: _____

Specific subcontract areas announced: _____

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

Method of notification: _____

Date(s) of notification: _____

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

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

- (iv). Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority business, and women’s business enterprises.
 - The prime contractor certifies that they established delivery schedules which would allow DBEs to participate in the projects.

- (v). Use the services and assistance of the Small Business Administration (SBA) and the Minority Business Development Agency (MBDA) of the U.S. Department of Commerce. The easiest way to utilize the services of SBA and MBDA is to visit their websites: www.sba.gov and www.mbda.gov and use the electronic tools available there or you may send the nearest SBA and MBDA office a certified letter that generally describes the solicitation, the dates it will be open, the types of vendors you are seeking and applicable SIC or NAIC codes if known. You may also use the services and assistance of the Procurement Technical Assistance Center (PTAC). The easiest way to utilize the services of PTAC is to send an email: ptac@ksbdc.org and generally describe the solicitation, the dates it will be open, the types of vendors you are seeking and applicable SIC or NAIC codes if known.
 - The prime contractor certifies that the assistance of the SBA, MBDA, and/or PTAC was utilized. *Submit pages printed off the SBA and MBDA websites which evidence efforts to register a solicitation on those sites or submit copies of the letter sent and certified mail receipt as documentation; submit copies of emails with PTAC as documentation.*

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

9. Signature and date:

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

Signature

Print name and title

Date

BIDDER'S LIST FORM

OWNER: _____

LOAN NO: _____

PROJECT TITLE: _____

BID DATE: _____

Instructions:

1. This list must include all firms that were solicited for participation, bid on, or quoted for a prime contract or subcontracts under EPA assisted projects, included both DBE's and non DBE's.
2. SRF loan participants must keep the Bidder's List until the project period for the identified loan has ended and no funds are remaining.
3. This list must be submitted to DOW in the ATA Package. Contract Award Approval cannot be given until this form has been received by DOW.
4. The following information must be obtained from all prime and subcontractors. Please complete the form below:

ENTITY'S NAME	MAILING ADDRESS	CONTACT PERSON	PHONE#	E-MAIL ADDRESS	M/WBE?

BONDS AND INSURANCE

The minimum requirements shall be as follows:

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

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

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

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

NOTICE OF INTENT

All construction projects with surface disturbance of more than 1 acre during the period of construction must have a KPDES Storm Water General Permit. The permit can be found at the following web address:

<https://dep.gateway.ky.gov/eForms/default.aspx?FormID=7>.

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

Davis-Bacon Wage Rate Requirements

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

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

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

Preamble

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

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

I. Requirements Under The Consolidated and Further Continuing Appropriations Act, 2013 (P.L. 113-6) For Subrecipients That Are Governmental Entities:

The following terms and conditions specify how recipients will assist EPA in meeting its Davis-Bacon (DB) responsibilities when DB applies to EPA awards of financial assistance under the FY 2013 Continuing Resolution with respect to State recipients and subrecipients that are governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient. The recipient or subrecipient may also obtain additional guidance from DOL's website at <http://www.dol.gov/whd/>

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

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

2. Obtaining Wage Determinations.

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

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

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

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

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

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

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

(1) Minimum wages.

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

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

Subrecipients may obtain wage determinations from the U.S. Department of Labor's website, www.dol.gov.

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

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

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

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

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

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the subrecipient(s) do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the request and the local wage determination, including the views of all

interested parties and the recommendation of the State award official, to the Administrator for determination. The request shall be sent to the EPA DB Regional Coordinator concurrently. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

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

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

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

(3) Payrolls and basic records.

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

the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

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

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

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

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

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

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

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

(4) Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will

no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

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

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

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

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

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

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

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29

CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and Subrecipient(s), State, EPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

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

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

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

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

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

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

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

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

be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

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

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

5. Compliance Verification.

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

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

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

the examinations the subrecipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

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

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/contacts/whd/america2.htm>.

II. Requirements Under The Consolidated and further Continuing Appropriations Act, 2013 (P.L. 113-6) For Subrecipients That Are Not Governmental Agencies

The following terms and conditions specify how recipients will assist EPA in meeting its DB responsibilities when DB applies to EPA awards of financial assistance under the FY2013 Continuing Resolution with respect to subrecipients that are not governmental entities. If a subrecipient has questions regarding when DB applies, obtaining the correct DB wage determinations, DB provisions, or compliance monitoring, it may contact the State recipient for guidance. The recipient or subrecipient may also obtain additional guidance from DOL's web site at <http://www.dol.gov/whd/>.

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

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

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

2. Obtaining Wage Determinations.

(a) Subrecipients must obtain proposed wage determinations for specific localities at www.wdol.gov. After the Subrecipient obtains its proposed wage determination, it must submit the wage determination to (insert contact information for State recipient DB point of contact for wage determination) for approval prior to inserting the wage determination into a solicitation, contract or issuing task orders, work assignments or similar instruments to existing contractors

(ordering instruments unless subsequently directed otherwise by the State recipient Award Official).

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

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

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

(c) If the subrecipient carries out activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the subrecipient shall insert the appropriate DOL wage determination from www.wdol.gov into the ordering instrument.

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

(d) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a subrecipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the subrecipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the subrecipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The subrecipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

3. Contract and Subcontract provisions.

(a) The Recipient shall insure that the subrecipient(s) shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including

painting and decorating, of a treatment work under the CWSRF or a construction project under the DWSRF financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or the FY 2013 Continuing Resolution, the following clauses:

(1) Minimum wages.

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

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

Subrecipients may obtain wage determinations from the U.S. Department of Labor's web site, www.dol.gov.

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

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

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

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

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

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

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

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

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

(2) Withholding. The subrecipient(s) shall upon written request of the EPA Award Official or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by

the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

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

(ii)(A) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the subrecipient, that is, the entity that receives the sub-grant or loan from the State capitalization grant recipient. Such documentation shall be available on request of the State recipient or EPA. As to each payroll copy received, the subrecipient shall provide written confirmation in a form satisfactory to the State indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the subrecipient(s) for transmission to the State or EPA if requested by EPA, the State, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the subrecipient(s).

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

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

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

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

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

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

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

(4) Apprentices and trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered

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

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

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

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

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

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

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

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

(10) Certification of eligibility.

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

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

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

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

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

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

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

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

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

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

5. Compliance Verification.

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

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

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

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

(e) Subrecipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <http://www.dol.gov/whd/america2.htm> or its successor site.

American Iron and Steel Requirement

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

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

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

Sample Certification

The following information is provided as a sample letter of step certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name

Company Address

City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXXXX)

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

**CONTRACT DOCUMENTS GUIDE
FOR
KCDBG FUNDED CONSTRUCTION PROJECTS**

February 2017

CONTRACT DOCUMENTS GUIDE*

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- XIII. Contract Form *(Included in the "Agreement" Section of Contract Documents)*
- XIV. Bonding and Insurance Requirements *(Included in the "Agreement" Section of Contract Documents)*
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- XVI. General Conditions Table of Contents *(See Page 17)*
- XVII. General Conditions Including Federal Labor Standards Provisions *(See Page 18)*
- XVIII. Supplemental General Conditions Including Equal Opportunity Provisions *(See Page 44)*

*The contract document must include all the items contained in the bid package as well as an executed contract, bid proposal, executed contractor certifications and executed bond and insurance forms.

I. General Information

Description of Project: The work involves the replacement of various sized waterlines, extension of new 3" waterlines to serve unserved rural residences, miscellaneous valve additions, various hydrant replacements, and the addition of a new SCADA system; all in the Mortons Gap Water System (Hopkins County).

Location (Recipient): City of Mortons Gap (Hopkins County)
131 Cross Street; PO Box 367
Mortons Gap, Kentucky 42440

List of Contracts: City of Mortons Gap (Owner)
Chris Phelps, Mayor
131 Cross Street - PO Box 367
Mortons Gap, Kentucky 42440
(270) 258-5362

McGhee Engineering, Inc. (Engineer)
Chris Wilcutt, PE
202 Ewing Street – PO Box 267
Guthrie, Kentucky 42234
(270) 483-9985

Pennyrile Area Development District (Grant Administrator)
Angie Crawford
300 Hammond Drive
Hopkinsville, Kentucky 42240
(270) 886-9484

Grant No. 19-005

VII. Certification of Bidder Regarding Equal Employment Opportunity

<p>CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY</p>
<p>Instructions</p>
<p>This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The Implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance reports due under applicable instructions.</p> <p>Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven calendar days after bid opening. No contract shall be awarded unless such report is submitted.</p> <p>For contracts over \$10,000, the Contractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms 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, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes. The Contractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract. The Contractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract. <i>Gender identity</i> and <i>Sexual Orientation</i> have the meanings given by the Department of Labor's Office of Federal Contract Compliance Programs, and are found at www.dol.gov/ofccp/LGBT/LGBT_Faq's.html.</p>
<p>Certification by Bidder</p>
<p>Name and Address of Bidder (include zip code)</p>
<p>1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.</p> <p style="text-align: center;"> <input type="checkbox"/> Yes <input type="checkbox"/> No </p>

<p>2. All required compliance reports were filed in connection with such contract or subcontract.</p> <p style="text-align: center;">Yes No</p>	
<p>3. Bidder has filed all compliance reports due under applicable instructions, including Monthly Employment Utilization Report (257)</p> <p style="text-align: center;">Yes No None Required</p>	
<p>4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?</p> <p style="text-align: center;">Yes No</p>	
<p>5. Bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained.</p>	
<p>Name and Title of Signer (please type)</p>	
<p>Signature</p>	<p>Date</p>

**VIII. Certification of Bidder Regarding Section 3
(Sample)**

Name of Prime Contractor

Project Name

Project Number

The undersigned hereby certifies that:

- a) Section 3 provisions are included in the Contract.
- b) If bid exceeds \$100,000, a Contractor Section 3 Plan was prepared and submitted as part of the bid proceedings.

Name and Title of Signer (print or type)

Signature

Date

IX. Contractor Section 3 Plan (If bid exceeds \$100,000)

_____(Name of Contractor)_ agrees to implement the following specific affirmative action steps directed at increasing the utilization of lower income residents and businesses within the Town/City/County of _____.

- A. To ascertain from the locality's CDBG program official the exact boundaries of the Section 3 covered project area and where advantageous, seek the assistance of local officials in preparing and implementing the Section 3 Plan.
- B. To attempt to recruit from within the city the necessary number of lower income residents through: Local advertising media, signs placed at the proposed site for the project, and community organizations and public or private institutions operating within or serving the project area such as Service Employment and Redevelopment (SER), Opportunities Industrialization Center (OIC), Urban League, Concentrated Employment Program, Hometown Plan, or the U.S. Employment Service.
- C. To maintain a list of all lower-income residents who have applied either on their own or on referral from any source, and to employ such persons, if otherwise eligible and if a vacancy exists.
- D. To insert this Section 3 plan in all bid documents, and to require all bidders on subcontracts to submit a Section 3 plan including utilization goals and the specific steps planned to accomplish these goals. *
- E. To insure that subcontract which are typically let on a negotiated rather than a bid basis in areas other than Section 3 covered project areas, are also let on a negotiated basis, whenever feasible, when let in a Section 3 covered project area.*
- F. To formally contact unions, subcontractors and trade associations to secure their cooperation for this program.
- G. To insure that all appropriate project area business concerns are notified of pending subcontractual opportunities.
- H. To maintain records, including copies of correspondence, memoranda, etc., which document that all of the above affirmative action steps have been taken.
- I. To appoint or recruit an executive official of the company or agency as Equal Opportunity Officer to coordinate the implementation of this Section 3 plan.
- J. To list on Table A, information related to subcontracts to be awarded.
- K. To list on Table B, all projected workforce needs for all phases of this project by occupation, trade, skill level and number of positions.

*Loans, grants, contracts and subsidies for \$100,000 or less are exempt.

As officers and representatives of _____
(Name of Contractor)

We the undersigned have read and fully agree to this Section 3 Plan, and become a party to the full implementation of this program.

Signature

Title

Date

Signature

Title

Date

TABLE A

Proposed subcontracts breakdown for the period covering _____ through _____
 (Duration of the CDBG-Assisted Project)

Column 1	Column 2	Column 3	Column 4	Column 5
TYPE OF CONTRACT (BUSINESS OR PROFESSION)	TOTAL NUMBER OF CONTRACTS	TOTAL APPROXIMATE DOLLAR AMT.	ESTIMATED NO. OF CONTRACTS TO SECTION 3 BUSINESSES*	ESTIMATE DOLLAR AMT. TO SECTION 3 BUSINESSES

* A Section 3 business is: one that is owned by Section 3 residents (low and very low income residents of the project area, public housing residents or persons with disabilities); one that employs Section 3 residents; or one that subcontracts to businesses that provide opportunities for low and very low income residents.

The Project Area is coextensive with the City/County of _____'s boundaries.

 Company

 Project Name

 Project Number

 EEO Officer-Signature

 Date

TABLE B
Estimated Project Workforce Breakdown

Column 1	Column 2	Column 3	Column 4	Column 5
JOB CATEGORY	TOTAL ESTIMATED POSITIONS	NO. POSITIONS CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS NOT CURRENTLY OCCUPIED BY PERMANENT EMPLOYEES	NO. POSITIONS TO BE FILLED WITH SECTION 3 RESIDENTS*
OFFICERS SUPERVISORS				
PROFESSIONALS				
TECHNICIANS				
HOUSING SALES RENTAL/MANAGEMENT				
OFFICE CLERICAL				
SERVICE WORKERS				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAXIMUM NO. TRAINEES				
OTHERS				

TRADE:

JOURNEYMEN				
HELPERS				
APPRENTICES				
MAXIMUM NO.				

TRAINEES				
OTHERS				

* Section 3 residents include low and very low income persons who live in the project area, public housing residents and persons with disabilities.

Company

Project Name

Project Number

EEO Officer-Signature

Date

X. Certification by Proposed Subcontractor Regarding Equal Employment Opportunity

<p>CERTIFICATION BY PROPOSED SUBCONTRACTOR REGARDING EQUAL EMPLOYMENT OPPORTUNITY</p>	
Name of Prime Contractor	Project Number
Instructions	
<p>This certification is required pursuant to Executive Order 11246 (30 F.R. 12319-25). The Implementing rules and regulations provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause, and if so, whether it has filed all compliance reports due under applicable instructions.</p> <p>Where the certification indicates that the subcontractor has not filed a compliance report due under applicable instructions, such subcontractor shall be required to submit a compliance report before the owner approves the subcontract or permits work to begin under the subcontract.</p> <p>For subcontracts over \$10,000, the Subcontractor agrees that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. "Segregated facilities," as used in this clause, means any waiting rooms, work areas, rest rooms 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, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, sexual orientation, gender identity or national origin because of written or oral policies or employee custom. The term does not include separate or single-user rest rooms or necessary dressing or sleeping areas provided to assure privacy between the sexes. The Subcontractor agrees that a breach of this clause is a violation of the Equal Opportunity clause in this contract. The Subcontractor shall include this clause in every subcontract and purchase order that is subject to the Equal Opportunity clause of this contract.</p> <p><i>Gender identity</i> and <i>Sexual Orientation</i> have the meaning given by the Department of Labor's Office of Federal Contract Compliance Programs, and are found at www.dol.gov/ofccp/LGBT/LGBT_Faq's.html.</p>	

Subcontractor's Certification

Name and Address of Subcontractor (include zip code)

1. Subcontractor has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
Yes___ No___

2. All required compliance reports were filed in connection with such contract or subcontract.
Yes___ No___

3. Subcontractor has filed all compliance reports due under applicable instructions, including Monthly Employment Utilization Report (257)
Yes___ No___ None Required___

4. Have you ever been or are you being considered for sanction due to violation of Executive Order 11246, as amended?
Yes___ No___

5. Bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained.

Name and Title of Signer (please type)

Signature

Date

XI. Certification of Proposed Subcontractor Regarding Section 3

Name of Subcontractor

Project Name

Project Number

The undersigned hereby certifies that:

- (a) Section 3 provisions are included in the Contract.
- (b) If bid exceeds \$100,000, a written Section 3 plan was prepared and submitted as part of the bid proceedings.

Name & Title of Signer (print or type)

Signature

Date

XII. Contractor's Certification Concerning Labor Standards and Prevailing Wage Requirements

TO (Appropriate Recipient):	DATE
C/O	PROJECT NUMBER (if any)
	PROJECT NAME

1. The undersigned, having executed a contract with _____ for the construction of the above identified project, acknowledges that:
 - (a) The Labor Standards provisions are included in the aforesaid contract;
 - (b) Prevailing wage requirements are followed, including paying the applicable Federal wage rate by labor classification.
 - (c) Correction of any infractions of the aforesaid conditions, including infractions by any of his subcontractors and any lower tier subcontractors, is his responsibility.

2. He certifies that:
 - (a) Neither he nor any firm, partnership or association in which he has substantial interest is designated as an ineligible contractor by the Comptroller of the United States pursuant to Section 5.6(b) of the Regulations of the Secretary of Labor., Part 5 (29 CFR, Part 5) or pursuant to Section 3(a) of the Davis-Bacon Act, as amended (40 U.S. C. 276a-2(a)).
 - (b) No part of the aforementioned contract has been or will be subcontracted to any subcontractor if such subcontractor or any firm, corporation, partnership or association in which such subcontractor has a substantial interest is designed as an ineligible contractor pursuant to any of the aforementioned regulatory or statutory provisions.

3. He agrees to obtain and forward to the aforementioned recipient within ten days after the execution of any subcontract, including those executed by his subcontractors and any lower tier subcontractors, a Subcontractor's Certification Concerning Labor Standards and Prevailing Wage Requirements executed by the subcontractors.

4. He certifies that:
 - (a) The legal name and the business address of the undersigned are:

(b) The undersigned is:

(1) A SINGLE PROPRIETORSHIP	(3) A CORPORATION ORGANIZED IN THE STATE OF:
(2) A PARTNERSHIP	(4) OTHER ORGANIZATION (Describe)

(c) The name, title and address of the owner, partners, or officers of the undersigned are:

NAME	TITLE	ADDRESS
_____	_____	_____
_____	_____	_____
_____	_____	_____

(d) The names and addresses of all other persons, both natural and corporate, having a substantial interest in the undersigned, and the nature of the interest are (if none, so state)

NAME	ADDRESS	NATURE OF INTENT
_____	_____	_____
_____	_____	_____
_____	_____	_____

(e) The names, addresses and trade classifications of all other building construction contractors in which undersigned ha a substantial interest (if none, so state):

NAME	ADDRESS	TRADE CLASSIFICATION
_____	_____	_____
_____	_____	_____
_____	_____	_____

Date _____ (Contractor)

By: _____

WARNING

U.S. Criminal Code, Section 1010, Title 18, U.S. C., provides in part: "Whoever makes, passes, utters, or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

XVI. General Conditions Table of Contents

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XVII. General Conditions Including Federal Labor Standards Provisions

1. Contract and Contractor Documents

The project to be constructed and pursuant to this Contract will be financed with assistance from the Kentucky Community Development Block Grant Program and is subject to all applicable Federal laws and regulations.

The plans, specifications and addenda, hereinafter enumerated in Paragraph 1 of the Supplemental General Conditions on page 30, shall form part of this Contract and the provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents is solely to facilitate reference to various provisions of the Contract Documents and in no way affect, limit or cast light on the interpretation of the provisions to which they refer.

2. Definitions

The following terms as used in this contract are respectively defined as follows:

- (a) "Contractor": A person, firm or corporation with whom the contract is made by the Owner.
- (b) "Subcontractor": A person, firm or corporation supplying labor and materials or only labor for work at the site of the project for, and under separate contract or agreement with, the Contractor.
- (c) "Work on (at) the project": Work to be performed at the location of the project, including the transportation of materials and supplies to or from the location of the project by employees of the Prime Contractor and any Subcontractor.

3. Additional Instructions and Detail Drawings

The Contractor will be furnished additional instructions and detail drawings as necessary to carry out the work included in the contract. The additional drawings and instructions thus supplied to the Contractor will coordinate with the Contract Documents and will be so prepared that they can be reasonably interpreted as part thereof. The Contractor shall carry out the work in accordance with the additional detail drawings and instructions. The Contractor and the Architect/Engineer will prepare jointly (a) a schedule, fixing the dates at which special detail drawings will be required, such drawings, if any, to be furnished by the Architect/Engineer in accordance with said schedule, and (b) a schedule fixing the respective dates for the submission of show drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment, and the completion of the various parts of the work; each such schedule to be subjected to change from time to time in accordance with the progress of the work.

4. Shop or Setting Drawings

The Contractor shall submit promptly to the Architect/Engineer copies of each shop or setting drawing prepared in accordance with the schedule predetermined as aforesaid. After examination of such drawings by the Architect/Engineer and the return thereof, the Contractor shall make such corrections to the drawings as have been indicated and shall furnish the Architect/Engineer with two

corrected copies. If requested by the Architect/Engineer the Contractor must furnish additional copies. Regardless of corrections made in or approval given to such drawings by the Architect/Engineer, the Contractor will nevertheless be responsible for the accuracy of such drawings and for their conformity to the plans and specifications, unless he notifies the Architect/Engineer in writing of any deviations at the time he furnishes such drawings.

5. Materials, Services and Facilities

- (d) It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature and all other services and facilities of every nature whatsoever necessary to execute, complete and deliver the work within the specified time.
- (e) Any work necessary to be performed after regular working hours, on Sunday or Legal Holidays, shall be performed without additional expense to the Owner.

6. Contractor's Title to Materials

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

7. Inspection and Testing of Materials

- (a) All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. The Owner will pay for all laboratory inspection service direct, and not as a part of the Subcontract.
- (b) Materials of construction, particularly those upon which the strength and durability of the structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for uses intended.

8. "Or Equal" Clause

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

9. Copyrights and Patents

- (a) The Contractor shall hold and save the Owner and its officers, agents, servants and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article or appliance

manufactured or used in the performance of the Contract, including its use by the Owner, unless otherwise specifically stipulated in the Contract Documents.

- (b) License or Royalty Fees: License and/or royalty fees for the use of a process which is authorized by the Owner of the project must be reasonable, and paid to the holder of the patent, or his authorized licensee, direct by the Owner and not by or through the Contractor.
- (c) If the contractor uses any design, device or materials covered by letters, patent or copyright, he shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. If is mutually agreed and understood, that without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any say involved in the work. The Contactor and/or his Sureties shall indemnify and save harmless the Owner of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this Contract, and shall indemnify the Owner for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.
- (d) Any copyrightable work resulting from this Agreement is available to the author for such, but the City and the Department of Local Government reserve the option for unlimited use and license to such work. Any discovery or invention shall be reported promptly to the City and the Department of Local Government for the determination as to whether patent protection should be sought and how the rights of any patent shall be disposed of and administered in order to protect the public interest.

10. Surveys, Permits and Regulations

Unless otherwise expressly provided for in the specifications, the Owner will furnish the Contractor all surveys necessary for the execution of the work.

The Contractor shall procure and pay all permits, licenses and approvals necessary for the execution of this Subcontract.

The Contractor shall comply with all laws, ordinances, rules, orders and regulations relating to performance of the work, the protection of adjacent property and the maintenance of passageways, guard fences or other protective facilities.

11. Contractor's Obligations

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this Contract, within the time herein specified, in accordance with the provisions of this Contract and said specifications and in accordance with the plans and drawings covered by this Contract any and all supplemental plans and drawings, and in accordance with the directions of the Contractor and/or Architect/Engineer as given from time to time during the progress of the work. He shall furnish, erect, maintain and remove such construction plant and such temporary works as may be required.

The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of the Contract and specifications, and shall do, carry on and complete the entire work to the satisfaction of the Contractor, Architect/Engineer and the Owner.

12. Weather Conditions

In the event of temporary suspension of work, or during inclement weather, or whenever the Architect/Engineer shall direct, the Contractor will, and will cause his Subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Architect/Engineer, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his Subcontractors to protect his work, such materials shall be removed and replaced at the expense of the Contractor.

13. Protection of Work and Property – Emergency

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Contract. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury unless such is caused directly by errors contained in the Contract or by the Owner, or his duly authorized representatives.

In case of an emergency which threatens loss or injury of property, and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Architect/Engineer, in a diligent manner. He shall notify the Architect/Engineer immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Architect/Engineer for approval.

Where the Contractor has not taken action but has notified the Architect/Engineer of an emergency threatening injury to persons or damage to the work or any adjoining property, he shall act as instructed or authorized by the Architect/Engineer.

The amount of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 17 of the General Conditions.

14. Inspection

The authorized representatives and agents of the Department of Local Government and the Department of Housing and Urban Development shall be permitted to inspect all work, materials, payrolls, and records of personnel, invoices of materials and other relevant data and records.

15. Reports, Records and Data

The Contractor shall submit to the Owner such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this Contract.

16. Superintendence by Contractor

At the site of the work the Contractor shall employ a construction superintendent or foreman who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Architect/Engineer and shall be one who can be continued in that capacity for the particular job involved unless he ceases to be on the Contractor's payroll.

17. Changes in Work

No changes in the work covered by the approved Contract Documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:

- (a) Unit bid prices previously approved.
- (b) An agreed lump sum.
- (c) The actual cost of
 - 1. Labor, including foremen.
 - 2. Materials entering permanently into the work.
 - 3. The ownership or rental cost of construction plant and equipment during the time of use on the extra work.
 - 4. Power and consumable supplies for the operation of power equipment.
 - 5. Insurance.
 - 6. Social Security and old age and unemployment contributions.

18. Extras

Without invalidating the Contract, the Owner may order extra work or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly, and the consent of the Surety being first obtained where necessary or desirable. All the work of the kind bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the Owner or its Architect/Engineer, acting officially for the Owner, and the price is stated in such order.

19. Time for Completion and Liquidated Damages

It is hereby understood and mutually agreed, by and between the Contractor and the Owner, that the date of beginning and the time for completion as specified in the contract of the work to be done hereunder are ESSENTIAL CONDITIONS of this Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the "Notice to Proceed".

The Contractor agrees that said work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as part consideration for the awarding of this Contract, to pay to the Owner the amount specified in the Contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the Contractor for completing the work.

The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which

the Owner would sustain and said amount shall be retained from time to time by the Owner from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this Contract and of the specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; provided, further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- (a) To any preference, priority or allocation order duly issued by the Government.
- (b) To unforeseeable cause beyond the control and without fault or negligence of the Contractor, including, but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another Contractor in performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes and severe weather.
- (c) To any delays of Subcontractors or suppliers occasioned by any of the causes specified in subsections (a) and (b) of this article.

Provided, further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the Contract, notify the Owner, in writing, of the causes of the delay, who shall ascertain in the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

20. Correction of Work

All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Architect/Engineer who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purposes for which they are used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected materials shall immediately be removed from the site. If, in the opinion of the Architect/Engineer, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the Contract Documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of the Architect/Engineer shall be equitable.

21. Subsurface Conditions Found Different

Should the Contractor encounter subsurface and/or latent conditions at the site materially differing from those shown on the plans or indicated in the specifications, he shall immediately give notice to the Architect/Engineer of such conditions before they are disturbed. The Architect/Engineer will thereupon promptly investigate the conditions, and if he finds that they materially differ from those shown on the plans or indicated in the specifications he will at once make such changes in the plans and/or specifications as he may find necessary, any increase or decrease of cost resulting from such changes to be adjusted in the manner provided in Paragraph 17 of the General Conditions.

22. Claims for Extra Cost

No claim for extra work or associated cost shall be allowed unless the same was done in pursuance of a written order of the Architect/Engineer approved by the Owner, as aforesaid and the claim presented with the first estimate after the changed or extra work is done. When work is performed under the terms of subparagraph 17(c) of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls and vouchers covering all items of cost and when requested by the Owner, give the Owner access to accounts relating thereto.

23. Right of Owner to Terminate Contract

In the event that any of the provisions of this Contract are violated by the Contractor, or by any of his Subcontractors, the Owner may serve written notice upon the Contractor and the Surety of its intention to terminate the Contract, such notices to contain the reasons for such intention to terminate the Contract, and unless within ten (10) days after the serving of such notice upon the Contractor, such violation or delay shall cease and satisfactory arrangement of correction be made, the Contract shall, upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the Surety and the Contractor and the Surety shall have the right to take over and perform the Contract; provided, however, that if the Surety does not commence performance thereof within ten (10) days from the date of the mailing to such Surety of notice of termination, the Owner may take over the work and prosecute the same to completion by contract or by force account for the account and at the expense of the Contractor and the Contractor and his Surety shall be liable to the Owner for any excess cost occasioned by the Owner thereby, and in such event the Owner may take possession of and utilize in completing the work, such materials, appliances and plant as may be on the site of the work and necessary therefore.

The Owner may terminate this Contract at any time by giving at least ten (10) days notice in writing to the Contractor. If the Contract is terminated by the Owner as provided herein, the Contractor will be paid for the time provided and expenses incurred up to the termination date. If the Contract is terminated due to the fault of the Contractor, the above paragraph relative to termination shall apply.

24. Construction Schedule and Periodic Estimates

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

25. Payments to the Contractor

- (a) Not later than the _____ day of each calendar month the Owner shall make a progress payment to the Contractor on the basis of a duly certified and approved estimate of the work performed during the preceding calendar month under this Contract, but to insure the proper performance of this Contract, the Owner shall retain

ten percent (10%) of the amount of each estimate until final completion and acceptance of all work covered by this Contract; provided, that the Contractor shall submit his estimate not later than the _____ day of the month; provided, further, that on completion and acceptance of each separate building, public work, or other division of the Contract, on which the price is stated separately in the Contract, payment may be made in full, including retained percentages thereon, less authorized deductions.

- (b) In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.
- (c) All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for the care and protection of materials and work upon which payments have been made or the restoration of any damaged work, or as a waiver of the right of the Owner to require the fulfillment of all of the terms of the Contract.
- (d) Owner's Right to Withhold Certain Amounts and Make Application Thereof: The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, materialmen and furnishers of machinery and parts thereof, equipment, power tools and all supplies, including commissary, incurred in the furtherance of the performance of this Contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have been paid, discharged or waived. If the Contractor fails to do so, then the Owner may, after having served written notice on the said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the Contractor shall be resumed, in accordance with the terms of this Contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety. In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner shall be considered as a payment made under the Contract by the Owner to the Contractor and the Owner shall not be liable to the Contractor for any such payments made in good faith.

26. Acceptance of Final Payment Constitutes Release

The acceptance by the Contractor of final payment shall be and shall operate as a release to the Owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work and for every act and neglect of the Owner and others relating to or arising out of this work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligations under this Contract or the performance and payment bond.

27. Payments by Contractor

The Contractor shall pay (a) for all transportation and utility services not later than the _____ day of the calendar month following that in which services are rendered, (b) for all materials, tools and other expendable equipment to the extent of ninety percent (90%) of the cost thereof, not later than the _____ day of the calendar month following that in which such materials, tools and equipment are delivered at the site of the project, and the balance of the cost thereof, not later than the _____ day

following the completion of that part of the work in or on which such materials, tools and equipment are incorporated or used, and (c) to each of his Subcontractors, not later than the ___ day following each payment to the Contractor, the respective amount allowed the Contractor on account of the work performed by his Subcontractors to the extent of each Subcontractor's interest therein.

28. Insurance

The Contractor shall not commence work under this Contract until he has obtained all the insurance required under this paragraph and such insurance has been approved by the Owner, nor shall the Contractor allow any Subcontractor to commence work on this subcontract until the insurance required of the Subcontractor has been so obtained and approved.

- (a) Compensation Insurance: The Contractor shall procure and shall maintain during the life of this Contract Workmen's Compensation Insurance as required by applicable State or territorial law for all of his employees to be engaged in work at the site of the project under this Contract, and, in case of any such work sublet, the Contractor shall require the Subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Workmen's Compensation Insurance. In case any class of employees engaged in hazardous work on the project under this Contract is not protected under the Workmen's Compensation Statute, the Contractor shall provide and shall cause each Subcontractor to provide adequate employer's liability insurance for the protection of such of his employees as are not otherwise protected.
- (b) Contractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall procure and maintain during the life of this Contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability Insurance in the amounts specified in Supplemental General Conditions.
- (c) Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall either (1) require each of his Subcontractors to procure and to maintain during the life of his subcontract Subcontractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance of the type and in the amounts specified in the Supplemental General Conditions specified in subparagraph (B) hereof, or (2) insure the activities of his policy, specified in subparagraph (b) hereof.
- (d) Scope of Insurance and Special Hazards: The insurance required under subparagraphs (b) and (c) hereof shall provide adequate protection for the Contractor and his Subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by him and, also against any of the special hazards which may be encountered in the performance of this Contract as enumerated in the Supplemental General Conditions.
- (e) Builder's Risk Insurance (Fire and Extended Coverage): Until the project is completed and accepted by the Owner, the Owner or Contractor (at the Owner's option as indicated in the Supplemental General Conditions. Form HUD-4238-N) is required to maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portion of the project for the benefit of the Owner, the Contractor, and Subcontractors as their interests may appear. The Contractor shall not include any costs for Builder's Risk Insurance (fire and extended coverage) premiums during construction unless the Contractor is required to provide such insurance, however, this

provision shall not release the Contractor from his obligation to complete, according to plans and specifications, the project covered by the Contract, and the Contractor and his Surety shall be obligated to full performance of the Contractor's undertaking.

- (f) Proof of Carriage of Insurance: The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by the Owner."

29. Contract Security

The Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the contract prices as security for the faithful performance of this Contract and also a payment bond in an amount not less than one hundred percent (100%) of the contract price or in a penal sum not less than that prescribed by State, territorial or local law, as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law.

30. Additional or Substitute Bond

If at any time the Owner for justifiable cause shall be or become dissatisfied with any Surety or Sureties, then upon the performance or payment bonds, the Contractor shall within five (5) days after notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other Surety or Sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new Surety or Sureties shall have furnished such an acceptable bond to the Owner.

31. Assignments

The Contractor shall not assign the whole or any part of this Contract or any moneys due or to become due hereunder without written consent of the Owner. In case the Contractor assigns all or any part of any moneys due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to the corporations of services rendered or materials supplied for the performance of the work called for in this contract.

32. Mutual Responsibility of Contracts

If, through acts of neglect on the part of the Contractor, any other Contractor or any Subcontractor shall suffer loss or damage on the work, the Contractor agrees to settle with such other Contractor or Subcontractor by agreement or arbitration if such other Contractor or Subcontractor will so settle. If such other Contractor or Subcontractor shall assert any claim against the Owner on account of any damage alleged to have been sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any such claim.

33. Separate Contracts

The Contractor shall coordinate his operations with those of other Contractors. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the work. The Contractor, including his Subcontractors, shall keep informed of the progress and the detail work of other Contractors and shall notify the Architect/Engineer immediately of lack of progress or defective workmanship on the part of other Contractors. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by him of the status of the work as being satisfactory for proper coordination with his own work.

34. Subcontracting

The Contractor may utilize the services of specialty Subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty Subcontractors.

The Contractor shall not award any work to any Subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the Subcontractor, which statement shall contain such information as the Owner may require.

The Contractor shall be as fully responsible to the Owner for the acts and omissions of his Subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the General Conditions and other Contract Documents insofar as applicable to the work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.

Nothing contained in this Contract shall create any contractual relation between any Subcontractor and the Owner.

35. Architect/Engineer's Authority

The Architect/Engineer shall give all orders and directions contemplated under this contract and specifications, relative to the execution of the work. The Architect/Engineer shall determine the amount, quality, acceptability and fitness of the several kinds of work and materials which are to be paid for under this Contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Architect/Engineer's estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said Contract and specifications, the determination or decision of the Architect/Engineer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this Contract affected in any manner or to any extent by such question.

The Architect/Engineer shall decide the meaning and intent of any portion of the specifications and of any plans or drawings where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this Contract and other Contractors performing work for the Owner shall be adjusted and determined by the Architect/Engineer.

36. Stated Allowances

The Contractor shall include in his proposal the cash allowances stated in the Supplemental General Conditions. The Contractor shall purchase the "Allowed Materials" as directed by the Owner on the basis of the lowest and best bid of at least three competitive bids. If the actual price for purchasing the "Allowed Materials" is more or less than the "Cash Allowance," the contract price shall be adjusted accordingly. The adjustment in contract price shall be made on the basis of the purchase price without additional charges for overhead, profit, insurance or any other incidental expenses. The cost of installation of the "Allowed Materials" shall be included in the applicable sections of the Contract Specifications covering this work.

37. Use of Premises and Removal of Debris

The Contractor expressly undertakes at his own expense:

- (a) To take every precaution against injuries to persons or damage to property.
- (b) To store his apparatus, materials, supplies and equipment in such orderly fashion at the site of the work as will not unduly interfere with the progress of his work or the work of any other Contractors.
- (c) To place upon the work or any part thereof only such loads as are consistent with the safety of that portion of the work.
- (d) To clean up frequently all refuse, rubbish, scrap materials and debris caused by his operations, to the end that at all times the site of the work shall present a neat, orderly and workmanlike appearance.
- (e) Before final payment to remove all surplus material, false-work, temporary structures, including foundations thereof, plant of any description and debris of every nature resulting from his operations, and to put the site in a neat, orderly condition.
- (f) To affect all cutting, fitting or patching of his work required to make the same to conform to the plans and specifications and, except with the consent of the Architect/Engineer, not to cut or otherwise alter the work of any other Contractor.

38. Quantities of Estimate

Wherever the estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of the documents including the proposal, they are given for use in comparing bids and the right is especially reserved except as herein otherwise specifically limited, to increase or diminish them as may be deemed reasonably necessary or desirable by the Owner to complete the work contemplated by this Contract, and such increase or diminution shall in no way vitiate this Contract, nor shall any such increase or diminution give cause for claims or liability for damages.

39. Lands and Rights-of-Way

Prior to the start of construction, the Owner shall obtain lands and rights-of-way necessary for the carrying out and completion of work to be performed under this Contract. All acquisitions of real property including temporary and permanent easements must follow the Uniform Relocation Act requirements.

40. General Guaranty

Neither the final certificate of payment nor any provision in the Contract Documents, nor partial or entire occupancy of the premises by the Owner, shall constitute an acceptance of work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any

express warranties or responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work and pay for any damage to other work resulting therefrom, which shall appear within a period of one year from the date of final acceptance of the work unless a longer period is specified. The Owner will give notice of observed defects with reasonable promptness.

41. Conflicting Conditions

Any provisions in any of the Contract Documents which may be in conflict or inconsistent with any of the paragraphs in these General Conditions shall be void to the extent of such conflict or inconsistency.

42. Notice and Service Thereof

Any notice to any Contractor from the Owner relative to any part of this Contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to the said Contractor at his last given address or delivered in person to the said Contractor or his authorized representative on the work.

43. Provisions Required by Law Deemed Inserted

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

44. Protection of Lives and Health

"The Contractor shall exercise proper precaution at all times for the protection of persons and property and shall be responsible for all damages to persons or property, either on or off the site, which occur as a result of his prosecution of the work. The safety provisions of applicable laws and building and construction codes, in addition to specific safety and health regulations described by Chapter XIII, Bureau of Labor Standards, Department of Labor, Part 1518, Safety and Health Regulations for Construction, as outlined in the Federal Register, Volume 36, No.75, Saturday, April 17, 1971. Title 29 - Labor shall be observed and the Contractor shall take or cause to be taken, such additional safety and health measures as the Contracting Authority may determine to be reasonably necessary."

45. Subcontracts

"The Contractor will insert in any subcontracts the Federal Labor Standards Provision contained herein and such other clauses as the Department of Housing and Urban Development may, by instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made."

46. Conflict of Interest

No person who is an employee, agent, consultant, officer or elected or appointed official of recipient or subrecipient who exercises or has exercised any functions or responsibilities with respect to KCDBG activities or who is in a position to participate in a decision making process or gain inside information with regard to such activities may obtain a financial interest or benefit from a KCDBG activity, have an interest or benefit from the activity or have an interest in any contract, subcontract or agreement with respect to a CDBG activity or its proceeds, for themselves or those with whom they have family or business ties. The prohibition applies during their tenure and for one year thereafter.

47. Interest of Member of or Delegate to Congress

No member of or delegate to Congress or Resident Commissioner shall be admitted to any share or part of this Contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

48. Other Prohibited Interests

No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept or approve, or to take part in negotiating, making, accepting or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part thereof. No officer, employee, architect, attorney, engineer or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract or any other contract pertaining to the project.

49. Use and Occupancy Prior to Acceptance by Owner

The Contractor agrees to use and occupancy of a portion or unit of the project before formal acceptance by the Owner, provided the Owner:

- Secures written consent of the Contractor except in the event, in the opinion of the Architect/Engineer, the Contractor is chargeable with unwarranted delay in final cleanup of punch list items or other Contract requirements. Secures endorsement from the insurance carrier and consent of the surety permitting occupancy of the building or use of the project during the remaining period of construction.
- Or**
- When the project consists of more than one building, and one of the buildings is occupied, secures permanent fire and extended coverage insurance, including a permit to complete construction. Consent of Surety must also be obtained.

50. Photographs of the Project

If required by the Owner, the Contractor shall furnish photographs of the project, in the quantities and as described in the Supplemental General Conditions.

51. Suspension of Work

Should the Owner be prevented or enjoined from proceeding with work either before or after the start of construction by reason of any litigation or other reason beyond the control of the Owner, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay; but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

52. Access to Records

The Contractor shall maintain accounts and project records, including personnel, property and financial records, adequate to identify and account for all costs pertaining to the Contract and such other records as may be deemed necessary by the City/County to assure proper accounting for all project funds, both CDBG and non-CDBG shares. These records will be made available to the City, the Department of Local Government, Commonwealth of Kentucky Finance & Administration Cabinet, Commonwealth of Kentucky Auditor of Public Audits, Commonwealth of Kentucky Legislative Research Commission, U.S. Department of Housing and Urban Development, the U. S.

Department of Labor, and the Comptroller General of the United States, or any of their duly authorized representatives. These parties shall have access to any books, documents, papers and records of the Contractor which are directly pertinent to the project, for the purpose of making audit, examination, excerpts, and transcriptions. All records shall be maintained for five years after project closeout.

53. Federal Labor Standards Provisions (HUD-4010, 2-84)

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A.1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1 (b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321 shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

1. The work to be performed by the classification requested is not performed by a classification in the wage determination;
2. The classification is utilized in the area by the construction industry; and
3. The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage

rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U. S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of the paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. **Withholding.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal Contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective

employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. **Payrolls and Basic Records.**

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project). Such records shall contain the name, address and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1 (b)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1 (b)(2)(B) of Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U. S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

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

1. That the payroll for the payroll period contains the information required to be maintained under 29 CFR Part 5.5(a)(3)(i) and that such information is correct and complete;
2. That each laborer or mechanic (including each helper 1 apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3.
3. That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

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

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

(iii) The contractor or subcontractor shall make the records required under paragraph A.3(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant 20 CFR Part 5.12.

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

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U. S. Department of Labor, Employment and Training Administration. The

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

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

5. Compliance with Copeland Act Requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.
6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clause contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may be appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.
7. Contract Termination; Debarment. A breach of contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and subcontractor as provided in 29 CFR Part 5.12.
8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
9. Disputes Concerning Labor Standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U. S. Department of Labor, or the employees or their representatives.
10. (i) Certification of Eligibility .By entering into this contract, the contractor certified that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis- Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C.1001. Additionally, U. S. Criminal Code, Section 1010, Title 18, U.S.C., "Federal Housing Administration transactions," provides in part: "Whoever, for the purpose of ...influencing in any way the action of such Administration ...makes, utters, or publishes any statement, knowing the same to be false ...shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under Contract to his employer.

B. **Contract Work Hours and Safety Standards Act (over \$100,000).** As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

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

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

(3) Withholding For Unpaid Wages and Liquidated Damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

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

lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

- (1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
- (2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly Part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).
- (3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

54. Anti-Kickback Act

Attachment to Federal Labor Standards Provisions, So-Called "Anti-Kickback Act" and Regulations Promulgated Pursuant Thereto by the Secretary of Labor. United States Department of Labor. Title 18, U.S.C., Section 874 (HUD-4010, 2-76) (Replaces section 1 of the Act of June 13, 1934 (48 Stat. 948, 40 U.S.C., Section 276B) pursuant to the Act of June 25, 1948, 62 Stat. 862).

Kickbacks from Public Works Employees

Whoever, by force, intimidation, or threat of procuring dismissal from employment, or by any other manner whatsoever induces any person employed in the construction, prosecution, completion or repair of any public building, public work, or building or work financed in whole or in part by loans or grants from the United States, to give up any part of the compensation to which he is entitled under his contract of employment, shall be fined not more than \$5,000 or imprisoned not more than five years, or both.

Section 2 of the Act of June 13, 1934, as amended (48 Stat. 948, 62 Stat. 862, 63 Stat. 108, Stat. 967, 40 U.S.C., section 276c).

The Secretary of Labor shall make reasonable regulations for contractors and subcontractors engaged in the construction, prosecution, completion or repair of buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States, including a provision that each contractor shall furnish weekly a statement with respect to the wages paid each employee during the preceding week. Section 1001 of Title 18 (United States Code) shall apply to such statements.

Pursuant to the aforesaid Anti-Kickback Act, the Secretary of Labor, United States Department of Labor, has promulgated the regulations hereinafter set forth, which regulations are found in Title 29, Subtitle A, Code of Federal Regulations, Part 3. The term "this part", as used in the regulations hereinafter set forth, refers to Part 3 last above mentioned. Said regulations are as follows.

Title 29 – Labor; Subtitle A – Office of the Secretary of Labor, Part 3 – Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in part by loans or grants from the United States.

Section 3.1 – Purpose and scope

This part prescribes "anti-kickback" regulations under section 2 of the Act of June 13, 1934, as amended (40 U.S.C. 276c), popularly known as the Copeland Act. This part applies to any contract which is subject to Federal wage standards and which is for the construction, prosecution, completion, or repair of public buildings, public works or buildings or works financed in whole or in part by loans or grants from the United States. The part is intended to aid in the enforcement of the minimum wage provisions of the Davis-Bacon Act and the various statutes dealing with Federally-assisted construction that contain similar minimum wage provisions, including those provisions which are not subject to Reorganization Plan No.14 (e.g., the College Housing Act of 1950, the Federal Water Pollution Control Act, and the Housing Act of 1959), and in the enforcement of the overtime provisions of the Contract Work Hours Standards Act whenever they are applicable to construction work. The part details the obligation of contractors and subcontractors relative to the weekly submission of statements regarding the wages paid on work covered thereby; sets forth the circumstances and procedures governing the making of payroll deductions from the wages of those employed on such work; and delineates the methods of payment permissible on such work.

Section 3.2 – Definitions.

As used in the regulations in this part:

- (a) The terms "building" or "work" generally include construction activity as distinguished from manufacturing, furnishing of materials, or servicing and maintenance work. The terms include, without limitation, buildings, structures, and improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, and canals; dredging, shoring, scaffolding, drilling, blasting, excavating, clearing, and landscaping. Unless conducted in connection with and at the site of such a building or work as is described in the foregoing sentence, the manufacture or furnishing of materials, articles, supplies, or equipment (whether or not a Federal or State agency acquires title to such materials, articles, supplies, or equipment during the course of the manufacture or furnishing, or owns the materials from which they are manufactured or furnished) is not a "building" or "work" within the meaning of the regulations in this part.
- (b) The terms "construction", "completion," or "repair" mean all types of work done on a particular building or work at the site thereof, including, without limitation, altering, remodeling, painting and decorating, the transporting of materials and supplies to or from the building or work by the employees of the construction contractor or construction subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the building or work, by persons employed at the site by the contractor or subcontractor.
- (c) The terms "public building" or "public work" include building or work for whose construction, prosecution, completion, or repair, as defined above, a Federal agency is a contracting party, regardless of whether title thereof is in a Federal agency.
- (d) The term "building or work financed in whole or in part by loans or grants from the United States" includes building or work for whose construction, prosecution, completion, or repair, as defined above, payment or part payment is made directly or indirectly from funds provided by loans or grants by a Federal agency. The term does not include building or work for which Federal assistance is limited solely to loan guarantees or insurance.

- (e) Every person paid by a contractor or subcontractor in any manner for his labor in the construction, prosecution, completion, or repair of a public building or public work or work financed in whole or in part by loans or grants from the United States is "employed" and receiving "wages," regardless of contractual relationship alleged to exist between him and the real employer.
- (f) The term "any affiliated person" includes a spouse, child, parent, or other close relative of the contractor or subcontractor; a partner or officer of the contractor or subcontractor; a corporation closely connected with the contractor or subcontractor as parent, subsidiary or otherwise, and an officer or agent of such corporation.
- (g) The term "Federal agency" means the United States, the District of Columbia, and all executive departments, independent establishments, administrative agencies, and instrumentalities of the United States and of the District of Columbia, including corporations, all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or any of the foregoing departments, establishments, agencies and instrumentalities.

Section 3.3 – Weekly statement with respect to payment of wages

- (a) As used in this section, the term "employee" shall not apply to persons in classifications higher than that of laborer or mechanic and those who are the immediate supervisors of such employees.
- (b) Each contractor or subcontractor engaged in the construction, prosecution, completion, or repair of any public building or public work, or building or work financed in whole or in part by loans or grants from the United States, shall furnish each week a statement with respect to the wages paid each of its employees engaged on work covered by 29 CFR Parts 3 and 5 during the preceding weekly payroll period. This statement shall be executed by the contractor or subcontractor or by an authorized officer or employee of the contractor or subcontractor who supervises the payment of wages and shall be on form WH 348, "Statement of Compliance," or on an identical form on the back of WH 347, "Payroll (For Contractors Optional Use)" or on any form with identical wording. Sample copies of WH 347 and WH 348 may be obtained from the Government contracting or sponsoring agency, and copies of these forms may be purchased at the Government Printing Office.
- (c) The requirements of this section shall not apply to any contract of \$2,000 or less.
- (d) Upon a written finding by the head of a Federal agency, the Secretary of Labor may provide reasonable limitations, variations, tolerances and exemptions from the requirements of this section subject to such conditions as the Secretary of Labor may specify.

(29 F.R. 95, Jan. 4 1964, as amended at 33 FR 10186, July 17, 1968)

Section 3.4 – Submission of weekly statements and the preservation and inspection of weekly payroll records.

- (a) Each weekly statement required under SS 3.3 shall be delivered by the contractor or subcontractor within seven days after the regular payment date of the payroll period, to a representative of a Federal or State agency in charge at the site of the building or work, or, if there is no representative of a Federal or State agency at the site of the building or work, the statement shall be mailed by the contractor or subcontractor, within such time, to a Federal or State agency contracting for or financing the building or work. After such examination and check as may be made, such statement, or a copy thereof, shall be kept available, or shall be transmitted together with a report of any violation, in accordance with applicable procedures prescribed by the United States Department of Labor.

- (b) Each contractor or subcontractor shall preserve his weekly payroll records for a period of three years from date of completion of the contract. The payroll records shall set out accurately and completely the name and address of each laborer and mechanic, his correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Such payroll records shall be made available at all times for inspection by the contracting officer or his authorized representative, and by authorized representatives of the Department of Labor.

Section 3.5 – Payroll deductions permissible without application to or approval of the Secretary of Labor.

Deductions made under the circumstances or in the situations described in the paragraphs of this section may be made without application to and approval of the Secretary of Labor.

- (a) Any deduction made in compliance with the requirements of Federal, State or local law, such as Federal or State withholding income taxes and Federal social security taxes.
- (b) Any deduction of sums previously paid to the employee as a bona fide prepayment of wages when such prepayment is made without discount or interest. A "bona fide prepayment of wages" is considered to have been made only when cash or its equivalent has been advanced to the person employed in such manner as to give him complete freedom of disposition of the advanced funds.
- (c) Any deduction of amounts required by court process to be paid to another, unless the deduction is in favor of the contractor, subcontractor or any affiliated person, or when collusion or collaboration exists.
- (d) Any deduction constituting a contribution on behalf of the person employed to funds established by the employer or representatives of employees, or both, for the purpose of providing *either* from principal or income, or both, medical or hospital care, pensions or annuities on retirement, death benefits, compensation for injuries, illness, accidents, sickness, or disability, or for insurance to provide any of the foregoing, or unemployment benefits, vacation pay, savings accounts, or similar payments for the benefit of employees, their families and dependents: Provided, however, That the following standards are met: (1) The deduction is not otherwise prohibited by law; (2) it is either: (i) Voluntarily consented to by the employee in writing and in advance of the period in which the work is to be done and such consent is not a condition either for the obtaining of or for the continuation of employment, or (ii) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; (3) no profit or other benefit is otherwise obtained, directly or indirectly, by the contractor or subcontractor or any affiliated person in the form of commission, dividend, or otherwise; and (4) the deductions shall serve the convenience and interest of the employee.
- (e) Any deduction contribution toward the purchase of United States Defense Stamps and Bonds when voluntarily authorized by the employee.
- (f) Any deduction requested by the employee to enable him to repay loans to or to purchase shares in credit unions organized and operated in accordance with Federal and State credit union statutes.
- (g) Any deduction voluntarily authorized by the employee for the making of contributions to governmental or quasi-governmental agencies, such as the American Red Cross.
- (h) Any deduction voluntarily authorized by the employee for the making of contributions to Community Chests, United Givers Funds, and similar charitable organizations.
- (i) Any deductions to pay regular union initiation fees and membership dues, not including fines or special assessments: Provided, however, that a collective bargaining agreement between the contractor or subcontractor and representatives of its employees provides for such deductions and the deductions are not otherwise prohibited by law.
- (j) Any deduction not more than for the "reasonable cost" of board, lodging, or other facilities meeting the requirements of section 3(m) of the Fair Labor Standards Act of 1938, as

amended, and Part 431 of this title. When such a deduction is made the additional records required under SS 516.27(a) of this title shall be kept.

Section 3.6 – Payroll deductions permissible with the approval of the Secretary of Labor.

Any contractor or subcontractor may apply to the Secretary of Labor for permission to make any deduction not permitted under SS 3.5. The Secretary may grant permissions whenever he finds that:

- (a) The contractor, subcontractor, or any affiliated person does not make a profit or benefit directly or indirectly from the deduction either in the form of a commission, dividend, or otherwise;
- (b) The deduction is not otherwise prohibited by law;
- (c) The deduction is either (1) voluntarily consented to by the employee in writing and in advance of the period in which the work to be done, and such consent is not a condition either for the obtaining of employment or its continuance, or (2) provided for in a bona fide collective bargaining agreement between the contractor or subcontractor and representatives of its employees; and
- (d) The deduction serves the convenience and interest of the employee.

Section 3.7 – Applications for the approval of the Secretary of Labor.

Any application for the making of payroll deductions under SS 3.6 shall comply with the requirements prescribed in the following paragraphs of this section:

- (a) The application shall be in writing and shall be addressed to the Secretary of Labor.
- (b) The application shall identify the contract or contracts under which the work in question is to be performed. Permission will be given for deductions only on specific, identified contracts, except upon a showing of exceptional circumstances.
- (c) The application shall state affirmatively that there is compliance with the standards set forth in the provisions of SS 3.6. The affirmation shall be accompanied by a full statement of the facts indicating such compliance.
- (d) The application shall include a description of the proposed deduction, the purpose to be served thereby, and the classes of laborers or mechanics from whose wages the proposed deduction would be made.
- (e) The application shall state the name and business of any third person to whom any funds obtained from the proposed deductions are to be transmitted and the affiliation of such person, if any, with the applicant.

Section 3.8 – Action by the Secretary of Labor upon applications.

The Secretary of Labor shall decide whether or not the requested deduction is permissible under provisions of SS 3.6; and shall notify the applicant in writing of his decision.

Section 3.9 – Prohibited payroll deductions.

Deductions not elsewhere provided for by this part and which are not found to be permissible under SS 3.6 are prohibited.

Section 3.10 – Methods of payment of wages.

The payment of wages shall be by cash, negotiable instruments payable on demand, or the additional forms of compensation for which deductions are permissible under this part. No other methods of payment shall be recognized on work subject to the Copeland Act.

Section 3.11 – Regulations part of contract.

All contracts made with respect to the construction, prosecution, completion, or repair of any public building or public work or building or work financed in whole or in part by loans or grants from the United States covered by the regulations in this part shall expressly bind the contractor or subcontractor to comply with such of the regulations in this part as may be applicable. In this regard, see SS 5.5(a) of this subtitle.

XVIII. Supplemental General Conditions Including Equal Opportunity Provisions

1. Enumeration of Plans, Specifications and Addenda
2. Stated Allowances *(Not Applicable to this Contract)*
3. Special Hazards
4. Contractor's and Subcontractor's Public Liability, Vehicle Liability and Property Damage Insurance
5. Photographs of Project
6. Schedule of Occupational Classifications and Minimum Hourly Wage Rates
7. Builder's Risk Insurance *(Not Applicable to this Contract)*
8. Special Equal Opportunity Provisions
9. Certification of Compliance with Air and Water Acts
10. Special Conditions Pertaining to Hazards, Safety Standards and Accident Prevention
11. Energy Efficiency
12. Access to Records
13. Wage Rate Determination(s)
14. Contract Work Hours and Safety Standards Act

1. Enumeration of Plans, Specifications and Addenda

Following are the Plans, Specifications and Addenda which form a part of this Contract, as set forth in paragraph 1 of the General Conditions, "Contract and Contract Documents":

DRAWINGS

General Construction: See Appendix of Contract Documents

Heating and Ventilating: Not Applicable

Plumbing: Not Applicable

Electrical: Not Applicable

SPECIFICATIONS:

General Construction: See Table of Contents of Contract Documents

Heating and Ventilating: Not Applicable

Plumbing: Not Applicable

Electrical: Not Applicable

ADDENDA:

No. _____ Date _____ No. _____ Date _____

No. _____ Date _____ No. _____ Date _____

2. Stated Allowances

Pursuant to Paragraph 36 of the General Conditions, the Contractor shall include the following cash allowances in his proposal

(a) For _____ (Page _____ of Specifications) \$ _____

(b) For _____ (Page _____ of Specifications) \$ _____

(c) For _____ (Page _____ of Specifications) \$ _____

(d) For _____ (Page _____ of Specifications) \$ _____

(e) For _____ (Page _____ of Specifications) \$ _____

(f) For _____ (Page _____ of Specifications) \$ _____

3. Special Hazards

The Contractor's and his Subcontractor's Public Liability and Property Damage Insurance shall provide adequate protection against the following special hazards:

4. Contractor's and Subcontractor's Public Liability, Vehicle Liability and Property Damage

Insurance

The Limits of Liability for Insurance required are listed in Detail within the Supplementary Conditions (See Table of Contents of Contract Documents)

The Contractor shall either (1) require each of his Subcontractors to procure and to maintain during the life of his subcontract, Subcontractor's Public Liability and Property Damage Insurance of the type and in the same amounts as specified in the preceding paragraph, or (2) insure the activities of his Subcontractors in his own policy.

5. Photographs of Project

As provided in paragraph 50 of General Conditions, the Contractor will furnish photographs in the number, type and stage as enumerated below:

6. Schedule of Occupational Classifications and Minimum Hourly Wage Rate as required under paragraph 53 of the General Conditions.

(See Wage Rate Determinations in the Bidding Documents Section)

7. Builder's Risk Insurance

As provided in the General Conditions, paragraph 28(e), the Contractor ~~will~~/will not maintain Builder's Risk Insurance (fire and extended coverage) on a 100 percent completed value basis on the insurable portions of the project for the benefit of the Owner, the Contractor and all Subcontractors, as their interests may appear.

8. Special Equal Opportunity Provisions

- A. 3-Paragraph Equal Opportunity Clause for Activities and Contracts Not subject to Executive Order 11246, as Amended (applicable to Federally assisted construction contracts and related subcontracts \$10,000 and under)

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

1. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

2. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by contracting officer setting forth the provisions of this nondiscrimination clause. The Contractor shall state that all qualified applicants will receive consideration for employment without regard to race, color, religion, or sex or national origin.
3. Contractors shall incorporate forgoing requirements in all subcontracts.

B. Executive Order 11246 (contracts/subcontracts above \$10,000)

1. Section 202 Equal Opportunity Clause

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

- a. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
- b. The contractor will, in all solicitations or advancements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- c. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
- d. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- e. The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- f. The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- g. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for

further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

h. The contractor will include the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the contractor may request the United States to enter into such litigation to protect the interests of the United States." [Sec. 202 amended by EO 11375 of Oct. 13, 1967, 32 FR 14303, 3 CFR, 1966-1970 Comp., p. 684, EO 12086 of Oct. 5, 1978, 43 FR 46501, 3 CFR, 1978 Comp., p. 230, EO 13665 of April 8, 2014, 79 FR 20749, EO 13672 of July 21, 2014, 79 FR 42971]

2. Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246) (applicable to contract/subcontracts exceeding \$10,000)

- a. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Affirmative Action Compliance Requirements for Construction clause", set forth herein.
- b. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority <u>Participation</u> 3.5%	Goals for Female <u>Participation</u> 6.9%
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These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) performed in the covered area. If the Contractor performs construction work in a geographic area located outside of the covered area, it shall apply the goals established for such geographic area where the work is actually performed. Goals are published periodically in the *Federal Register* in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity Clause, (2) specific affirmative action obligations required by the clause entitled *Affirmative Action Compliance Requirements for Construction*, and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the Contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

- c. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
 - d. As used in this notice, and in any contract resulting from this solicitation, the "covered area" is _____(insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any).
3. Affirmative Action Compliance Requirements for Construction (Executive Order 11246)
- a. As used in these specifications:
 - (1) "Covered area" means the geographical area described in solicitation from which this Contract resulted.
 - (2) "Deputy Assistant Secretary" means the Deputy Assistant Secretary for the Office of Federal Contract Compliance Program, United States Department of Labor, or a designee.
 - (3) "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
 - (4) *Gender Identity* has the meaning given by the Department of Labor's Office of Federal Contract Compliance Programs, and is found at www.dol.gov/ofccp/LGBT/LGBT_Faq's.html.
 - (5) *Sexual Orientation* has the meaning given by the Department of Labor's Office of Federal Contract Compliance Programs, and is found at www.dol.gov/ofccp/LGBT/LGBT_Faq's.html.
 - (6) "Minority" includes:
 - (a) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin).
 - (b) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race).
 - (c) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent or the Pacific Islands).
 - (d) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

- (7) Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 this clause and the Notice containing the goals for minority and female participation which is stated in the solicitations from which this Contract resulted.
- (8) If the Contractor is participating (pursuant to 41 CFR 60-4) in a Hometown Plan approved by the U. S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the plan area (including goals) shall comply with that plan for those trades which have unions participating in the plan. Contractors must be able to demonstrate their participation in, and compliance with, the provisions of the plan. Each Contractor or Subcontractor participating in an approved plan is also required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any Contractor's or Subcontractor's failure to take good faith efforts to achieve the plan's goals.
- (9) The Contractor shall implement the specific affirmative action standards provided in paragraphs 10a through p of this clause. The goals stated in the solicitation from which this Contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization that the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors- performing contracts in geographical areas where they do not have a Federal or Federally-assisted construction contract shall apply the minority and female goals established for the geographic area where the contract is being performed. The Contractor is expected to make substantially uniform progress toward its goals in each craft.
- (10) Neither the terms and conditions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under this clause, Executive Order 11246, as amended, or the regulations thereunder.
- (11) In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U. S. Department of Labor.
- (12) The Contractor shall take affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's

compliance with this clause shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

- (a) Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, if possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that foremen, superintendents and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at these sites or facilities.
- (b) Establish and maintain a current list of sources for minority and female recruitment. Provide written notification to minority and female recruitment sources and community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
- (c) Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant, referrals of minorities or females from unions, recruitment sources, or community organizations and the action taken with respect to each individual. If an individual was sent to the union hiring hall for referral and not referred back to the Contractor by the union or, if referred back, not employed by the Contractor, this shall be documented in the file, along with whatever additional actions the Contractor may have taken.
- (d) Immediately notify the Deputy Assistant Secretary when the union or unions with which the Contractor has a collective bargaining agreement has not referred back to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- (e) Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under subparagraph 10b of this clause.
- (f) Disseminate the Contractor's EEO policy by-

- (i) Providing notice of the policy to unions and to training, recruitment and outreach programs, and requesting their cooperation in assisting the Contractor in meeting its EEO obligations;
 - (ii) Including the policy in any policy manual and collective bargaining agreements;
 - (iii) Publicizing the policy in the company newspaper, annual report, etc.;
 - (iv) Review the policy with all management personnel at least once a year; and
 - (v) Posting the policy on bulletin boards accessible to all employees at each location where construction work is performed
- (g) Review, at least annually, the contractor's Equal Employment Opportunity policy and affirmative action obligations with all employees having responsibility for hiring, assignment, layoff, termination or other employment decisions. Conduct review of this policy with all onsite supervisory personnel before initiating construction work at a job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.
- (h) Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media. Provide written notification to and discuss the policy with other Contractors and Subcontractors with which the Contractor does or anticipates doing business.
- (i) Direct recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month before the date for the acceptance of applications for apprenticeship or training by any recruitment source, send written notification to organizations such as the above, describing the openings, screening procedures and tests to be used in the selection process.
- (j) Encourage present minority and female employees to recruit minority persons and women. Where reasonable, provide after school, summer and vacation employment to

minority and female youth both on the site and in other areas of a Contractor's work force.

- (k) Validate all tests and other selection requirements required under 41 CFR Part 60-3.
 - (l) Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities. Encourage these employees to seek or to prepare for, through appropriate training, etc., opportunities for promotion.
 - (m) Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the Contractor's obligations under these specifications are being carried out.
 - (n) Ensure that all facilities and company activities are non-segregated except that separate or single-use restrooms and necessary dressing or sleeping areas shall be provided to assure privacy between the sexes.
 - (o) Maintain a record of solicitations for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - (p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's Equal Employment Opportunity policy and affirmative action obligations.
- (13) The Contractor is encouraged to participate in voluntary associations that may assist in fulfilling one or more of the affirmative action obligations contained in subparagraphs 10(a) through (p) of this clause. The efforts of a contractor association, joint contractor-union, contractor- community, or similar group of which the Contractor is a member and participant, may be asserted as fulfilling one or more of its obligations under 10(a) through (p) of this clause provided that the Contractor-
- (a) Actively participates in the group;
 - (b) Makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry;
 - (c) Ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation;
 - (d) Makes a good faith effort to meet its individual goals and timetables;

- (e) Can provide access to documentation that demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.
- (14) A single goal for minorities and a separate single goal for women shall be established. The Contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of Executive Order 11246, as amended, if a particular group is employed in a substantially disparate manner.).
- (15) The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.
- (16) The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts under Executive Order 11246, as amended.
- (17) The Contractor shall carry out such sanctions and penalties for violation of this clause and of the Equal Employment Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered under Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any failure to carry out such sanctions and penalties shall be in violation of this clause and Executive Order 11246, as amended.
- (18) The Contractor, in fulfilling its obligations under this clause, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 10 of this clause, so as to achieve maximum results from its efforts to ensure equal employment opportunity .If the Contractor fails to comply with the requirements of Executive Order 11246 as amended, the implementing regulations or these specifications, the Deputy Assistant Director shall proceed in accordance with 41 CFR 60-4.8.
- (19) The Contractor shall designate a responsible official to-
 - (a) monitor all employment related activity to ensure that the Contractor's Equal Employment policy is being carried out;
 - (b) to submit reports as may be required by the Government and;
 - (c) Keep records that shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per

week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; *however*, to the degree that existing records satisfy this requirement, separate records are not required to be maintained.

(20) Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

C. Certification of Nonsegregated Facilities (over \$10,000)

By the submission of this bid, the bidder, offeror, applicant or subcontractor certifies that s/he does not maintain or provide for his/her employees any segregated facility at any of his/her establishments, and that s/he does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained. S/he certifies further that s/he will not maintain or provide for employees any segregated facilities at any of his/her establishments, and s/he will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained. The bidder, offeror, applicant or subcontractor agrees that a breach of this certification is a violation of the Equal Employment Opportunity Clause of this Contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms 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, color, religion, sex, sexual orientation, gender identity or national origin, because of habit, local custom or otherwise. The term does not include separate or single-user restrooms or necessary dressing or sleeping areas provided to assure privacy between the sexes. S/he further agrees that (except where he/she has obtained identical certifications. from proposed Subcontractors for specific time periods) he/she will obtain identical certification 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 he/she will retain such certifications in his/her files; and that he/she will forward the following notice to such proposed Subcontractors (except where proposed Subcontractors have submitted identical certifications for specific time periods).

D. Title VI Clause, Civil Rights Act of 1964

Under Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

E. Section 109 Clause, Housing and Community Development Act of 1974

No person in the United States shall on the grounds of race, color national origin or sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity funded in whole or in part with funds made available under this title.

F. "Section 3" Compliance in the Provision of Training, Employment and Business Opportunities (Over \$100,000)

1. The work to be performed under this Contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701 u. Section 3 requires that to the greatest extent feasible, opportunities for training and employment be given low and very low income residents of the project area (including public housing residents and persons with disabilities) and contracts for work in connection with the project be awarded to business concerns which are owned by or employee low and very low income residents of the project area.
2. The parties to this Contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this Contract. The parties to this Contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements.
3. The Contractor will send to each labor organization or representative of workers with which he has a collective bargaining agreement or other contract of understanding, if any, a notice advising the said labor organization or workers' representative of his commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.
4. The Contractor will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the subcontract upon a finding that the Subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR Part 135. The Contractor will not subcontract with any Subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR Part 135 and will not let any subcontract unless the Subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.
5. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the Department issued hereunder prior to the execution of the Contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its contractors and subcontractors, its successors and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided, and to such sanctions as are specified in 24 CFR Part 135.

G. Rehabilitation Act of 1973, Section 503 Handicapped (if \$10,000 or over)

Affirmative Action for Handicapped Workers

1. The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees

to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training including apprenticeship.

2. The Contractor agrees to comply with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.
 3. In the event of the Contractor's non-compliance with the requirements of this clause, actions for non-compliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
 4. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.
 5. The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physical and mentally handicapped individuals.
 6. The Contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each Subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for non-compliance.
- H. Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended; 41 CFR Part 60-250 (if \$100,000 or over)

1. The contractor will not discriminate against any employee or applicant for employment because he or she is a special disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified individuals without discrimination based on their status as a special disabled veteran or veteran of the Vietnam era in all employment practices, including the following:
 - i. recruitment, advertising, and job application procedures
 - ii. hiring, upgrading, promotion, award of tenure, demotion, transfer, layoff, termination, right of return from layoff and rehiring;
 - iii. rates of pay or any other form of compensation and changes in compensation;

- iv. job assignments, job classifications, organizational structures, position descriptions, lines of progression, and seniority lists;
 - v. leaves of absence, sick leave, or any other leave;
 - vi. fringe benefits available by virtue of employment, whether or not administered by the contractor
 - vii. selection and financial support for training, including apprenticeship, and on-the-job training under 38 U.S.C 3687, professional meetings, conferences, and other related activities, and selection for leaves of absence to pursue training;
 - viii. activities sponsored by the contractor including social or recreational programs; and
 - ix. any other term, condition, or privilege of employment.
2. The contractor agrees to immediately list all employment openings which exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract and including those occurring at an establishment of the contractor other than the one wherein the contract is being performed, but excluding those of independently operated corporate affiliates, at an appropriate local employment service office of the state employment security agency wherein the opening occurs. Listing employment openings with the U.S. Department of Labor's America's Job Bank shall satisfy the requirement to list jobs with the local employment service office.
3. Listing of employment openings with the local employment service office pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and nonveterans. The listing of employment openings does not require the hiring of any particular job applicants or from any particular group of job applicants, and nothing herein is intended to relieve the contractor from any requirements in Executive orders or regulations regarding nondiscrimination in employment.
4. Whenever the contractor becomes contractually bound to the listing provisions in paragraphs 2 and 3 of this clause, it shall advise the state employment security agency in each state where it has establishments of the name and location of each hiring location in the state, provided that this requirement shall not apply to state and local governmental contractors. As long as the contractor is contractually bound to these provisions and has so advised the state agency, there is no need to advise the state agency of subsequent contracts. The contractor may advise the state agency when it is no longer bound by this contract clause.
5. The provisions of paragraphs 2 and 3 of this clause do not apply to the listing of employment openings which occur and are filled outside of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, Guam, and the Virgin Islands.
6. As used in this clause:
 - i. All employment openings includes all positions except executive and top management, those positions that will be filled from within the contractor's organization, and positions lasting three days or less. This term includes full-

time employment, temporary employment of more than three days' duration,
and part-time employment.

- ii. Executive and top management means any employee:
 - a) Whose primary duty consists of the management of the enterprise in which he or she is employed or of a customarily recognized department or subdivision thereof; and
 - b) who customarily and regularly directs the work of two or more other employees therein; and
 - c) who has the authority to hire or fire other employees or whose suggestions and recommendations as to the hiring or firing and as to the advancement and promotion or any other change of status of other employees will be given particular weight; and
 - d) who customarily and regularly exercises discretionary powers; and
 - e) who does not devote more than 20 percent, or, in the case of an employee of a retail or service establishment who does not devote as much as 40 percent, of his or her hours of work in the work week to activities which are not directly and closely related to the performance of the work described in (a) through (d) of this paragraph 6. ii.; Provided, that (e) of this paragraph 6.ii. shall not apply in the case of an employee who is in sole charge of an independent establishment or a physically separated branch establishment, or who owns at least a 20-percent interest in the enterprise in which he or she is employed.
- iii. Positions that will be filled from within the contractor's organization means employment openings for which no consideration will be given to persons outside the contractor's organization (including any affiliates, subsidiaries, and parent companies) and includes any openings which the contractor proposes to fill from regularly established "recall" lists. The exception does not apply to a particular opening once an employer decides to consider applicants outside of his or her own organization.

7. The contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
8. In the event of the contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.
9. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Deputy Assistant Secretary for Federal Contract Compliance Programs, provided by or through the contracting officer. Such notices shall state the rights of applicants and employees as well as the contractor's obligation under the law to take affirmative action to employ and advance in employment qualified employees and applicants who are special disabled veterans or veterans of the Vietnam era. The contractor must ensure that applicants or employees who are special disabled veterans are informed of the contents of the notice (e.g., the contractor may have the notice read to a visually disabled individual, or may lower the posted notice so that it might be read by a person in a wheelchair).

10. The contractor will notify each labor organization or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the contractor is bound by the terms of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, and is committed to take affirmative action to employ and advance in employment qualified special disabled veterans and veterans of the Vietnam era.
11. The contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more, unless exempted by the rules, regulations, or orders of the Secretary issued pursuant to the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the Deputy Assistant Secretary for Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

I. Age Discrimination Act of 1975

During the performance of this Contract, the Contractor agrees as follows: the Contractor agrees not to exclude from participation, deny program benefits, or discriminate on the basis of age.

9. Certification of Compliance with Air and Water Acts (applicable to Federally-assisted construction contracts and related subcontracts exceeding (\$100,000))

During the performance of this Contract, the Contractor and all Subcontractors shall comply with the requirements of the Clean Air Act, as amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 33 USC 1251 et seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended.

In addition to the foregoing requirements, all "nonexempt" Contractors and Subcontractors shall furnish to the Owner, the following:

- A. A stipulation by the Contractor or Subcontractors, that any facility to be utilized in the performance of any nonexempt contract or subcontract, is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20.
- B. Agreement by the Contractor to comply with all the requirements of Section 114 of the Clean Air Act, as amended, (42 USC 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended, (33 USC 1318) relating to inspection, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
- C. A stipulation that as a condition for the award of the Contract, prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA, indicating that a facility utilized, or to be utilized for the Contract, is under consideration to be listed on the EPA List of Violating Facilities.
- D. Agreement by the Contractor that he will include, or cause to be included, the criteria and requirements in paragraphs A through D of this section in every nonexempt subcontract and requiring that the Contractor will take such actions as the Government may direct as a means of enforcing such provisions.

10. Special Conditions Pertaining to Hazards, Safety Standards and Accident Prevention

- A. Lead-Based Paint Hazards (applicable to contracts for construction or rehabilitation of residential structures)

The construction or rehabilitation of residential structures is subject to the HUD Lead-Based Paint regulations, 24 CFR Part 35. The Contractor and Subcontractors shall comply with the provisions for the elimination of lead-based paint hazards under sub-part B of said regulations. The Owner will be responsible for the inspections and certifications required under Section 35.14(f) thereof.

- B. Use of Explosives (modify as required)

When the use of explosives is necessary for the prosecution of the work, the Contractor shall observe all local, State and Federal laws in purchasing and handling of explosives. The Contractor shall take all necessary precaution to protect completed work, neighboring property, water lines or other underground structures. Where there is danger to structures or property from blasting, the charges shall be reduced and the material shall be covered with suitable timer, steel or rope mats. The Contractor shall notify all owners of public utility property of intention to use explosives at least eight hours before blasting is done close to such property. Any supervision or direction of use of explosives by the Engineer, does not in any way reduce the responsibility of the Contractor or his Surety for damages that may be caused by such use.

- C. Danger Signals and Safety Devices (modify as required)

The Contractor shall make all necessary precautions to guard against damages to property and injury to persons. He shall put up and maintain in good condition, sufficient red or warning lights at night, suitable barricades and other devices necessary to protect the public. In case the Contractor fails or neglects to take such precautions, the Owner may have such lights and barricades installed and charge the cost of this work to the Contractor. Such action by the Owner does not relieve the Contractor of any liability incurred under these specifications or Contract.

11. Energy Efficiency

The Contractor shall recognize mandatory standards and policies relating to energy efficiency, which are contained in the State Energy Conservation Plan issued in Compliance with the Energy Policy and Conservation Act.

12. Access to Records

The Contractor shall maintain accounts and project records, including personnel, property and financial records, adequate to identify and account for all costs pertaining to the Contract and such other records as may be deemed necessary by the City to assure proper accounting for all project funds, both CDBG and non-CDBG shares. These records will be made available to the City, the Department of Local Government, Commonwealth of Kentucky Finance & Administration Cabinet, Commonwealth of Kentucky Auditor of Public Audits, Commonwealth of Kentucky Legislative Research Commission, U.S. Department of Housing and Urban Development, the U. S. Department of Labor, and the Comptroller General of the United States, or any of their duly authorized representatives. These parties shall have access to any books, documents, papers and records of the Contractor, which are directly pertinent to the project, for the purpose of making audit, examination, excerpts and transcriptions. All records shall be maintained for five years after project closeout.

13. Wage Rate Determination(s)

See "Bidding Documents" Section of the Contract Documents

14. Contract Work Hours and Safety Standards Act

All grantees and subgrantee's contracts must contain provisions requiring compliance with sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5) where construction contracts are awarded by grantees or subgrantees in excess of \$2,000, and in excess of \$2,500 for other contracts involving the employment of mechanics and laborers.

Form RD 1924-7
(Rev. 2-97)

UNITED STATES DEPARTMENT OF AGRICULTURE
RURAL DEVELOPMENT AND
FARM SERVICE AGENCY

CONTRACT CHANGE ORDER

ORDER NO.
DATE
STATE
COUNTY

CONTRACT FOR _____

OWNER _____

To _____
(Contractor)

You are hereby requested to comply with the following changes from the contract plans and specifications:

Description of Changes (Supplemental Plans and Specifications Attached)	DECREASE in Contract Price	INCREASE in Contract Price
	\$ _____	\$ _____
TOTALS	\$ _____	_____
NET CHANGE IN CONTRACT PRICE	\$ _____	_____

JUSTIFICATION:

The amount of the Contract will be (Decreased) (Increased) By The Sum Of: _____
_____ Dollars (\$ _____).

The Contract Total Including this and previous Change Orders Will Be: _____
_____ Dollars (\$ _____).

The Contract Period Provided for Completion Will Be (Increased) (Decreased) (Unchanged): _____ Days.

This document will become a supplement to the contract and all provisions will apply hereto.

Requested _____ (Owner) _____ (Date)

Recommended _____ (Owner's Architect/Engineer) _____ (Date)

Accepted _____ (Contractor) _____ (Date)

Approved by Agency _____ (Name and Title) _____ (Date)

Public reporting burden for this collection of information 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. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to U.S. Department of Agriculture, Clearance Officer, STOP 7602, 1400 Independence Avenue, S.W., Washington, D.C. 20250-7602. Please DO NOT RETURN this form to this address. Forward to the local USDA office only. You are not required to respond to this collection of information unless it displays a currently valid OMB control number.

**Temporary Black & White Construction Sign for projects funded by the
Department for Local Government (DLG)**

**Andy Beshear
Governor**



**Dennis Keene
Commissioner**

**Office of the Governor
Department for Local Government**

**Project Title
Centered, Black Letters**

Project Sponsor: City or County Government

Sponsor Address:

Architect or Engineer:

Contractor:



**This project is funded by a Community
Development Block Grant administered by the
Department for Local Government and
financed by the U.S. Department of Housing
and Urban Development.**

Equal Opportunity Employer

Sign Dimensions: 1200mm x 2400mm x 19 mm (app. 4' x 8' x 3/4") Plywood Panel (APA Rated A-B grade – Exterior)

PROJECT SPECIAL CONDITIONS

1. Project Special Conditions: These Special Conditions supplement the “Standard General Conditions” and the “Supplementary Conditions” within the Contract Documents. The Engineer's decision shall be final as to interpretation and/or conflict between any of the reference specifications and standards contained herein.

2. Additional Definitions: Wherever the following terms are used in these specifications, their meaning shall be construed in accordance with the definitions listed below.
 - a. Engineer: McGhee Engineering, Inc., P.O. Box 267, 202 Ewing Street, Guthrie, Kentucky 42234, telephone (270) 483-9985.
 - b. Inspector: Representative of the Engineer or Owner stationed at, or visiting the site of the work to secure conformity with the Plans and Specifications, to record the work performed by the Contractor and to serve in such other capacities as the Engineer may direct.
 - c. Plans: All drawings adopted by the Engineer and bound herein pertaining to the work under this contract.
 - d. ASTM Specifications: Adopted by the American Society for Testing and Materials, governing the methods and procedures for manufacturing and testing materials and bearing appropriate alphabetical and numerical designations pertinent to the various items involved.
 - e. OSHA: Occupational Health and Safety Administration requirements pertaining to the project.

3. The following abbreviations will be used in these Specifications, the Proposal and contract:

LF or L.F.	Linear Foot
SF or S.F.	Square Foot
LS or L.S.	Lump Sum
EA or Ea	Each
SQ. IN.	Square Inch
LBS.	Pounds
LIN. IN.	Linear Inch

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

5. Completion Time and Liquidated Damages: The project as indicated in the Plans and Specifications shall be completed within the number of consecutive working days stated in the Contract. Contractors shall

submit any request for time extensions at the time of submission of the pay request covering the period during which the time extension is requested, and such requests shall include justification in conformance with the Contract. Failure to make timely submittal of requests for time extension shall be grounds for their denial. The times set forth in the Proposal for completion of work are an essential element of the Contract. The Contractor and Owner understand and agree that a breach of this Contract as to completion on time will cause damage to the Owner. The parties agree that for each and every calendar day the work or any portion thereof shall remain uncompleted after the expiration of the contract time limit, **An amount specified and under the provisions of the Agreement** will be deducted from the money due or to become due the Contractor, not as a penalty, but as liquidated damages and added expense of engineering and overhead.

6. **Contractor's Warranty:** The Contractor shall guarantee that all work performed under this Contract is new and free of faulty materials in every particular, and free of faulty workmanship, and he does hereby agree to maintain, replace or re-execute without additional cost to the Owner such work found to be unsatisfactory and to make good all damage to his, or work by others affected by this Contract as a result of improper workmanship and materials or due to such required replacement or re-execution.

The Contractor shall warrant all such work for a period of one (1) year from the date of acceptance of all work performed under this Contract. A "Final Certificate" will be issued by the Engineer, as evidence. Neither the "Final Certificate," nor payment, nor any provisions in the Contract Documents shall relieve the Contractor of the guarantee or maintenance provisions, or his responsibility for neglect or the replacement of faulty materials, or workmanship, or any other items of defect during the warranty period.

7. **Safety:** The Contractor shall be responsible for the safety of himself, his employees and other persons, as well as for the protection of the safety of the improvements being erected and the property of himself or any other person, as a result of his operation. All work shall be done in accordance with the Occupational Safety and Health Administration regulations and all other current federal, state and local laws pertaining to occupational safety, health and welfare. All monitoring and testing required to assure compliance with such requirements shall be the responsibility of the Contractor. The safety of the public, protection of property, and convenience of traffic shall be of prime importance during construction. In all respects, public safety and protection of property and provisions therefor, made necessary by the work, shall be the direct responsibility of the Contractor and shall be performed at his expense.

8. **Contractor's Responsibility for Materials and Equipment:** The Contractor shall assume full responsibility for all supplies, materials and equipment furnished or installed by him for the work he contracts to do, whether furnished by him or by other parties, until the same shall have been installed and finally tested and accepted by the Engineer. The Contractor shall, therefore, insure such property against loss or damage while stored at the site of the work.

9. **Permits, Licenses and Laws:** The Contractor shall obtain, at his own expense, all necessary permits and licenses from the proper authorities and shall give all notice required by law or ordinance and shall pay all fees and charges incidental to the due and lawful prosecution of the work and shall comply with all laws, ordinances and regulations relating thereto. Contractor shall obtain necessary building permits; however, there shall be no fees charged to the Contractor by the Owner.

The Owner shall not be responsible to the Contractor for expenses incurred while performing the work under this contract due to the requirements and conditions imposed on the Contractor by any governmental agencies. The Contractor shall investigate with said government as to the requirements and conditions to be imposed.

Copies of said permits, licenses, authorizations or regulations shall be filed with the Owner through the Engineer or his representative. In the event that any work to be performed by the Contractor under the above mentioned permits is found to be unsatisfactory and is not approved by the aforementioned governmental authorities, the cost thereof shall be charged to the Contractor and shall be withheld by the Owner from any money due to the Contractor under the subject construction contract.

10. **Labor Laws:** The Contractor shall comply with, and shall cause all subcontractors to comply with, the requirements of all applicable labor laws (hours of work, minimum wage, prevailing wage, etc.).

11. Protection of Adjoining Property: Any damage to any property of the Owner or other caused by the Contractor's operations shall be corrected at the Contractor's expense.

Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees that receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

Minimize siltation and soil erosion during construction.

12. Cleanup: Upon completion of the work and before acceptance and final payment by the Owner, the Contractor shall remove rubbish, unused materials and temporary structures from the limits of the project and restore, in a manner acceptable to the Engineer, all property both public and private that has been damaged during prosecution of the work, and shall level and grade all portions of the work where the surface of the ground or street surface has been disturbed during construction and shall leave the site of the work in a neat and presentable condition, free from ruts and holes. Areas where vegetation is disturbed by construction shall be graded and re-seeded to the satisfaction of the Owner.

Materials associated with the project shall not be deposited on adjacent property unless prior approval has been obtained from the property owner involved.

No extra payment will be made for these cleanup requirements, its cost being included in the various unit prices bid in this proposal.

13. Resident Construction Observation: The Owner may employ the services of a resident construction observer during construction of the project. The purpose of the resident construction observer is to provide additional assurances to the owner as to the quality of the work and the conformance of the work to the plans and specifications. The resident construction observer is not provided to act as a supervisor of the contractor's activities, nor to take responsibility for the quality or safety of the contractor's work. Such responsibilities remain exclusively with the contractor.
14. Basis of Payment: The basis of payment for all items involved with the project will be made according to the units described in the Proposal breakdown. If there are any conflicts between the basis of payment described in the Specification and the units described in the Proposal breakdown, then the Proposal breakdown will prevail.
15. Inclement Weather: The basis of contract time is calendar days. If during the course of the project, weather conditions prevail that preclude performance of productive work for a number of days in excess of that which would normally be expected for the period, the Contractor may request a compensating time extension.
16. Change Orders: Change Orders to the construction contract must comply with DOW Procurement Guidance for Construction and Equipment Contracts. For Change Orders exceeding \$100,000, DOW Procurement Guidance for Construction and Equipment Contracts require cost, pricing and certification.
17. Schedules: The contractor shall provide project construction and payment schedules to the Engineer for approval.
18. Overtime Pay: If state labor laws apply to the project, the Contractor shall compensate for overtime pay for work in excess of an 8-hour day.

END OF SECTION

SUMMARY OF WORK

1.0 GENERAL

1.1 Work Included

The work to be performed involves the replacement of various sized waterlines, extension of new 3" waterlines to serve unserved rural residences, miscellaneous valve additions, various hydrant replacements, and the addition of a new SCADA system; all in the Mortons Gap Water System (Hopkins County), as described by the Contract Drawings and Specifications.

1.2 Patented or Proprietary Materials

This Solicitation specifies requested items. It is not the intention of this Solicitation to eliminate Manufacturers or Contractors of similar or equal equipment of the types specified. It should be noted, however, that these requested items are written around specific requirements and needs of the Owner.

The Contractor acknowledges to and for the benefit of the City of Mortons Gap ("Purchaser") and the Commonwealth of Kentucky (the "State") that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

The Bidder/Contractor shall submit Manufacturers' Certification letter of compliance with American Iron & Steel Requirement.

If discrepancies or ambiguities are found in the plans, specifications, contract documents or in any communication to the contractor regarding specified materials not compliant with the American Iron and Steel requirement, the contractor shall immediately notify the Engineer in writing.

2.0 CONTRACTOR'S DUTIES

2.1 Construction and Related Activities

The Contractor shall provide and pay for all labor, materials, equipment, machinery, tools, superintendence, insurance, bonds, shipping, sampling and testing, utilities, and other costs required for a complete and functioning water line installation.

2.2 Taxes

The Contractor shall pay all required sales taxes, payroll taxes, consumer and use taxes, and other taxes relating to the work of the project.

2.3 Permits

The contractor shall secure and pay for all legally required permits, licenses and fees associated with the construction. In particular, the Contractor shall:

- A. Comply with Kentucky Transportation Cabinet road encroachment permit requirements.
- B. Comply with Hopkins County Road and/or Mortons Gap Street Department road crossing requirements.
- C. Comply with all Federal, State and Local Floodplain and/or Stream Crossing Permits.

2.4 Notices

The Contractor shall provide all required notices, including notices to utility owners of intent to excavate in the vicinity of their utilities, notices to property owners of intent to enter their property for construction purposes, notices regarding the interruption of any utility service, as well as other notices required by the plans and contract documents.

2.5 Laws

Contractor shall fully comply with all applicable laws, ordinances, rules, regulations, orders and other legal requirements, and shall bear the cost of such compliance.

2.6 Character of Workmen

Contractor shall employ workman and foremen with sufficient knowledge of and experience in the type of work proposed to assure satisfactory performance. Workman shall maintain a professional demeanor and appearance at all times on the project. Any workman on the project who performs work in an incompetent manner, or acts in a disorderly or intemperate manner shall be removed from the project, and may not be employed on any portion of the project unless approved by the Owner.

2.7 Notice of Discrepancies

If discrepancies or ambiguities are found in the plans, specifications, contract documents or in any communication to the contractor, the contractor shall immediately notify the Engineer in writing. Do not proceed with the affected work until clarification is received.

2.8 Inspection

Provide at all times, access to the work for inspection by representatives of the Owner, the Engineer, and regulatory authorities having jurisdiction over the project.

3.0 CONTRACTOR'S USE OF PREMISES

Hopkins County is the site of all work on this Project.

- a. **RIGHTS-OF-WAY AND EASEMENTS:** The owner has legal authority to construct these facilities on property owned by the Owner, within easements on private property, and on existing public rights-of-way and will provide any other required permanent and construction easements for the pipeline. Access to the site of the work is the responsibility of the Contractor. Contractor shall confine his operations to right-of-ways, easements and property obtained by the Owner for

construction of the project, or to areas secured by the Contractor for his use. Contractor shall take precautions to minimize disruption to existing properties.

- b. LOCATION OF TEMPORARY FACILITIES: Contractor's Field offices, Sub-Contractors' Field Offices, Material Storage Buildings, Material and Equipment Storage Yards, and parking areas for all project workers shall be provided by the Contractor, and located in areas approved by the Engineer. Stored materials, regardless of their location shall be protected by the Contractor from damage, theft or degradation at all times.
- c. DAMAGE TO EXISTING PROPERTY: The Contractor will be held responsible for any damage to existing structures, work, materials, or equipment because of his operations and shall repair or replace any damaged structures, work, materials, or equipment to the satisfaction of, and at no additional cost to, the Owner. Stored materials, regardless of their location shall be protected by the Contractor from damage, theft or degradation at all times.

The Contractor shall protect all existing structures and property from damage and shall provide bracing, shoring, or other work necessary for such protection.

4.0 EXISTING FACILITIES

4.1 Existing Utilities

The existing water distribution system will be in continuous operation during the construction of the Project. Contractor shall avoid disturbing existing water facilities, and any other utilities or structures encountered in the work, except as necessary for construction operations. Contractor shall give at least 48 hours prior notice to the Owner, or to any utility or other entity, of any necessary disruptions to service, or work affecting active lines. The Contractor shall be responsible for any necessary damage repair resulting from his installation work

Contractor shall cooperate with Owners personnel in continuing operation of existing facilities.

4.2 Existing Connecting Streets, Roads and Highways

Any damage to a public facility and/or any access road into the project site by construction traffic generated by this project shall be the responsibility of the Contractor. All streets and roads shall be kept open to normal traffic and in a reasonable state of repair. The Contractor shall arrange with the appropriate authority to perform repairs himself or to have the said authority perform them. Any damages to public roads shall be considered a matter of the Contractor's or his suppliers public liability, and needed repairs shall be made as required by the public entity having authority over the road.

Contractor shall provide adequate barricades, warning signs, flagmen, lights, etc., for construction operations hazardous to traffic and public safety.

5.0 PARTIAL OWNER OCCUPANCY

The Owner may, at his discretion, place into service any or all portions of the completed work prior to final completion of all work on the project. Placing a portion of the work in service before final completion does not relieve the contractor of his obligation to complete all work associated with that portion of the line (i.e. clean-up, surface restoration, etc.), to perform maintenance for the required period, or to provide warranty for that portion of the work. If a portion of the work that is placed in service prior to final project completion and acceptance is, in the opinion of the Engineer, complete and ready for acceptance, the Contractor may request that the warranty period for that portion of the work begin at the time it is placed in service, providing that such request is made in writing within seven days of the date of being placed in service. If the request is not made within the required time, the warranty period for that portion of the work will begin upon final acceptance of the Project.

6.0 TEMPORARY FACILITIES

- a. **CONTRACTOR'S OFFICE AT SITE OF WORK:** Contractor will not be required to provide temporary office facilities, but may do so if desired.
- b. **PARKING:** The Contractor shall provide and maintain suitable parking areas for the use of all construction workers and others performing work or furnishing services in connection with this Contract, as required to avoid any need for such personnel to park personal vehicles in locations where they may interfere with public traffic, Owner's operations, or construction activities. Securing the use of property for parking areas as necessary for the Contractor's operations shall be the full responsibility of the Contractor.
- c. **SANITARY FACILITIES:** The Contractor shall provide and maintain sanitary facilities for the use of his employees or any other persons on the job site, as may be required to comply with the regulations of state and local departments of health.

7.0 TEMPORARY UTILITIES & SERVICES

- a. **WATER:** Water for any purpose will be paid for by the Contractor.
- b. **POWER:** Power for lighting, temporary office facilities, operation of the Contractor's plant or equipment, or for any other use by the Contractor shall be provided by the Contractor at his sole cost and expense. The contractor will be responsible for all necessary arrangements with the utility company.
- c. **HEAT:** All heat necessary for the protection or completion of the work, operation of the Contractor's plant or equipment, or for any other use by the Contractor shall be provided by the Contractor at his sole cost and expense.
- d. **TELEPHONE SERVICE:** The Contractor shall make all necessary arrangements with the telephone utility, and pay all charges therefore, for telephones in his offices at the site, if desired.
- e. **SANITARY SEWER:** The Contractor may make use of portable toilet facilities at his sole cost and expense.

8.0 WORKING HOURS

The Contractor may work on this project during the daylight hours, Monday through Friday, except legal holidays, when weather conditions permit. **If the Contractor wishes to work at other times, he may do so if approved by the Engineer and if the request to do so is made at least 48 hours in advance.**

END OF SECTION 01-100

SUBMITTALS

1.0 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

1.1 General

Submit four copies of all required shop drawings to the Utility's Engineer for approval. Do not proceed with work involving any material, supply or method subject to review until approved submittals are received. Allow two weeks for the Utility Engineer's review.

1.2 Submittal Requirements

Submittals shall fully describe the item, material, or construction method proposed, and shall be free of extraneous materials. Submittals shall be adequate to fully document compliance with all requirements of the specifications. Any proposed deviation from the specifications, and the reason therefor shall be noted on the submittal.

By submitting a particular item, material or method, the Contractor states his intention to use that item, material or method exclusively in the work. Once approved, the Contractor may not change items, materials or methods without resubmitting shop drawings. The Engineer reserves the right to reject a re-submittal solely on the basis of maintaining continuity in the work.

Engineer's review of the submittal does not relieve the Contractor of his responsibility to fully comply with all requirements of the Contract Documents.

Shop drawings returned for correction or rejected shall be revised and resubmitted until final approval is granted. No claim will be allowed for damages or time extension because of delays in the work resulting from rejection of submittals not conforming to the specifications.

1.3 Items Requiring Review

Shop drawing submittal and review are required for, but not limited to, the following items (except where such items are supplied by the owner):

- a. PVC/Ductile iron pipe, fittings, meters and hydrants;
- b. Pipe Certifications and Test Results;
- c. All valves (gate, air release, check, etc.);
- d. Aggregates used as bedding or backfill (source and gradation).
- e. Precast concrete items;
- f. Access hatch and covers
- g. Tracer wire & tracer wire splice kit material.
- h. Pipeline markers;
- i. Casing Pipe;
- j. Casing End Seals & Spacers;
- k. Hydrants;
- l. Tapping sleeves;
- m. Meter Service components including service tubing and meter box.

2.0 OPERATING AND MAINTENANCE MANUALS

Furnish four copies of manuals of instruction for operation and maintenance of the following items:

- a. Valves
- b. Flushing Hydrant
- c. SCADA (all hardware and software items)

2.1 Maintenance Manual

- A. Prior to 50% completion of the Contract or at a minimum of 45 days prior to the scheduled start-up date of any individual item of equipment, whichever is earlier, CONTRACTOR shall furnish to ENGINEER four complete copies of a maintenance manual for all equipment furnished and an electronic format compact disk of the maintenance manual in the most recent version of Adobe (.pdf) format identical to the hard copy. Applications for payment beyond 50% of the contract amount will not be recommended for payment until all maintenance manuals are submitted or a revised schedule for remaining maintenance manuals is agreed to by OWNER and ENGINEER.
- B. CONTRACTOR is responsible for producing an electronic version of the Equipment Operations and Maintenance (O&M) Manuals Manual. The Electronic Equipment O&M Manual shall be delivered in Portable Document Format (PDF). The entire manual may be converted to PDF via scanning or other method of conversion. Drawings or other graphics must be converted to PDF format and made part of the PDF document. The CONTRACTOR shall provide all Equipment O&M Manuals in the electronic format as defined below.
- C. The filename for the Equipment O&M Manual submittal will be provided with the request for final Equipment O&M Manuals. Filenames use the "eight dot three" convention (XXXXXX_YY.PDF) where XXXXX is the specification section number and YY is an ID number. No one file shall be larger than 10 MB. If technical problems require that the submittal be divided into more than one file, a letter extension shall be added to the end of each filename.
- D. (Example: 19876_01a.pdf). The number of files shall be kept to a minimum. Equipment O&M Manuals that span more than one file shall have the final Bookmark "Return to Table of Contents" which shall take the User to the first file on the Equipment O&M Manual.
- E. All text (word processed), spreadsheets, and electronic graphics shall be delivered in portable document format (*.PDF). The resolution of all scanned images shall be a minimum of 300 dpi unless otherwise requested by ENGINEER. Scanned images shall be processed with the "original image with hidden text" option (Adobe Acrobat 6 or higher). This results in a clear image and provides for optical character recognition (OCR) and word search functionality. Graphical files shall be fully searchable. All submittals must be indexed with the Adobe Catalog feature. Placement and structure of index files shall be in accordance with Adobe's recommendations to minimize problems when transferring files. Successful searches for words or strings in the PDF document shall demonstrate proof of OCR.
- F. Rotate pages viewed in landscape to the appropriate position for easy reading on a computer monitor.
- G. Bookmarks shall be created in the navigation frame for each entry in the Table of Contents. Three levels deep is usually enough (i.e., "Chapter", "Section", "Subsection"); however, complex submittals like instrumentation and electrical may be required at the discretion of ENGINEER. When setting bookmarks for Chapter level heading, the page shall be displayed at Full Page. Section and Subsection level heading pages shall be displayed as a magnified view. Bookmarks shall be displayed as subordinate (to other bookmarks in their hierarchy set so that only the Chapter level headings are displayed.
- H. Thumbnails shall be generated and embedded in each PDF file.
- I. Files shall be delivered without Security features activated. Password protected files will be unacceptable.
- J. The opening view for PDF files shall be set as follows:
 - 1. Initial View: Bookmarks and Page
 - 2. Magnification: Fit In Window
 - 3. Page Layout: Single Page

- K. The file shall open to the cover page of the Equipment O&M Manual with bookmarks to the left. The first bookmark shall be the name of Equipment O&M Manual.
- L. The submittal shall be delivered on CD after all Equipment O&M Manuals have been received and reviewed. Each CD shall be labeled, at a minimum, as follows, including: 1) CD-ROM disks, 2) jewel cases, and 3) hard copies.
- M. Manufacturer name, point of contact, telephone number, facsimile number, and e-mail address as appropriate.
- N. Equipment name and/or O&M title spelled out in complete words.
 - Example "Operations and Maintenance Manual"
 - "Horizontal Centrifugal Nonclog Pump"
- O. Specifications section number.
- P. Project name.
- Q. Date and File Name: Example "12-20-07", "19876_01.pdf"
- R. CONTRACTOR shall reprocess any portion of the document that does not view or print to OWNER's satisfaction.
- S. CONTRACTOR is fully responsible for obtaining any and all copyright permissions associated with conversion of this information to electronic format.

The manuals shall include manufacturer's instructions for maintenance and operation for each item of mechanical and electrical equipment. Manuals shall be specific for the equipment as installed; provide project specific inserts as required. Manuals shall contain: operation instructions, lubrication schedules, types and quantities, preventive maintenance program, spare parts list, parts lists, I.D. No. and exploded views, assembly instructions, parts supplier location, trouble shooting and start-up procedures and, where applicable, test data and curves. All sheets shall have reduced dimensions as described for shop Drawings. All sheets shall be furnished in 3-ring binders or 3-tab report covers.

3.0 CLOSEOUT

Before final payment on the project, deliver to the Engineer the following items.

1. Notarized release of liens from all subcontractors, equipment and material suppliers.
2. Written warranties and guarantees.
3. Written manufacturers' certifications regarding compliance to American Iron & Steel Provisions.
4. **Maintenance Manuals (4 Copies)**

END OF SECTION 01-200

WATER MAIN GENERAL REQUIREMENTS

1.0 GENERAL

1.1 Scope of Work

The water mains and appurtenances required on this contract shall be furnished in full compliance with the contract specifications and contract drawings.

Work to be performed under the unit price items, described subsequently herein, shall include for each item all excavation (including rock excavation, if any) the removal of existing pavements, curb and gutter, sidewalks, driveways, brush and timber, structures and piping to be relocated or abandoned; also sheeting, diking, well pointing, bailing, dewatering; the furnishing, placing and removal of bulkheads, the restoration of any utilities, parkways, trees, shrubbery, culverts, fences and other items disturbed by construction operations; backfilling and removal of excess excavated materials; and testing.

The cost of all such work and the cost of other work necessary for the complete water line installation shall be included in the unit price pay items provided.

1.2 Standards

Where materials and methods are indicated in the Specifications as being in conformance with a standard specification (i.e. AWWA, ASTM, etc.) it shall refer in all cases to the latest edition of the specification or standard, and shall include all interim revisions. Listing of a standard specification without further reference shall indicate that the particular material or method shall conform to the referenced specification.

2.0 WORK INCIDENTAL TO CONSTRUCTION

Work to be performed under this heading includes all the work designated as "incidental to construction" and other work required by the plans, specifications or contract documents in order to fully complete the work on the project, but not provided with a specific pay item in the bid form. The contractor shall perform such work, and the contractor shall include all charges for the work in the bid items provided. No claim for additional compensation based upon required work not being described in a bid item will be considered.

2.1 Public and Private Utilities

Where **any** utilities (including those of the Owner), such as water, sewer, telephone, power, oil or gas transmission, or any other, either public or private are encountered, the contractor shall provide adequate protection for them and will be held responsible for any damage to such utility from his operations. When it is apparent that construction operations may damage the integrity of any utility conduit or pole, or the support of any structure, the contractor shall notify the utility owner of this possibility and shall take such steps as may be required to provide temporary bracing or support of the affected conduit, pole or structure.

The cost of any bracing or support of conduits, poles or structures encountered in the work shall be included in the bid item for water main construction.

When, in order to carry out the work, a pole, conduit or structure is required to be removed or relocated, the contractor shall be responsible for making all arrangements with the utility owner for such removal or relocation. All costs for such relocation or removal shall be born by the contractor unless it could not be reasonably foreseen that such work would be required.

All damage to utilities resulting from the contractors operations shall be repaired at the contractor's expense. Where it is the policy of the utility to perform their own repairs to damaged utilities, the contractor shall cooperate fully with the utility and bear the costs of such repairs.

2.2 Existing Water, Sewer and Drain Facilities

In some instances, existing water, sewer or drains may be encountered along the line of work. In all such cases, the contractor shall perform his operations in such manner that the service will not be interrupted, and shall, at his expense, make temporary provisions to maintain such services.

Where it is necessary to cut, remove and/or replace existing storm sewers and drain tiles, the Contractor shall make specific arrangements to maintain the flow of water and shall not place permanent bulkheads in any conduit. Temporary earth dams may be used to confine and/or channel the flow and shall be removed upon completion of the crossing.

The Contractor shall receive no extra compensation for replacement of drains encountered or for relaying same at a new grade or line. Where existing water mains are encountered in the work they shall be maintained in operation to the extent that water service is not interrupted.

2.3 Existing Gas, Electric and Other Facilities

Where existing gas mains are encountered, the Contractor shall arrange with the Gas Utility for any necessary location and relaying.

The Contractor will give adequate notice to the Gas Utility to allow their location of gas lines ahead of the proposed construction with paint or stakes. The Contractor will be required to expose the gas mains prior to dynamiting and excavation, where crossing pipeline installations. Track drill operations will be ceased short of the gas main and will resume on the other side of the main. The material under the gas line will be removed with hand drills and/or jack hammers. The Contractor shall contact the Gas Utility for restrictions on blasting in the vicinity of the gas line, comply therewith.

Before backfilling a trench in which a gas main has been exposed, the Contractor shall notify the Gas Utility to inspect the exposed main and perform any protective measures deemed necessary.

The forgoing provisions pertaining to gas lines shall apply to all natural gas, petroleum and other pipelines.

Where existing underground electric or telephone facilities are encountered, the Contractor shall take the necessary measures to work around the facilities or arrange with the Electric Company or Telephone Company for any necessary relaying. Repairs made necessary by damage to any facilities by the Contractor shall be charged to the Contractor.

2.4 Dewatering

The Contractor shall perform all pumping, well pointing, ditching and any other necessary procedure to keep the excavation clear of groundwater, storm water, or sewage during the progress of the work and until the completed work is safe from injury.

The Contractor shall maintain dewatering operations such that no groundwater, storm water, or sewage will be allowed to build up over any concrete and/or masonry at manholes or structures for a period of 6 hours. This time period will be adjusted by the Engineer should temperature and curing conditions warrant.

All water pumped or drained from the work shall be disposed of in a manner satisfactory to the Engineer without damage to adjacent property or to other work under construction. The contractor shall not dispose of storm or surface water through sanitary sewerage facilities.

It shall be the Contractor's responsibility to take all necessary precautions to protect all construction against flooding and/or flotation from hydrostatic uplift.

All dewatering procedures and maintenance thereof shall be considered an incidental part of pipe laying and construction operations and no separate payment will be allowed therefor.

Dewatering operations for structure construction shall be such that the groundwater or surface water is not being pulled over, around, or through the freshly placed concrete or masonry. The use of multiple pumps in the trench may be required. When required to protect the freshly placed concrete and/or masonry, timber or plywood forms will be positioned around in the concrete or masonry so that the dewatering operations will not cause a separation of cement and aggregate. The cost of these dewatering and/or protection procedures shall be merged into the appropriate bid items.

2.5 Barricades And Warning Signs

The Contractor shall furnish, erect, and maintain such barricades, fences, lights, and danger signals and take other precaution measures that will insure the protection of persons, property and the work.

2.6 Maintenance and Access of Traffic

Portions of the work are located in developed areas requiring the access for fire and other departments to be provided for at least one free lane be available for all traffic. Contractors are to arrange operations in these areas to meet these requirements and secure approval of operating procedures from the Logan County Road Department or the Kentucky Department of Highways as appropriate.

Where water mains are constructed under paved roadway surfaces, within public right-of-ways, the Contractor will restore the asphalt or crushed stone pavement and/or shoulders between shoulder lines. It shall be the responsibility of the Contractor, upon completion of the installation, to regrade the street to the template that existed prior to construction. This regrading shall be satisfactory to Logan County or the Kentucky Department of Highways.

The Contractor shall further be responsible for the maintenance of disturbed streets until re-paving operations have been completed.

The Contractor shall restore all curbs, gutters, sidewalks, ramps and private driveways or parking lots. This work shall be considered as incidental to the construction of the proposed water main and, therefore, no additional compensation will be allowed for the restoration of these items.

The Contractor shall also be required to restore, at his own expense, all pavements disturbed by his operations where the water main was not constructed under the pavements. He shall further be required to replace at his own expense all pavements disturbed in the correction of water main deficiency discovered after restorations have been completed.

3.0 MATERIAL AND EQUIPMENT

Materials, products and equipment shall be properly containerized, packaged, boxed and protected to prevent damage during transportation and handling. Provide suitable temporary weather tight storage facilities as may be required for materials or equipment which will be damaged by storage in the open. Protect from damage all materials delivered at the site. Do not use damaged material on the work.

Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the respective manufacturers unless directed otherwise by the provisions of these Specifications.

4.0 SPECIAL CONDITIONS

The Contractor's attention is called to the special conditions (i.e. stream crossings, road crossings, construction in road right-of-way, etc.) indicated on the Plans. The Plans and Specifications reflect the type of construction that is anticipated in the various locations requiring special attention, but it shall be the responsibility of the Contractor to contact the various agencies including the State Highway Department, the Gas Company, Telephone Company, Corps of Engineers, and other utilities and/or entities involved when working in areas where they will be concerned, and for coordinating construction with their requirements in such a way to avoid conflicts, damage or interruptions in service.

- (a) The Contractor shall perform his work in such a manner that normal service on existing water lines and service to customers is maintained to the maximum extent possible. Such service shall be disrupted only at times and in such a manner as approved by the Engineer.
- (b) The Contractor shall submit a work schedule to the Engineer for approval prior to beginning work. The schedule shall establish the planned sequence of line installation, service switch-over if required and property restoration for the project.
- (c) The Contractor shall maintain access to businesses and residences to the maximum extent possible.
- (d) Easement Restrictions - The Contractor shall exercise due care in staying within the easements obtained for the proposed construction, and will be held strictly accountable for violations thereof. Any additional access to or use of private property must be arranged by the Contractor, at his expense, by negotiation with the property owner involved.

The Contractor's attention is also called to the special conditions associated with the proximity of the Owner's existing water distribution system in relation to improvements indicated on the Plans. The proposed improvements will be constructed adjacent to and/or may encounter existing water lines which must remain in service until the successful testing and completion of the proposed improvements. The Contractor is reminded of paragraph 2.1 of Section 02-100, and the Contractor is urged to use the most appropriate construction measures to produce a suitable finished product while maintaining the integrity of the existing infrastructure.

5.0 TESTING

The Specifications for materials designate the testing applicable for materials incorporated in the work. Testing shall be done by the manufacturer in accordance with the applicable ASTM specification. Manufacturer shall furnish the Engineer with three (3) certified copies for the test results.

The Owner may, at his option, elect to have an independent testing laboratory test materials to be furnished for incorporation in the work. Such testing, when done, shall be in accordance with provisions of the Specifications for Materials.

Acceptance testing for installed water line will be limited to visual testing, disinfection testing and pressure testing unless directed otherwise by the Engineer.

6.0 SUBMITTALS

Submittals for this work include, but are not limited to, those items listed in Section 01-200. Provide at least four copies of each submittal, and allow two weeks for Engineer's review. Such submittals are to be approved by Engineer prior to incorporation of any materials into the work.

7.0 WARRANTY

The work to be performed under this Contract shall be guaranteed against defects in materials or workmanship for a period of one year following the date of formal acceptance of the project. In the event defects in materials or workmanship should appear, the Contractor shall promptly make the necessary correction. When the defects are not of an emergency nature, The Contractor will be notified and will be given a period of two weeks in which to make the necessary corrections. Should the defect be of an emergency nature, which in the opinion of the Owner or the Engineer requires immediate correction, the Contractor will be notified and requested to make the necessary repair immediately. Should this be impractical, or if the Contractor should fail to respond to the request for corrective action within the specified period, the Owner may proceed to have the defects corrected and shall bill the Contractor for all charges in connection therewith including labor, materials, and equipment rental. Such charges may be deducted from amounts due the Contractor if any of the Contractor's money has been withheld. In the event the Contractor fails, refused, or neglects to pay the Owner, the Surety shall be liable for such charges.

8.0 MAINTENANCE OBLIGATION

The Contractor shall be fully responsible for maintenance of any and all portions of the work, which he performs under this Contract for a period of 30 days. This maintenance obligation shall begin upon formal acceptance of the project and is intended to place a limit upon the Contractor's responsibility for normal maintenance required for the routine operation of the system. This 30-day obligation shall not be construed as relieving the Contractor of the responsibility for maintenance or repair work resulting from defective materials or workmanship during the warranty period.

9.0 PROJECT CLOSEOUT

The premises and the job site shall be maintained in a reasonably neat and orderly condition and kept free from an accumulation of waste materials and rubbish during the entire construction period. Remove crates, cartons and other flammable waste materials or trash from the work areas at the end of each working day.

When the Contractor requests a final inspection, Engineer and/or Owner will inspect the work for completeness in accordance with the Contract Documents. The contractor shall promptly correct any deficiencies.

Final acceptance cannot be made until the Contractor furnishes to the Owner a notarized certification in a form suitable to the Owner that all labor and material costs for the work have been paid by the Contractor and that there are no liens against the work.

Payment in full of the final Application for Payment shall constitute acceptance of the work by the Owner subject to conditions of the Contract Documents.

END OF SECTION 02-100

WATER MAIN MATERIALS

1.0 GENERAL

All materials to be incorporated in the project shall be first quality, new and undamaged material conforming to all applicable portions of these Specifications.

1.1 Patented or Proprietary Materials

This Solicitation specifies requested items. It is not the intention of this Solicitation to eliminate Manufacturers or Contractors of similar or equal equipment of the types specified. It should be noted, however, that these requested items are written around specific requirements and needs of the Owner.

The Contractor acknowledges to and for the benefit of the City of Mortons Gap (“Purchaser”) and the Commonwealth of Kentucky (the “State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or Drinking Water State Revolving Fund that have statutory requirements commonly known as “American Iron and Steel;” that requires all of the iron and steel products used in the project to be produced in the United States (“American Iron and Steel Requirement”) including iron and steel products provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Purchaser or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

The Bidder/Contractor shall submit Manufacturers’ Certification letter of compliance with American Iron & Steel Requirement.

If discrepancies or ambiguities are found in the plans, specifications, contract documents or in any communication to the contractor regarding specified materials not compliant with the American Iron and Steel requirement, the contractor shall immediately notify the Engineer in writing.

2.0 CONCRETE

2.1 Cement- Cement shall be Portland cement of a brand approved by the Utility’s Engineer and shall conform to "Standard Specifications for Portland Cement", Type 1, ASTM Designation C150, latest revision. Cement shall be furnished in undamaged 94 pound, one cubic foot sacks, and shall show no evidence of lumping.

2.2 Concrete Fine Aggregate- Fine aggregate shall be clean, hard uncoated natural sand conforming to ASTM Designation C33, latest revision, "Standard Specifications for Concrete Aggregate".

- 2.3 Concrete Coarse Aggregate- Coarse aggregate shall consist of clean, hard, dense particles of stone or gravel conforming to ASTM Designation C33, latest revision, "Standard Specifications for Concrete Aggregate". Aggregate shall be well graded between 1-1/2" and #4 sieve sizes.
- 2.4 Water- Water used in mixing concrete shall be clean and free from organic matter, pollutants and other foreign materials.
- 2.5 Ready Mix Concrete- Ready-mix concrete shall be secured only from a source approved by the Utility's Engineer, and shall conform to ASTM Designation C94, latest revision, "Specifications for Ready-Mix Concrete". Before any concrete is delivered to the job site, the supplier must furnish a statement of the proportions of cement, fine aggregate and coarse aggregate to be used for each mix ordered, and must receive the Utility Engineer's approval of such proportions.
- 2.6 Class "A" Concrete- Class "A" concrete shall have a minimum compressive strength of 4000 pounds per square inch in 28 days and shall contain not less than 6 sacks of cement per cubic yard. Class A concrete shall be air-entrained.
- 2.7 Class "B" Concrete- Class "B" concrete shall have a minimum compressive strength of 2000 pounds per square inch in 28 days and shall contain no less than 4 sacks of cement per cubic yard.
- 2.8 Metal Reinforcing- Reinforcing bars shall be intermediate grade steel conforming to ASTM Designation A615, latest revision "Standard Specifications for Billet Steel Bars for Concrete Reinforcement". Bars shall be deformed with a cross sectional area at all points equal to that of plain bars of equal nominal size.

3.0 CRUSHED STONE

Crushed stone for pipe bedding and/or backfill shall meet the quality requirements of ASTM D692 and the grading requirements referenced on the plans.

4.0 WATER PIPE

4.1 PVC Water Pipe

PVC pipe for water shall be manufactured in accordance with ASTM D2241 and have NSF approval. The pipe shall be Class 200 polyvinyl chloride plastic (PVC 1120) SDR-21. The following tests shall be run for each machine on each size and type of pipe being produced, as specified below:

Flattening Test: Once per shift in accordance with ASTM D2412. Upon completion of the test, the specimen shall not be split, cracked or broken.

Acetone Test (Extrusion Quality Test): Once per shift in accordance with ASTM D2152. There shall be not flaking, peeling, cracking, or visible deterioration on the inside or outside surface after completion of the tests.

Quick Burst Test: Once per 24 hours in accordance with ASTM 5199.

<u>SDR</u>	<u>Pressure Rating</u>	<u>Minimum Bursting Pressure, PSI</u>
21	200	800

Impact Tests: 6" and smaller, once each 2 hours in accordance with ASTM D2444.

Wall Thickness and Outside Dimensions Test: Once per hour in accordance with ASTM D2122.

Bell Dimensions Test: Once per hour in accordance with ASTM D3139.

If any specimen fails to meet any of the above mentioned tests, all pipe of that sized and type manufactured between the test period must be scrapped and a full set of tests rerun.

Furnish a certificate from the pipe manufacturer stating that he is fully competent to manufacture PVC pipe of uniform texture and strength and in full compliance with these specifications and further stating that the company has manufactured such pipe for a continuous period of at least ten years. In addition the manufacturer's equipment and quality control facilities must be adequate to ensure that each extrusion of pipe is uniform in texture, dimensions, and strength. Also furnish a certificate from the manufacturer certifying that the pipe furnished for this project meets the requirements of these Specifications.

All pipe shall be manufactured in the United States of America. All pipe for any one project shall be made by the same manufacturer.

The pipe shall be furnished in laying lengths of 20'. The Contractor's methods of storing and handling the pipe shall be approved by the Utility's Engineer. Pipe shall be fully supported as recommended by the manufacturer. Stringing pipe along the proposed route in excess of one day's work will not be allowed.

Certain information shall be marked on each piece of pipe. At the least, this shall consist of:

- Nominal Size
- Type of material
- SDR or class
- Manufacturer
- NSF Seal of Approval

Pipe that fails to comply with the requirements set forth in these Specifications shall be rejected.

4.2 AWWA C900 PVC Water Pipe (if applicable)

AWWA C900 PVC pipe shall be manufactured from compounds conforming to PVC cell classification of 12454 as defined in ASTM D-1784. The pipe shall meet the requirements of the AWWA C-900-07 standard specification for polyvinyl chloride water distribution pipe. The integral bell joint system shall meet the requirements of ASTM D-3139 and utilize an elastomeric seal conforming to ASTM F-477. AWWA C-900 Pressure Pipe shall carry the NSF Standard 61, the Underwriters Laboratories Inc Standard 1285, and the Factory Mutual Research Water Distribution Pipe for Underground Fire Protection Service marks of acceptance.

The pipe shall be polyvinyl chloride plastic (PVC) DR-18. The following tests shall be run for each machine on each size and type of pipe being produced, as specified below:

Hydrostatic Proof Testing: Each standard and random length of C900 shall be tested to four times the pressure class of the pipe for a minimum of five seconds. The integral bell shall be tested with the pipe.

Quick Burst Test: Once per 24 hours in accordance with ASTM 5199.

<u>DR</u>	<u>Pressure Rating</u>	<u>Minimum Bursting Pressure, PSI</u>
18	235	755

Falling Weight Impact Tests: C900 pipe shall withstand an impact energy of 100 ft-lbs, per the requirements of UL 1285.

If any specimen fails to meet any of the above mentioned tests, all pipe of that sized and type manufactured between the test period must be scrapped and a full set of tests rerun.

Furnish a certificate from the pipe manufacturer stating that he is fully competent to manufacture AWWA C900 PVC pipe of uniform texture and strength and in full compliance with these specifications and further

stating that the company has manufactured such pipe for a continuous period of at least ten years. In addition the manufacturer's equipment and quality control facilities must be adequate to ensure that each extrusion of pipe is uniform in texture, dimensions, and strength. Also furnish a certificate from the manufacturer certifying that the pipe furnished for this project meets the requirements of these Specifications.

All pipe shall be manufactured in the United States of America. All pipe for any one project shall be made by the same manufacturer.

The pipe shall be furnished in laying lengths of 20'. The Contractor's methods of storing and handling the pipe shall be approved by the Engineer. Pipe shall be fully supported as recommended by the manufacturer. Stringing pipe along the proposed route in excess of one day's work will not be allowed.

Certain information shall be marked on each piece of pipe. At the least, this shall consist of:

Nominal Size
Type of material
DR or class
Manufacturer
NSF Seal of Approval

Pipe that fails to comply with the requirements set forth in these Specifications shall be rejected.

4.3 Ductile Iron Water Pipe

Ductile iron pipe shall meet the requirements of ANSI/AWWA C150/A21.50 and ANSI/AWWA C151/A21.51 and shall be NSF approved. All ductile iron pipe shall have a minimum pressure rating as specified on the Drawings. All ductile iron pipe shall be cement lined with an asphalt coating on the exterior of the line. In standard buried installation, ductile iron pipe shall be supplied with push-on type joints with SBR rubber, or other gasket material suitable for continuous service in a buried potable water pipeline. Pipe which will be exposed (e.g. above grade, or in vaults or buildings) shall have flanged joints. Pipe size, pressure class, NSF seal, and manufacturer's name shall be clearly marked on the exterior of each pipe joint.

All ductile iron pipe shall have Underwriter's Laboratories, Inc. approval and shall be approved by the National Sanitation Foundation for potable water use. All ductile iron pipe and fittings shall be manufactured in the United States. All pipe for any one project shall be made by the same manufacturer.

Restrained joint pipe and fittings shall meet all other requirements for ductile iron pipe and fittings set forth above, plus having a positive means of restraining the pipeline joint against separation due to internal pressure. All areas specifically designated for restrained ductile iron pipe (i.e. bends, steep slopes or bores) shall be done utilizing regular ductile iron pipe equipped with restraining gaskets. The gaskets shall be equivalent to the American Fast-Grip restrained joint gaskets product.

5.0 FITTINGS

All fittings shall be cast gray iron or ductile iron, cement lined, bituminous coated, manufactured in accordance with AWWA/ANSI Standards A21.10 and A21.11, latest revision, unless otherwise indicated or directed. Minimum pressure rating shall be 250 psi. Unless indicated otherwise on the Drawings, mechanical joint fittings shall be used.

6.0 RESILIENT SEAT GATE VALVES

Gate valves shall be iron body, resilient rubber seat type valves with non-rising stems. Three inch and smaller valves may be bronze body. Resilient seat gate valves shall have a bronze stem nut cast integrally with the cast iron valve disc. The valve shall be capable of being installed and operated in either direction and shall be furnished with mechanical joint ends. Valves shall be suitable for installation in an approximately vertical position in buried pipe lines. Stem seal shall consist of O-ring seals. All valves shall open to the left (counter-clockwise), and shall be provided with 2" square operating nut. All

underground gate valves which have nuts deeper than 30' below the valve box top shall have extended stems with nuts located within one foot of the valve box cap.

Valves shall be for working pressures up to 250 psi and shall be equal to latest specifications of AWWA C-509 in all respects. Valves shall be equal to American Flow 2500 or Mueller A-2360. All components shall be manufactured in the United States of America.

7.0 PRESSURE REDUCING VALVES

Individual pressure reducing valves (where presently utilized at a respective location) shall be replaced with a brass body, direct operating valve with screwed connections, suitable for reducing a varying upstream pressure to an adjustable, constant downstream pressure. Pressure reducing valves shall be designed for potable water use, lead free, and shall be Watts ¾" N-250 PRV or approved equal.

8.0 TAPPING SLEEVES AND VALVES

Tapping sleeves shall consist of a mechanical joint tapping sleeve equal to Ford FAST (for PVC tapped pipe). Tapping valves shall conform to all applicable specifications for resilient seat gate valves. All components shall be manufactured in the United States of America.

9.0 VALVE BOX FRAMES AND COVERS

Valves box frames and covers shall be made of heavy cast iron and shall meet the requirements of ASTM A-48, class 30, and shall be three-piece, 5 1/4" diameter barrel, screw type construction.

All casting shall be made accurately to the required dimensions and shall be sound, smooth, clear and free of blemished or other defects. Defective castings which have been plugged or otherwise treated to remedy defects shall be rejected. Contact surfaces of frames and covers are to be machined so that they rest securely in the frames with no rocking. The cover shall be in contact with the frame for the entire perimeter.

The valve box frames and covers shall be Tyler Union 6850 Series or approved equal. The Cover shall be marked "Water".

10.0 SERVICE CLAMPS AND CORPORATION STOPS

New service clamps, where needed, shall be used for all new taps made to the water line, and the service clamps and accessories shall be lead free. Service clamps shall be all bronze construction with neoprene gasket, equal to Ford S70 Series. Corporation stops shall include a quick nut assembly, the corporation stop shall be Ford F1000-3G-NL Grip Joint or approved equal and the pack joint coupling shall be Ford C44-33-G-NL or approved equal. Swivels and Inserts or Stiffeners shall be equipped to the corporation stops for added protection of the water service tubing with the use of compression fittings. Swivels shall be Ford L 104-33S for CTS plastic.

11.0 STEEL CASING PIPE

Where noted on the Drawings or required by these Specifications, roadway crossings shall be made utilizing carrier pipe within a casing pipe. Sizes of carrier pipe and casing pipe shall be as noted on the Drawings.

Casing joints shall be of fully welded, leak proof construction. The steel casing pipe shall have a minimum yield strength of 35,000 psi and shall have the minimum wall thickness of 0.25 inches for 12" nominal diameter and smaller pipe. Casing pipe larger than 12" shall have a wall thickness corresponding to ASTM standards for Standard Weight steel pipe. **Steel casing pipe shall be coal tar protected according to AWWA Standard C203-91 and C209-20.** Pipe shall be welded according to AWWA Standard C206-91 unless otherwise specified.

12.0 PIPELINE DETECTION WIRE

Pipeline detection wire shall be No. 12 solid copper insulated wire. The wire shall be attached to the top of the installed pipe with duct tape prior to backfilling, and the detection wire shall be spliced to seal out moisture. The splicing kit shall be or equal to 3M direct Bury Splice Kit (DBY). Completed sections of detection wire shall be periodically checked for continuity by the Contractor. The Contractor is responsible for the continuity of the wire sections, and shall take measures during construction to insure a working final product. If, upon completion of the continuity test, a section of wire fails, the Contractor shall make corrective measures and the test will be repeated until satisfactory results are obtained.

Precast concrete valve rings, with an embedded copper locator pin, will serve as a wire terminal point for testing and locating.

13.0 WATER SERVICE TUBING

Service line pipe shall be high-density polyethylene tubing "copper tube size" equal to Driscopipe, suitable for 200 psi working pressure. Detection wire as described above shall be attached to all far side service tubing connections. The wire shall begin at the meter box and terminate at the corporation stop with a water tight wire cap. The water service tubing shall be equipped with inserts or stiffeners do protect the tubing when utilizing compression fittings.

Service lines, where applicable, from the water meter to the customer reconnection point shall be ¾-inch Schedule 40 PVC pipe with solvent weld joints (glued), suitable for a minimum of 200 psi working pressure.

14.0 LARGE FIRE HYDRANT

Large Fire Hydrants, where specified, shall be 4" nominal diameter with 4 1/2" NST outlet. Hydrants shall be Mueller A-423 or approved equal. All components shall be manufactured in the United States of America.

15.0 POST HYDRANT

For 3-inch waterlines and smaller, Post hydrants shall be 3" nominal shoe diameter with 2 1/2" NST outlet equal to M&H Hydrant Style 33 or approved equal. All components shall be manufactured in the United States of America.

16.0 WATER METERS AND SETTERS

All water meters for the project will be supplied to the Contractor by the Owner. The new radio-read meters (Kamstrup Meter w/ Itron Radio) were procured via a separate contract within the Project. Coordinate the supply of meters with the Owner throughout the project.

A. 5/8"x3/4" Meter Installations/Reinstallations:

The meter setter shall include a dual check valve, ball valve, and grip nut. The replacement setter shall be Ford VBHH-72-7W-41-33-NL or approved equal. In cases where a tandem setter is presently utilized, the setter shall be Ford TVBHH-72-7W-41-33-NL or approved equal. All meter setters shall be "copper tube size", and all setters and other specified components shall be lead free. For tandem setter installations, the Owner requires that the Idler Bar, or at least the 'S' bar, be included with the typical tandem meter yoke.

B. 2-inch Meter Installations/Reinstallations:

The meter setter shall include a dual check valve and ball valve for oval flange meter. The replacement setter shall be Ford VVBH-77-12B-11-77NL or approved equal. All meter setters shall be "copper tube size", and all setters and other specified components shall be lead free.

17.0 CASING END SEALS & SPACERS

Casing end seals shall be heavy-duty rubber seals (Model ESW) as manufactured by CCI Pipeline Systems or approved equal. Casing Spacers shall be of heavy-duty two-piece stainless steel as manufactured by CCI Pipeline Systems (Model CSS-center restrained) or approved equal.

18.0 METER BOXES

All water meter boxes in the distribution system will be replaced as a part of this project.

A. 5/8"x3/4" Meter New Installations:

Meter boxes for 5/8"x3/4" setters shall be 18" in diameter x 24" in depth with cast iron lids. Meter boxes shall be green, ribbed or approved equal. The round metal lids shall be 18" in diameter with outer ring and a flat center surface. The lids require a 2" hole predrilled to allow for the particular automated meter reading system to be installed, and the contractor shall provide and install an 'Itron 100W Thru Lid Install Kit' (Part #CFG-1300-004). Meter boxes shall be manufactured by Hancor or approved equal. The Lids shall be Vestal (model WM-18) or approved equal. All components shall be manufactured in the United States of America.

B. 2-inch Meter New Installations:

Meter boxes for 2-inch setters shall be 36"x36" Black & White poly box with a 36"x18" extension ring to accommodate an 18" diameter round metal lid. The top round metal lid shall be 18" in diameter with outer ring and a flat center surface. The lids require a 2" hole predrilled to allow for the particular automated meter reading system to be installed, and the contractor shall provide and install an 'Itron 100W Thru Lid Install Kit' (Part #CFG-1300-004). The Lids shall be Vestal (model WM-18) or approved equal. All components shall be manufactured in the United States of America.

19.0 PRECAST VALVE BOXES & OTHER ITEMS

Precast concrete valve rings shall be 24-inches in diameter and 4-inches thick. Each ring shall be equipped with an embedded copper locator test pin, which will serve as a detection wire terminal point for locating nonmetallic pipelines.

Precast concrete items shall meet all requirements of ASTM C478. All concrete used in precast items shall have a compressive strength of at least 4,500 psi at 28 days

20.0 MECHANICAL JOINT PIPE RESTRAINT FOR PVC

Mechanical Joint Pipe Restraints for PVC waterlines shall be installed at all fittings, valves and hydrants. The pipe restraint system shall be Romac's GripRing product or an approved equal.

21.0 VALVE INSERTION (if applicable)

Valve Insertion (4"-16") shall meet general specifications of AWWA C-509-09 Resilient Wedge Material and AWWA M44 Water Supply Practices. The valve and gate body shall be ductile iron (ASTM.A536-65-45-12) with EPDM gate rubber and stainless steel valve stem. Fasteners shall be of a cathodic protected material or stainless steel, and the coating shall be corrosion-protection E-coating casting. The design of the valve shall include a pressure rating of 250 PSI with a 360 degree rubber seal around the wedge. The valve turns shall match that of a normal resilient seat gate valve.

END OF SECTION 02-200

WATER MAIN CONSTRUCTION

1.0 PRELIMINARY WORK

1.1 Engineer

All references to "Engineer" in this specification refers to the Utility's Engineer or City of Elkton's engineering representative.

1.2 Location of Lines

The Contractor shall install the proposed lines and/or appurtenances in the locations indicated on the plans, except where field conditions are encountered which warrant relocation. Any field relocation of the pipelines and/or appurtenances shall be approved by the Engineer's Representative at the time of construction. In no event shall any improvements be installed outside of properties, easements or right-of-way secured by the Owner for the Project.

1.3 Locations and Protection of Underground Utilities

Prior to trenching, excavating, or disturbing the ground surface in any manner, the Contractor shall determine, insofar as possible, the actual location of all underground utilities in the vicinity of the proposed construction and shall clearly mark their locations so that they may be avoided by equipment operators. Where such utility lines appear to lie in the path of construction, they shall be uncovered in advance to determine the exact location and depth, and to avoid damage due to Contractor's operations. Existing facilities shall be protected during construction, or removed and replaced in equal condition as necessary.

Should any existing utility line or service be damaged during, or as a result of the Contractor's operations, the Contractor shall take such emergency measures as may be necessary to minimize damage and shall immediately notify the utility involved. The Contractor shall then repair the damage to the satisfaction of the utility or shall pay the utility for making the repairs. In all cases, the restoration or repair shall be such that the repaired item will be in as good or better condition as before the damage occurred.

1.4 Removal of Obstructions

The Contractor shall be responsible for the removal, safeguarding and replacement of fences, walls, structures, culverts, street signs, billboards, shrubs, mailboxes, or other obstructions which must be moved to facilitate construction. Such obstructions must be restored to at least their original condition.

1.5 Clearing and Grubbing

The contractor shall be responsible for cutting, removing and disposing of all trees, brush, stumps, roots, and weeds within the construction area. Disposal shall be by means of chippers, landfills, or other approved methods not in conflict with State or local ordinances.

Avoid cutting or damage to trees not in the construction area. The Contractor will be responsible for the replacement of trees, shrubs, etc. unnecessarily damaged or removed.

1.6 Crops and Livestock

Any agricultural crop or product, or any livestock that is injured, damaged, lost or destroyed by the construction operations shall be the responsibility of the Contractor. The Contractor shall take precautions to avoid or minimize such damage, and shall compensate the owner of the crop or livestock for any loss that may result from construction operations.

2.0 EXCAVATION

2.1 General

The Contractor shall perform all required excavation and backfilling incidental to the installation of the water line, valves, services, and other appurtenances under this contract. Excavation shall be carried to the depths indicated on the Drawings or as necessary to permit the proper installation of pipe, bedding, structures or appurtenances. Care shall be taken to provide a firm, undisturbed, uniform surface in the bottoms of trenches and excavations. Where the excavation exceeds the required depth, the Contractor shall bring the excavation to proper grade through the use of an approved incompressible backfill material (generally crushed stone or fill concrete, depending upon the nature of the item to be placed thereon). In the event that unstable soil conditions are encountered at the bottom of the excavation, the Engineer may direct the Contractor to continue the excavation to firm soil, or to provide a suitable special foundation.

The Contractor shall take such precautions as may be necessary to avoid endangering personnel, pavement, adjacent utilities or structures, etc. through cave-ins, slides, settlement or other soil disturbance resulting from his operations.

The Contractor shall be responsible for storage of excavated materials, disposal of surplus excavated material, trench dewatering and other and other operations incidental to excavation and backfilling operations.

2.2 Trenching and Excavation Safety

The Contractor shall be responsible for safe trenching and excavating operations. The Contractor's responsibilities in this regard include complying with all OSHA requirements regarding trench and excavation safety, providing a person knowledgeable in excavation operations and safety (a Competent Person as defined by OSHA) to supervise all trenching and excavation activities, providing all required equipment and supplies to safely complete the work, continuously monitor soil conditions and make adjustments in the trenching and excavation methods (e.g. lay back trench sides, provide shoring, etc.) where necessary to provide for safe working conditions, guarding or barricading open trenches and excavations, and other considerations to insure safety. Providing for the safety of the workers and others in the vicinity of the construction operations takes precedence over all other considerations. Any damage to property, injury or loss of life resulting from trench or excavation failure shall be the sole responsibility of the Contractor.

2.3 Classification of Excavation

Excavation shall be unclassified and the cost of excavation shall be merged into the price per foot for the water main. No distinction will be made between rock and soil excavation, and no claim for additional payment will be considered if based upon the type or character of material encountered.

2.4 Pavement Removal

Where existing paved streets, roads, parking lots, drives or sidewalks must be disturbed during construction of the project, the Contractor shall take the necessary steps to minimize damage. Permanent type pavement shall be sawed in a straight line before removal, and care shall be taken during excavation to avoid damage to adjacent pavement. Where trucks or other heavy equipment must cross curbs or sidewalks, such areas shall be suitably protected.

2.5 Trench Excavation

Trenches shall be excavated in a neat and workmanlike manner, maintaining proper alignment except where necessary to make deviations to miss obstructions. Trenching for the installation of water distribution piping shall be such that the pipe will have a minimum cover of thirty (30) inches. The bottom of the trench must be shaped by hand and bell holes must be dug so that the full length of pipe is resting on sound trench bottom. Blocking shall not be used. In some cases, more than 30 inches of cover will be necessary to cross under existing utilities, obstructions, etc., or where the completed grade will be below

the grade at the time of construction. This additional depth, when required, shall be merged into the unit bid price for water main construction.

Trenches shall be opened far enough in advance of pipe laying to reveal obstructions, but in general shall not include more than 300 feet of continuous open trench at any time. The Contractor will be required to follow up trenching operations promptly with pipe laying, backfill and clean-up, and in the event of failure to do so, may be prohibited from opening additional trench until such work is completed.

The Contractor shall plan his operations so as to cause a minimum of inconvenience to property owners and to traffic. No road, street or alley may be closed unless absolutely necessary, and then only if the following conditions are met:

1. Permit is secured from appropriate State, County or Municipal authorities having jurisdiction.
2. Fire, police and other emergency services providers are notified before the road is closed.
3. Suitable detours are provided and clearly marked.

No driveway shall be cut or blocked without first notifying the occupants of the property. Every effort shall be made to schedule the blocking of drives to suit the occupant's convenience, and in no case shall a driveway be blocked overnight.

The Contractor shall furnish and maintain barricades, signs, flashing lights, and other warning devices as necessary for the protection of public safety. Flagmen shall be provided as required on heavily traveled streets to help avoid traffic jams or accidents.

Trench width shall be held to a minimum consistent with proper working space for the assembly of pipe. Maximum trench width up to a point one foot above the top of pipe shall be limited to the outside diameter of the pipe plus 16". Boulders, large stones, shale and rock shall be removed to provide clearance of 6" below and on each side of the pipe.

Trench walls shall be kept as nearly vertical as possible with due consideration to soil conditions encountered and when necessary, sheeting or bracing shall be provided to protect life and property.

Where unsuitable soil conditions are encountered at the trench bottom, the Contractor shall remove the additional material as may be directed by the Engineer and replace the excavated material with approved backfill.

The Contractor shall excavate by hand wherever necessary to protect existing structures or utilities from damage or to prevent overdepth excavation in the trench subgrade.

Excavated material shall be stored safely away from the edge of the trench and in such a way as to avoid encroachment of private property.

2.6 Excavation for Structures

Excavation for air release valve installations, metering pits or other appurtenances shall be only as large as may be required for the structure or appurtenance, and for working room around it. In soil, excavation shall generally extend to the outer limits of the structure plus working space at the bottom, and shall slope outward as such an angle as may be required to insure stability of the excavated face. In rock, excavation shall be carried to a point at least 12 inches outside the structure, or as required to achieve proper placement of the backfill. No rock shall be placed or left within 12 inches of the finished structure.

Care shall be taken as the excavation approaches the desired grade to avoid overdepth excavation and provide a firm and undisturbed soil surface on which footings, slabs or foundations are to be placed. Should the Contractor excavate below the desired grade level, the excavation shall be brought to grade by the use of fill concrete at the expense of the Contractor. The use of tamped earth refill beneath foundations, footings or slabs will not be acceptable.

Where structures rest partially or completely upon rock, the rock shall be excavated to a point 6 inches below the bottom elevation of the proposed structure, and crushed stone refill shall be used to bring the excavation back to grade.

Should the material found at the desired subgrade appear to be unstable or otherwise unsuitable for support of the structure, the condition shall be immediately called to the attention of the Engineer. The Engineer may direct that the unsuitable material be removed and replaced with concrete, or that the foundation design be modified to accommodate the conditions encountered. In any event, work in the area affected by the unstable subgrade shall not proceed until the matter is resolved by the Engineer.

2.7 Rock Excavation

Where rock excavation is encountered in trenches, the excavation shall be carried to a depth of at least 6 inches below the bottom of the proposed pipe. The rock shall also be removed to a width of at least 6 inches beyond the pipe on each side so that no rock is left within 6 inches of the outside wall of the pipe. Where rock is excavated in the bottom of the trench, the trench shall be brought back to grade by the use of crushed stone which shall be compacted to form a stable base for the pipe laying operation. If approved in advance by the Engineer, clean excavated soil that is free from rocks may be used in lieu of crushed stone as bedding.

The Contractor shall exercise all necessary precautions in blasting operations. Suitable blasting mats shall be provided and utilized as required. Blasting shall be done only by experienced personnel with all required training and certifications. Careless shooting, resulting in the ejection of stones or other debris during blasting shall be corrected immediately by the Contractor. The Contractor shall be responsible for any personal injury or property damage that results his from blasting.

No blasting shall be done unless the Contractor shall have taken out the necessary insurance to fully protect the Owner from all possible damages resulting from the blasting operations. The blasting shall be done in accordance with all recognized safety precautions and in accordance with regulations of authorities having jurisdiction. In addition, the Contractor shall exercise the necessary care to safeguard the stores of blasting materials on the jobsite.

Where rock is encountered in the immediate vicinity of gas mains, telephone cables, building footings, gasoline tanks, or other hazardous areas, the Contractor shall remove the rock in a manner that will insure protection of these structures. Care shall be taken in the blasting operations to see that the pipe or other structures previously installed are not damaged by blasting. In general, blasting shall not be done within 25 feet of an existing pipeline or structure.

2.8 Disposal of Surplus Excavated Material

Excavated material that is unsuitable or unnecessary for backfilling shall be disposed of by the Contractor. Disposal may be by landfill, or other legal means. Where material is disposed of on private property, the Contractor is responsible for obtaining permission in writing from the property owner and for restoration of the disposal site to the property owner's satisfaction.

2.9 Subsurface Obstructions

In excavating, backfilling and laying pipe, do not remove, disturb or damage other pipe, conduit or structures without the approval of the Engineer. If necessary, the Contractor shall sling, shore up and maintain such structures in operation, and within a reasonable time shall repair any damage done thereto. Repairs to these facilities shall be made to the satisfaction of the Engineer.

The Contractor shall give sufficient notice to the interested utility of his intention to remove or disturb any other pipe, conduit, etc., and shall abide by their regulations governing such work. In the event that subsurface items are damaged in the prosecution of the work, the Contractor shall immediately notify the proper authorities and shall be responsible for any loss to persons or property caused by the damage.

When pipes or conduits providing service to adjoining buildings are broken during the progress of the work overnight or for needlessly long periods during the day, will not be tolerated, and the Owner reserves the

right to make repairs at the Contractor's expense without prior notification. Should it become necessary to move the position of a pipe, conduit, or structure, it shall be done by the Contractor in strict accordance with instructions given by the Engineer or the utility involved.

The Owner or Engineer will not be liable for any claim made by the Contractor based on underground obstructions being different than that indicated on the Plans. Where ordered by the Engineer, the Contractor shall uncover subsurface obstructions in advance of construction so that the method of avoiding same may be determined before pipe laying reaches the obstructions.

The Contractor shall be governed by instructions of the Kentucky Transportation Cabinet and/or County Road Department regarding the laying of pipe along and/or within State/County Roadways.

2.10 Special Conditions

Special care must be exercised in excavation under or near State Highways, railroads, or other areas as designated on the Drawings in order to avoid or minimize delays or injuries resulting therefrom. Where it is necessary to cross beneath state highways, railroads, or other designated areas, the Contractor shall make such installations as shown on the Drawings and/or as directed by the Department of Highways or the Railroad.

The Contractor's attention is also called to the special conditions associated with the proximity of the Owner's existing water distribution system in relation to improvements indicated on the Plans. Some of the proposed improvements will be constructed adjacent to and/or may encounter existing water lines that must remain in service until the successful testing and completion of the proposed improvements. The Contractor is reminded of paragraph 2.1 of Section 02-100, and the Contractor is urged to use the most appropriate construction measures to produce a suitable finished product while maintaining the integrity of the existing infrastructure.

3.0 INSTALLATION OF WATER LINE AND APPURTENANCES

3.1 General

The Contractor shall use only experienced men in the final assembly of pipe in the trench,, and all pipe shall be laid in accordance with these Specifications and the recommended practice of the pipe manufacturer. Trench bottoms shall be carefully prepared and shall be free of water.

Care shall be exercised to insure that pipe of the proper strength or classification meeting the specifications in every respect is provided at the site of pipe laying operations. Recommended tools, equipment, lubricant and other accessories needed for proper assembly or installation of the pipe shall be provided at the site of work. Any damaged or defective pipe discovered during the pipe laying operations shall be discarded and removed from the site of the pipe laying operations.

The Contractor shall exercise care in the storage and handling of pipe, both on the storage yard and at the site of laying operations. Suitable clamps, slings, or other lifting devices shall be provided for handling large-diameter pipe and fittings.

Pipe may be assembled at grade and lowered into the trench provided that no more than 10 joints are lowered at one time, and the pipe is inspected after it is lowered into the trench to assure that no decoupling of joints occurs.

Bell holes for bell and spigot and mechanical joint pipe shall be dug in the trench to allow entire length of pipe barrel to be bedded and to allow proper jointing of pipe. Alignment of pipe shall be as true as possible in order to avoid air pockets. When work is suspended either for the night or for any other reason, open ends of the pipe shall be securely plugged to prevent the entrance of foreign materials. Dead ends of the pipe and unused branches of crosses, tees, valves, etc., shall be closed with plugs suitable to the type of pipe in use.

Cutting of pipe shall be done in a neat, workmanlike manner without damage to pipe, coatings and linings and so that a smooth end remains at right angles to the axis of the pipe.

3.2 Removal of Water

The Contractor shall be responsible for handling run-off, ground water, and sewage in such a way as to maintain trenches and excavations in a dry condition until the work is completed. Pumps, piping, well points, labor, fuel, and other facilities necessary to control, intercept, remove and/or dispose of water shall be provided by the Contractor at his own expense. Water removed from trenches or holes shall be discharged to natural drains in such a way as to avoid danger or damage to adjacent property owners or sewers. No Pipe shall be laid with water in the bells.

Where the Contractor fails, refuses, or neglects to control water in trenches or other excavations, and corrective work is deemed by the Engineer to be necessary as a consequence thereof, such work shall be at the Contractor's expense.

3.3 Polyvinyl Chloride Pipe (Class 200 PVC)

Installation of polyvinyl chloride pipe shall conform to ASTM 2321 and AWWA C900, latest revision. Pipe shall be bedded in clean, uniform soil or compacted granular material and compacted granular material to a point 8" over pipe. Blocking shall not be used to bring the pipe to grade. Whenever it is necessary to cut a joint of pipe in order to fit the trench conditions, the cutting may be made with either hand or mechanical saws or plastic pipe cutters. The cut shall be square and perpendicular to the pipe axis. The cut end shall be beveled as specified by the pipe manufacturer. Assemble all joints by fully seating spigot into bell.

3.4 Ductile Iron Pipe

Installation of ductile iron pipe shall conform to AWWA C150 & C151, latest revision. Pipe shall be bedded and backfilled in conformance with the details shown on the Plans. Blocking shall not be used to bring the pipe to grade. The trench shall be backfilled as indicated on the Drawings so as to achieve a Class III laying condition. Whenever it is necessary to cut a joint of pipe in order to fit the trench conditions, the cutting shall be made in a suitable pipe fabrication shop with mechanical saws. The cut shall be square and perpendicular to the pipe axis. The cut end shall be beveled as specified by the pipe manufacturer. Assemble all joints by fully seating spigot into bell, using an approved gasket lubricant.

Restrained joint ductile iron pipe shall be installed in full conformance with the pipe manufacturer's recommendations. Backfill to 12 inches above restrained joint pipe shall be with granular material (crushed limestone aggregate) to assure maximum friction between the pipe wall and backfill. Should soil conditions be encountered that would require restrained joint pipe to be encased in polyethylene for corrosion protection, an increased length of restrained joint pipe may be required. The Contractor shall ascertain the need for polyethylene encasement from the Engineer sufficiently in advance to allow for installation of the appropriate length of restrained joint pipe.

3.5 Installation of Fittings

Fittings in pipe lines shall be firmly secured to prevent the fitting from being blown off the line when under pressure. When connections are made between the new work and existing mains, the connections shall be made using specials and fittings to suit the actual conditions.

All tees, caps, plugs, bends or other fittings subjected to unbalanced forces tending to pull the joints apart shall be protected with concrete thrust blocks. Thrust blocks shall be provided in accordance with details shown on Drawings, and must bear against an undisturbed trench face. Thrust blocks must be used unless written permission is obtained from the engineer to use special locked-joint fittings, anchoring fittings, or pipe clamps with tie rods.

Fittings shall be placed in locations indicated on Drawings or designated by Engineer and shall be installed in accordance with provisions of these Specifications. Joints shall be as designated under Section 2, Materials.

Before being placed in trench, all fittings shall be subjected to inspection by Engineer; and any defective, unsound or damaged fittings shall be rejected and Contractor shall remove at once from work area.

3.6 Installation of Valves, Valve Boxes

Valves shall be placed in the locations indicated on the Plans or at locations designated by the Engineer. All Valves shall be set vertically. Before being placed in the trench, all valves shall be carefully examined by the Contractor and engineer to see that they are in good working order.

Over each valve shall be placed a valve box. All valves which, when properly set, have operating nuts deeper than 24" below the top of the valve box shall have extension stems with operating nuts located within one foot of the valve box cap.

The valve box shall not come in contact with valve at any point. Backfill around boxes shall be tamped to maintain centered and plumbed alignment of box. The finished valve box installation shall allow a standard valve wrench to be seated on the operating nut and removed easily without contacting the valve box.

Box shall be installed with top set flush with finished surface in paved areas and 1 inch above natural ground level in unpaved areas.

4.0 BACKFILL

4.1 General

Backfilling shall be carried out as expeditiously as possible, but shall not be undertaken until the Engineer's representative has been given the opportunity to observe the work. The Contractor must carry out all backfilling operations with due regard to: the protection of pipes, structures and appurtenances; the use of prescribed backfill materials; and procedures to obtain the desired degree of compaction. No equipment may be used which will result in damage to or misalignment of the pipe.

4.2 Acceptable Backfill Material

All backfill material shall be free from cinders, ashes, refuse, vegetable or organic material, boulders, rocks or stones, or other material that in the opinion of the Engineer is unsuitable. From eight inches above the top of the pipe to within six inches of finished grade in unpaved areas, backfill may contain stones up to six inches in their greatest dimension, unless otherwise specified. Backfill containing rock must contain enough soil to fill voids between rocks.

When backfill material is not specified on Project Plans or elsewhere in these Specifications, Contractor may backfill with the excavated material provided material consists of loam, clay, sand, gravel, or other materials than, in opinion of Engineer, are suitable for backfilling.

Backfilling shall not be done in freezing weather and it shall not be made with frozen material. No fill shall be made where material already in trench is frozen. Backfill shall not be made with material which, in Engineer's opinion, is too wet.

Where crushed stone backfill is required the crushed stone shall be No. 57 size as designated by Kentucky Department of Transportation Standards for crushed stone used in road surfacing.

4.3 Backfilling Under Pipe in Rock

Where trench is excavated in rock or shale, a 6" space below pipe shall be backfilled with approved bedding material (#9 or #11 pipe bedding, or uniform soil meeting the approval of the Engineer) to form a cushion for pipe and appurtenances.

4.5 Backfilling Over Pipe

Backfill over pipe may be placed by means of front end loaders, bulldozers or other suitable mechanical equipment provided that the pipe is not damaged or misaligned.

4.6 In Areas Subject to Vehicular Traffic

Where excavation is made through pavement, curbs, driveways, sidewalks, road shoulders, or other areas subject to vehicular traffic or supporting permanent structures, or where such areas, items or structures are undercut by excavation, entire backfill shall be crushed stone (No. 57). Crushed stone shall be carefully placed to achieve maximum density.

Where excavation is made through permanent pavements, backfill shall be placed as described above to subgrade elevation only. Remainder of backfill shall be crushed stone placed as directed to finished pavement grade to serve as temporary pavement.

The last 6 inches of backfill shall be compacted dense grade aggregate to stabilize trench cut.

From time that backfilling is complete until time permanent pavement surface is replaced or, in absence of pavement replacement, until job is accepted, Contractor shall, at direction of Engineer, water streets, roads, etc., to settle dust where excessive dust has, in opinion of Engineer, been caused by Contractor's operations. If Contractor refuses Owner shall, after 24 hours written notice through Engineer, be permitted to proceed with such work with cost to be billed to Contractor.

In Areas Not Subject to Vehicular Traffic- Where excavation is made in areas not subject to vehicular traffic or supporting permanent structures and where settlement is allowable, Contractor may backfill with approved excavated material using acceptable mechanical methods. Backfill material shall be brought up to the original ground level and shall then be mounded over to provide for additional settlement. Compaction of this backfill material will not be required, however, the Contractor shall exercise care to confine the mound to the area immediately over the trench and shall be responsible for bringing in such additional fill material as may be required from time to time during the one year warranty period to fill in areas where excessive settlement has occurred, and to re-seed these areas.

5.0 COMPLETING INSTALLATION OF LINES, STRUCTURES, ETC.

5.1 General

The Contractor shall not, without the permission of the Engineer, remove from the line of work any earth excavated therefrom which may be suitable for backfilling or surfacing until the excavation has been refilled and surfaced.

As soon as the backfilling of any excavation is completed and when in areas of existing development, the contractor must at once begin the removal of all surplus dirt except that actually necessary to provide for the settlement of the fill. He shall also remove all the pipe and other material placed or left on the street by him except material needed for the replacement of paving, and the street shall be opened up and made passable for traffic. Following the above work, the repairing and complete restoration of the street surfaces, bridged, crossings, and all places affected by the work shall be done as promptly as possible. All excavated material shall be cleared from adjacent street surfaces, gutters, sidewalks, parkways, railroads, grass plots, yards etc., and the whole work shall be left in tidy and acceptable condition. Contractor will be required to re-grass lawns or natural grounds where trenches are excavated in these locations or where Contractor has damaged lawns or natural grounds by his operations.

The engineer shall be sole authority in determining time in which rough and final clean-up shall be performed. Rough clean-up shall consist of removal of large rocks, grading of excess backfill material over pipe line or removal of said material, opening of any drainage device, restoration of any street or roadway to condition so that traffic may safely and conveniently use street or roadway, restoration of pedestrian ways to condition where pedestrians may safely and conveniently use same. Rough clean-up shall, in general, be prosecuted no later than 1 day after pipe laying and backfilling or no farther behind pipe laying operations than 1000 feet; whichever time limit is shortest shall govern. Final clean-up

consisting of pavement replacement, sidewalk replacement, removal of small rocks, hand raking with seeding, strawing, etc., of lawns and natural grounds, adjusting grade of ground over pipeline, property repair, and other items shall be prosecuted as soon as is practical after pipe has been laid and backfilled.

5.2 Final Grading and Seeding

Final Grading and Seeding shall be in compliance and equal to the Erosion Control requirements set forth in the Kentucky Transportation Cabinet's (KYTC) Standard Specifications, Section 212. Other final clean-up requirements and payment measurement for various land uses is defined in Technical Specification 02-500, Section 3.0.

The Contractor shall perform permanent seeding and final grading for areas where grass growth was damaged or destroyed by the Contractor's operation, and this work shall only be done during the period of September 1 thru April 30, unless specifically waived by the Owner. Between installation and final grading, the affected area must be stabilized by other practical methods to prevent erosion and protect the exposed areas. In areas of established lawns no rock shall be left in the top 6" of soil and the finished grade shall be equivalent to that which existed before construction began. In all cases, lawn and pasture areas shall be left neat and in a condition so that mowing is as easy and convenient as before construction began. The lawn areas and other areas disturbed by the Contractor's activities shall have ground cover restored to a condition satisfying the affected landowner and Owner.

Final Grading and Seeding requirements are as indicated below:

1. Placement of Topsoil: Where warranted and requested, topsoil shall be spread after grading and shaping of the area to receive the material is completed and seeding and protection operations are ready to begin. Spread and lightly compact the topsoil to uniform depth of approximately 6 inches over areas specified by the Owner or Engineer. Topsoil should not be placed on slopes steeper than 3:1.
2. Seed Mixture for Permanent Seeding: For permanent seeding on slopes 3:1 or less, a Type 1 seed mix shall be applied at a minimum rate of 100 pounds per acre. For steeper slopes, apply a Type 3 mix as specified in the KYTC Standard Specification 212.03.03.
Seed Mix Type 1:
 - 30% Kentucky 31 Tall Fescue
 - 20% Creeping Red Fescue
 - 35% Hard Fescue
 - 10% Ryegrass, Annual
 - 5% White Dutch Clover
3. Procedure for Permanent Seeding: Prepare a seedbed and incorporate a minimum of 100 pounds of nitrogen, 100 pounds of phosphate, 100 pounds of potash, and 3 tons of agricultural limestone per acre. Add additional fertilizer and agricultural limestone as needed. Do not apply dry agricultural Limestone when it may generate a traffic hazard. Remove all rock in the top 6" of the soil, and all dirt clods over 4 inches in diameter shall be removed from the surface of the seedbed. All seeding shall be mechanically tracked into the seedbed, utilizing a power seeder, Harley rake, cultipacker, or other approved device. For all slopes 3:1 or greater, ensure that tracking is performed up and down and not across. Seed and mulch to produce a uniform vegetation cover using the seeding rates as indicated to each application. Mulch with clean, weed free straw. Place straw to an approximate 2-inch loose depth (2 tons per acre) and anchor it into the soil by mechanically crimping it into the soil surface or applying tackifier to provide a protective cover. For the periods of March 1 through May 15 and from September 1 through November 1, the Owner will allow the option of using hydromulch at minimum rate of 1,500 pounds per acre in place of straw with tackifier. Regardless of materials used, ensure the protective cover holds until seeding is acceptably established.
4. Maintenance of Seeded Areas during Warranty Period: From the time seeding and protection work begins until the date the project is declared complete (i.e. Warranty Expiration), keep all seeded areas in good condition at all times. Promptly repair any damage to seeded areas or to mulch materials as directed.

5. Upon completion of final clean-up, the UTILITY may request that the CONTRACTOR obtain each property owner's written release, indicating the affected owner's satisfaction with final seeding, grading and/or crop damage restitution.

5.3 Pavement Replacement

In roadway or driveway areas as soon as the pipe has been installed, the trench shall be backfilled as specified and the surface replaced as indicated below:

1. Asphalt Highway or Roadways

This item of pavement restoration shall conform to the details included in the Contract Drawings. The leveling course, binder course and the surface course shall be furnished and placed in accordance with Kentucky Department of Transportation Standard Specifications.

2. Asphalt Driveway and Parking Lot Replacement.

Asphalt Driveways and Parking Lots shall be replaced equal to that existing prior to construction and shall consist of no less than 2 inches of surface course conforming to the Kentucky Department of Transportation Standard Specifications.

3. Crushed Stone Roadway Replacement or Driveway Replacement

Crushed Stone Roadways and Pavement shall be replaced to that existing prior to construction but in no case less than 6 inches in depth.

5.4 Dust Control

From time that backfilling is complete until time permanent pavement surface is replaced or, in absence of pavement replacement, until the job is accepted, Contractor shall, at direction of Engineer, water streets, roads, etc. to settle dust where excessive dust has, in opinion of Engineer, been caused by Contractor's operations. If Contractor refuses or delays unnecessarily to obey direction of Engineer, the Owner shall, after 24 hours written notice through engineer, be permitted to proceed with such work with cost to be billed to Contractor.

5.5 Sodding or Sprigging

Where shown on the Drawings or directed by engineer, contractor shall install grass sod or sprigs in lieu of seeding in order to establish ground cover. Normally this would be done in steep areas or areas otherwise subject to erosion.

Such sodding or sprigging when authorized by the engineer as a necessary part of the work and not elected to be used by the Contractor in lieu of seeding shall be a separate pay item if identified separately on the Bid Form.

Prior to sodding or sprigging, soil shall be properly prepared and fertilized. The top 3" of soil shall be pulverized to remove roots, sticks, etc. and smooth the surface. The area shall be fertilized at a minimum rate of 500 pounds per acre. Fertilizer shall be mixed into the top 3" of soil by raking, disking, or other acceptable method. Do not over fertilize areas in order to avoid damaging growth. Fertilizer shall be "Vertigreen", "Vigaro", or approved equal. It shall contain not less than 10% nitrogen, 10% phosphorus, and 10% potash. If the area soil requires adjustment of the pH for proper growth of ground cover, ground limestone shall be applied to bring the pH into the proper range.

Sod shall be at least 8" wide and 12" long with at least 3" of dirt on the roots. The variety of grass shall be suitable to the growing conditions of the area, and compatible with the adjacent grasses. It shall be placed on the prepared surfaces with edges in close contact and, as much as is practicable, in a position to break joints. Each section shall be pounded into place with wooden tamps or other approved implements. Sod shall be maintained moist from the time of its removal until reset and shall be reset as

soon as practicable after removal. Immediately after placing, it shall be rolled or hand tamped to the satisfaction of the Engineer. On steep slopes pinning or pegging will be required to hold the sod in place.

Sprigs shall be placed in a random manner at spacing suitable for optimum growth and cover as recommended by the supplier.

Immediately prior to sodding or sprigging, the area shall be sprinkled until saturated to at least 1" depth and kept moist until sodding or sprigging is completed. Sprigs or sod shall be watered as required after setting (normally through a 14-day period). Contractor shall not allow any equipment or material on any planted area and shall erect barricades and guards if necessary to prevent his equipment, labor or the public from traveling on any planted area until satisfactory growth is established.

6.0 SPECIAL CONSTRUCTION ITEMS

6.1 Roadway Crossings

Roads, streets or highways will be crossed at locations and in the manner as designated by the Drawings. State Highway crossings will be subject to the requirements of the crossing permit obtained from the Kentucky Transportation Cabinet.

When working in or near lines of traffic, the Contractor shall provide warning signals or flag men as required by Kentucky Transportation cabinet.

6.1 Sinkholes

When excavating within an area draining to a sinkhole, special precautions shall be required to avoid excessive silt runoff or debris entering the sinkhole. In such areas, the excavation shall be closed as quickly as possible and the surface restored and mulched to avoid erosion. In the immediate vicinity of sinkholes and when ordered by the Engineer, special erosion control measures as specified in Section 6.3 are to be used.

6.2 Slope Protection and Erosion Control

This section shall consist of temporary control measures as shown in the Drawings or directed by the Engineer or as required by the State of Kentucky - Water Pollution Control Division during the life of the contract to control erosion and water pollution through the use of silt fences, hay bales and other control devices.

- a. Baled hay or straw erosion checks are temporary measures to control erosion and prevent siltation. Bales shall be either hay or straw containing five (5) cubic feet or more of natural material.
- b. Baled hay or straw erosion checks - hay or straw erosion checks shall be embedded in the ground 4 to 6 inches to prevent water flowing under them. These bales shall be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales may remain in place after construction, or be removed after they have served their purpose, as determined by the Engineer. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris and sediment clear-out will be considered routine maintenance to be performed by the contractor as needed.
- c. Temporary silt fences - Silt fences utilizing posts, filter cloth (burlap or plastic filter fabric, etc.) or other approved materials are temporary measures to erosion control. These fences shall be installed to retain suspended silt particles in the run-off-water where directed by the Engineer.
- d. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or permanent erosion control methods are installed. Any materials removed shall become the property of the Contractor.

- e. Erosion control outside project area - Temporary pollution control measures shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads and equipment storage sited. Bid price in such cases shall include all necessary clearing and grubbing, construction incidentals, maintenance, and site restoration when no longer needed.
- f. No separate measurement and payment will be made for this work. It will be considered a subsidiary obligation of the Contractor under other bid items.

END OF SECTION 02-300

WATER MAIN TESTING AND ACCEPTANCE

1.0 GENERAL

Upon completion of the construction work the Contractor shall conduct the necessary pressure and leakage tests, and shall disinfect the completed water mains and appurtenances. The Contractor shall furnish all labor, tools, equipment and materials for making the tests. In the event that the pressure or leakage test is unsatisfactory, or bacteriological tests indicate that disinfection is incomplete, the Contractor shall take corrective measures and shall repeat the tests until satisfactory results are obtained. Tests shall be made in the presence of an authorized representative of the Engineer.

1.1 Pressure and Leakage Tests

Each section of the completed water main extension shall be subjected to a pressure test. The section to be tested shall be valved off after having been filled with water, and a positive displacement test pump shall be used to pump clean water into the section to build up a test pressure of at least 150 psi at the highest point within the section of line being tested, but not exceeding 200 psi at the lowest point. The test pump shall then be valved off from the system and the pressure shall be observed over a period of four hours. A drop in pressure of 5 psi or more during the first hour of the four test shall be taken as an indication of leakage. In the event leaks are found and corrected, the Contractor shall repeat the pressure test using the same procedure described above. Should the Contractor be unable to obtain a satisfactory pressure test over a duration of four hours, he shall then be required to perform a leakage test using a water tap and standard water meter to measure the leakage in the test section at system pressure over a period of 24 hours. Leakage during the 24 hour period must not exceed the allowable leakage for mechanical or push-on joints as shown in Table 7 of ANSI/AWWA C600, latest revision. Should the system fail to pass the leakage test, the Contractor will be required to locate and correct the leaks and to retest the system until satisfactory results can be obtained.

The Contractor shall provide suitable first quality pressure gauges with 5 lb. or smaller graduations and a standard 5/8" X 3/4" water meter in the event the meter is required for the leakage test. Pressure gauges and water meter shall be in good condition and shall be subject to such tests for proof of accuracy as the Engineer may require.

1.2 Disinfection

All water main extensions and appurtenances shall be disinfected upon completion, and after the system has been flushed to remove dirt or foreign objects which may have been accidentally introduced into the line. Disinfection shall be accomplished by use of a main sterilizer for applying chlorine gas or a hypochlorinator for application of a hypochlorite solution.

The chlorine shall be introduced into the main as water is being added so that adequate mixing will occur. Chlorine shall be added until a concentration of not less than 50 parts per million of available chlorine is observed at check points throughout the section being disinfected. The chlorine solution shall be left in the mains for a period of 24 hours after which the mains shall be flushed until only the normal residual chlorine found in tap water is present. Samples of water shall then be taken by standard sampling methods approved by the Engineer and the Owner and shall be submitted to a certified bacteriological testing laboratory for analysis. In the event any of the bacteriological samples show the presence of coliform organisms, the disinfection procedure shall be repeated until samples of satisfactory bacteriological quality can be obtained.

The Contractor shall furnish the chlorine for main disinfection and shall furnish all labor, tools and equipment for the disinfection. The Owner will furnish water for one cycle of disinfection and flushing. Water for subsequent testing of a line will be charged to the contractor. Disinfection procedures shall generally be in accordance with the AWWA Standard for Disinfecting Water Mains. AWWA C601, latest revision.

1.3 Water for Testing

The pipeline shall be tested using potable water. The Contractor shall make arrangements with the Owner prior to testing for quantity and suitable testing times based upon demand conditions. The Contractor is responsible for making and removing any temporary connections between the water main and the existing potable water lines, and coordinating the work with the affected utility. Any temporary taps, blowoffs, or other modifications to the water main to facilitate flushing are also to be made and removed by the contractor.

The rate at which water may be drawn from the utility providing the test water shall be set by the utility, and the Contractor will be required to limit the draw of water as dictated by the utility. During certain times of the year or certain demand conditions, water for testing may not be available. If this occurs, testing may be delayed as necessary to accommodate the water shortage, and the Contractor shall be granted an extension of contract time commensurate with the delay.

1.4 Detection Wire Continuity Test

Pipeline detection wire shall be No. 12 solid copper insulated wire. The detection wire shall be spliced to seal out moisture. The splicing kit shall be or equal to 3M direct Bury Slice Kit (DBY). Detection wire shall be accessible at all valves, air releases and other pipeline appurtenances for connection to detection equipment. Completed sections of detection wire shall be periodically checked for continuity by the Contractor. The Contractor is ultimately responsible for the continuity of the wire sections, and shall take measures during construction to insure a working final product. If, upon completion of the continuity test, a section of wire fails, the Contractor shall make corrective measures and the test will be repeated until satisfactory results are obtained.

END OF SECTION 02-400

WATER MAIN MEASUREMENT AND PAYMENT

1.0 GENERAL

The Contractor shall furnish all labor, tools, equipment and materials to construct the proposed improvements complete as shown on the plans and described in these Specifications. The work shall be measured for payment in accordance with applicable provisions of these Specifications and payment shall be made on the basis of the unit prices or lump sum prices bid. The sum of the payments for eligible pay items contained in the proposal form shall be the compensation to be paid for the completed project; provided however, that changes in the work covered by written change orders, properly executed, may result in additions or deductions from the contract price.

The Contractor's attention is called to the fact that although the pay items shown shall be the basis for establishing the contract price, the description of the pay items does not necessarily reflect the full extent of work to be performed. The cost of the incidental work such as clearing and grubbing, trenching, backfilling, testing, etc., which is necessary but which is not specifically listed as one of the pay items, shall be included in the prices bid for the pay items to which the incidental work is most closely related.

2.0 WATER MAINS

- A. Measurement - Water mains shall be measured for payment by horizontal measurements or station distances along the centerline of the pipe to the nearest 1 foot. Water main size shall be based on nominal pipe diameter as shown on the Plans.
- B. Payment - Water mains shall be paid for on the basis of the respective unit prices bid per linear foot for pipe of the various sizes. Partial payments for water line installations shall be based upon the following percentages:

<u>Status</u>	<u>Maximum Percentage of Bid Price</u>
Line installed and backfilled only	70%
Line installed, backfilled, debris/rock removed, & rough clean-up completed	80%
Line installed, backfilled, debris removed, rough clean-up, & successfully tested	90%
Line installed, backfilled, successfully tested & final surface restoration completed	100%

The foregoing partial payments will be subject to retainage.

Payment for furnishing and installing the water mains shall constitute compensation in full for furnishing all labor, tools, equipment and materials and installing the water mains complete, including incidental work such as location and protection of existing utilities, clearing, excavation (including rock), dewatering trenches, bedding with crushed stone in accordance with Specifications, fittings, restraint gland packs (where required), thrust blocks, driveway and private road crossings and bores (including surface and pavement restoration), tracer wire (where required) backfilling, disposal of surplus excavated material, the removal of existing timber, structures and piping to be relocated or abandoned; also sheeting, diking, well pointing, bailing, dewatering; the furnishing, placing and removal of bulkheads, and restoration of any utilities, parkways, trees, turf, shrubbery, culverts, fences, and other surface features, and testing.

Backfill shall be in accordance with Section 02-300, and the cost thereof shall be included in the appropriate bid price. Where the water line is to be installed under roadways, railroads, creeks, or other special crossings for which a specific pay item is provided, payment based on the measured quantity and unit cost of the work shall be made in addition to the base unit cost for the designation of pipe provided as compensation for the additional work associated with the installation.

3.0 FINAL CLEANUP OF WATER MAINS (All line sizes)

- A. Measurement – Final Cleanup of Water mains shall be measured for payment by horizontal measurements or station distances along the centerline of the pipe to the nearest 1 foot actually installed in accordance with the contract drawings and specifications.
- B. Payment – Final Cleanup of Water mains shall be paid for on the basis of the respective unit price bid per linear foot, for all pipe size, in accordance with the contract drawings and specifications.
Note: All Bidders shall include, for each road, the specified unit price (See the Bid Form) as a minimum, for Final Cleanup.

Payment for final cleanup of installed water mains shall constitute compensation in full for furnishing all labor, tools, equipment and materials for complete land restoration from the water main installation. Specific work items for the following areas shall be included for the payment:

- i. Residential Yards: The disturbed water main areas shall be free of all rocks, and the area shall be fine graded and thickly sown in accordance with Specification 02-300, Section 5.2. If warranted, new top soil shall be placed to cover poor, rocky soil and promote the healthy re-growth of grass in the affected portions of the yard. Additionally, if the Contractor hauls off and disposes a load of waste material (i.e. rock) from a particular yard, the Owner reserves the right to request the Contractor haul in and replace the area with an equal amount of suitable, topsoil material at no additional cost. Prior to final seeding, all areas shall be leveled and trench settlement shall be sufficiently backfilled to bring the areas back to their original grade. Final Seeding and Grading to affected areas shall only be completed between September 1 and April 30. Upon completion of the final cleanup, the Contractor shall obtain and supply the Owner with a handwritten acceptance notice from each affected landowner (Sample included in the Appendix). A landowner's acceptance does not supersede the Owner's acceptance, and the Owner reserves the right to request that leftover debris be thoroughly removed from the utility easement or hauled to the landowner's desired location on the respective parcel.

4.0 GATE VALVE AND BOX

- A. Measurement - Gate valves and boxes shall be measured by count of each size actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the valve, valve box, restraint gland packs, concrete ring, and valve marker along with all related supplies and materials required for a complete installation in accordance with the contract drawings and specifications.

5.0 HYDRANT W/ GATE VALVE

- A. Measurement - Hydrants shall be measured by count and size of hydrants actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the hydrant as sized, gate valve as sized, valve box, ductile iron pipe piping referenced in details, restraint gland packs and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation.

6.0 TAPPING SLEEVE AND VALVE

- A. Measurement - Tapping sleeves and valves shall be measured by count of each size actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the tapping sleeve, tapping valve, valve box, restraint gland packs, valve marker, concrete ring

and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation.

7.0 TERMINATE EXISTING LINE WITH A PLUG & CAP

- A. Measurement – Plugging and Capping of existing lines shall be measured by count and by size of connections actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include locating and excavating the existing line, shutting off the existing line, if active, installing any necessary plugs, fittings, or other items as may be required to make the cap. Payment shall include providing fittings that may be required, backfilling, concrete thrust blocking, and other accessories and work necessary for a complete and working installation.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

8.0 CONNECTION TO EXISTING WATER MAINS

- A. Measurement – Connections to existing water mains shall be measured by count and by size of connections actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include locating and excavating the existing line, shutting off the existing line, if active, removing any plugs, fittings, blowoffs, or other items as may be required to make the connection and delivering any removed items that are re-usable to the OWNER, if requested. Payment shall include providing fittings that may be required for the connection, backfilling, and other accessories and work necessary for a complete and working installation.

9.0 REMOVAL OF EXISTING APPURTENANCES & BOXES

- A. Measurement – Removal of existing appurtenances & boxes (i.e. hydrants, valve boxes, blowoff boxes, etc), as instructed, shall be measured by county of items actually removed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include locating the referenced items after the existing line has been removed from service, capping former main as needed, and removal of the specified items. Payment shall also include either disposing of the items or delivering the re-usable item(s) removed to the OWNER, if requested. Payment shall include all excavation and backfill as required for a complete and working installation.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

10.0 WIDE STREAM CROSSING BY OPEN-CUT METHOD

- A. Measurement – Steel cased Wide Stream crossings shall be measured to the nearest 1 linear foot of casing as shown on the Contact Drawings for each size of casing and carrier pipe installed in accordance with the contract drawings and specifications.

- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include steel casing pipe (excluding carrier pipe), waterline markers, any temporary measures taken to control water flow in the stream, excavation, installation of the water main and casing, backfilling, concrete encasement where required, rip rap channel & bank lining, removal of temporary water control measures, accessories and related work referenced by the plans and specifications or otherwise required for a complete and working installation. Payment shall also include any erosion control measures justified by the construction as well as any measures needed to return sediment-free water back into the stream.

11.0 SHALLOW DITCH CROSSING (All line Sizes)

- A. Measurement – Shallow Ditch crossing shall be measured to the nearest 1-foot of crossing actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include casing pipe where depth requires, any temporary measures taken to control water flow in the creek, excavation, installation of the water main and/or casing (as required), backfilling, concrete encasement where required, rip rap, removal of temporary water control measures, accessories and related work referenced by the plans and specifications or otherwise required for a complete and working installation. Payment shall also include any erosion control measures justified by the construction as well as any measures needed to return sediment-free water back into the river.

12.0 STEEL CASED ROAD BORE

- A. Measurement - Steel cased road bore shall be measured to the nearest 1 linear foot of bore as shown on the Contact Drawings for each size of casing and carrier pipe installed in accordance with the contract drawings and specifications.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the steel casing pipe (excluding the PVC carrier pipe), excavation, installation and backfill of the pipes, all required materials, supplies and equipment for a complete installation. Payment shall also include adhering to any special provisions, including bonding requirements, specifically instructed by Federal/State/County Highway Officials and the encroachment permit(s) obtained by the Owner.

13.0 OPEN CUT CASED ROAD CROSSING

- A. Measurement - Open cut cased road crossing shall be measured to the nearest 1 linear foot of crossing as shown on the Contact Drawings for each size casing and carrier pipe installed in accordance with the contract drawings and specifications.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the steel casing pipe (excluding the PVC carrier pipe), excavation, installation and backfill of the casing and water main, all required materials, supplies and equipment for a complete installation as well as all associated pavement and/or surface repair required for a complete installation. Payment shall also include adhering to any special provisions instructed by County/State Highway Officials and the encroachment permit(s) obtained by the Owner.

14.0 UNCASED DRIVEWAY BORE

- A. Measurement – Uncased driveway bores shall be measured to the nearest 1 linear foot of bore as shown on the Contact Drawings for each size of carrier pipe installed in accordance with the contract drawings and specifications.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the installation of the carrier pipe, all required materials, supplies and equipment for a complete installation.

15.0 PAVEMENT REPLACEMENT & BACKFILL FOR WATER MAINS

- A. Measurement - The replacement of pavement surface shall be measured for payment by specified type (concrete or asphalt) and by horizontal measurements or station distances along the centerline of the water main to the nearest 1 foot (all depths).
- B. Payment - Payment for asphalt replacement shall be at the unit bid price for the measured quantity. Payment shall be total compensation for the mobilization, equipment, saw cutting, granular backfill or flowable concrete fill (as specified), furnishing and placing all base and surfacing materials, including rolling and finishing, for disposal of all surplus material, and for all labor, tools, equipment and incidentals necessary to complete the work, all in accordance with the plans and specifications plus in accordance with applicable standards of the Kentucky Transportation Cabinet.

Payment for concrete replacement shall be at the unit bid price for the measured quantity. Payment shall be total compensation for furnishing all labor, tools, steel reinforcement, equipment and materials and installing the pavement complete. Payment shall also include work such as location and protection of existing utilities, clearing, excavation (including rock), final grading, disposal of surplus excavated material. Payment shall be total compensation for saw cutting, granular backfill (as specified by surface use type), furnishing and placing all base and surfacing materials, including rolling and/or finishing, all in accordance with the plans and specifications.

16.0 NEW METER AND SERVICE

- A. Measurement - Meter and service shall be measured by count of each size of near side service and of far side service actually installed in accordance with the contract drawings and specifications in the completed system. Near side service means that the meter is on the same side of the road as the water main. Far side service means that the meter is on the opposite side of the road as the water main, and that a service line road crossing, either open cut or bore, is required.
- B. Payment - Payment shall be at the unit bid prices for the measured quantity. Payment shall include tapping the main, service tubing, individual PRV (if specified), setter, meter and box, and all materials, supplies and accessories required for a complete installation. For far side meters, new service tubing shall be installed within a PVC casing pipe beneath the affected roadway as detailed in the contract drawings.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

17.0 RECONNECTION OF EXISTING METER AND SERVICE

- A. Measurement – Reconnections of existing meters and service shall be measured by count of each size of near side service and of far side service actually reconnected in accordance with the contract drawings and specifications in the completed system. Near side service means that the meter is on the same side of the road as the water main. Far side service means that the meter is on opposite side of the road as the water main, and that a service line road crossing, either open cut or bore, is required along with PVC encasement.
- B. Payment - Payment shall be at the unit bid prices for the measured quantity. Payment shall include tapping the main, new service tubing from the tap to the meter (size as specified), encasement for far side meter tubing, and all materials, supplies and accessories required for a complete installation and reconnection to the existing meter. For far side meters, new service tubing shall be installed within a PVC casing pipe beneath the affected roadway as detailed in the contract drawings.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

18.0 RELOCATION & RECONNECTION OF EXISTING METER & SERVICE (if applicable)

- A. Measurement – Relocation & Reconnection of existing meter & service shall be measured by count of each size of near side service and of far side service actually relocated and reconnected in accordance with the contract drawings and specifications in the completed system. Near side service means that the meter is on the same side of the road as the water main. Far side service means that the meter is on opposite side of the road as the water main, and that a service line road crossing, either open cut or bore, is required along with PVC encasement.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include locating and disconnecting the existing service line, shutting off the existing service line, if active, relocating the referenced meter as illustrated, tapping the main, new service tubing from the tap to the new location (size as specified), applicable fittings and piping for reconnection to the customer's existing service line, encasement for far side meter tubing, and supplying all materials and accessories required for a complete installation and reconnection of the relocated meter and customer service line. For far side meters, new service tubing shall be installed within a PVC casing pipe beneath the affected roadway as detailed in the contract drawings. Payment shall include reconnections to the customer's existing service line by a licensed plumber.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

19.0 WATER SERVICE CONNECTION TO EXISTING SUPPLY LINE BY A LICENSED PLUMBER

- A. Measurement – Connection by a licensed plumber to existing customer service lines shall be measured by count of each installed.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the services of a licensed plumber, applicable local permits, and all related supplies and materials required for a complete examination to be in accordance with the state plumbing codes.

20.0 ADDITION OF NEW SHUTOFF ON EXISTING WATERLINE VIA INSERTION METHOD (If applicable)

- A. Measurement – Addition of new shutoff on existing waterlines via valve insertion shall be measured by count and size of valve actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the valve as sized, valve box, valve marker (non-paved areas), concrete ring (non-paved areas) and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include locating and excavating the existing line.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

21.0 ADDITION OF NEW GATE VALVE ON EXISTING WATERLINE VIA CUT-IN METHOD

- A. Measurement – Where directed by the Engineer for Addition of new gate valves on existing waterlines (via cut-in method), valves shall be measured by count and size of valve actually installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the gate valve as sized, valve box, piping, concrete ring (non-paved areas), restraint glands, thrust blocks, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include locating and excavating the existing line, shutting off the existing line, if active, installing any temporary fittings or items as may be required to make the connection.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

22.0 INSTALLATION OF NEW HYDRANT ON EXISTING WATERLINE VIA TAP

- A. Measurement – Installation of new fire hydrants on existing waterlines via a tapping sleeve & valve shall be measured by count of hydrant actually connected to and installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the hydrant as sized, tapping sleeve as required, tapping valve as sized, valve box, piping, concrete ring (non-paved areas), restraint glands, thrust blocks, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

23.0 RELOCATION OF EXISTING HYDRANT OFF EXISTING WATERLINE

- A. Measurement – Installation of relocated hydrants off existing waterlines shall be measured by count of hydrant actually connected to and installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include removing the existing hydrant, connecting with existing shutoff valve with applicable fittings, additional piping (up to 15 LF in length), reinstalling the hydrant, restraint glands, thrust blocks, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include locating and excavating the existing line, delivering any removed items that are re-usable to the OWNER, if requested.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

24.0 REPLACEMENT OF EXISTING HYDRANT OFF EXISTING WATERLINE

- A. Measurement – Installation of replaced hydrants off existing waterlines shall be measured by count of hydrant actually connected to and installed in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall include the new hydrant as sized, connecting with existing shutoff valve with applicable fittings, piping, restraint glands, thrust blocks, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include locating and excavating the existing line, delivering any removed items that are re-usable to the OWNER, if requested.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

25.0 EXISTING WATER MAIN FITTING POINT REPAIR & REPLACEMENT

- A. Measurement – Point Repairs to an existing water main fitting shall be measured by count of location and size as listed on the Bid Form, all in accordance with the contract drawings and specifications in the completed system. Water main size shall be based on nominal pipe diameter as shown on the Plans. Replaced sections of water main shall be made with the same pipe material to match existing (SDR 21 PVC or Class 350 DIP).
- B. Payment – Payment shall be at the unit bid price for the measured quantity. Payment shall include the fitting as sized, piping (up to 15 LF in length), restraint glands, concrete thrust blocks, connection to existing piping, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include locating and excavating the existing line, shutting off the existing line, if active, installing any temporary fittings or items as may be required to make the correction.

Payment shall also constitute compensation in full for furnishing all labor, tools, equipment and materials and installing the point repair completely, including incidental work such as location and protection of existing utilities, clearing, excavation (including rock), dewatering trenches (if necessary), bedding with crushed stone in accordance with Specifications, fittings, backfilling, disposal of surplus excavated material, the removal of existing timber, structures and piping to be relocated or abandoned; also sheeting, diking, well pointing, bailing, dewatering; the furnishing, placing and removal of bulkheads, and restoration of any utilities, parkways, trees, turf, shrubbery, culverts, fences, and other surface features, and testing.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

26.0 REMOTE MASTER METER/CONTROL VALVE VAULTS

26.1 New Installations:

- A. Measurement – Master Meter vaults or Master Control Valve vaults shall be measured by site and by percent complete of critical milestone items actually installed or delivered in accordance with the contract drawings and specifications in the completed system.
- B. Payment - Payment shall be at the lump sum basis for the items specified. Payment shall include, if specified, the installation of the meter, gate valve(s), tapping valve(s), control valve, strainer, all piping (internal or external from vault), all conduits (trenched or exposed), wiring (electrical or data), antenna tower, fittings, vault, hatch, and all accessories referenced by the plans and

specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include re-connection to existing water mains, all as referenced in the respective site plans. Where applicable, payment **WILL INCLUDE** the installation of a power feed to the future RTU from either an existing source OR from a new power source, including service pole & disconnect, coordinated by the Contractor with the Electrical Utility at the respective site(s), also coordinated with the Owner to establish account.

Payment shall also include all associated ground surface restoration or paved surface restoration. Ground surface restoration performed in accordance with Specification 02-300, Section 5.2, plus cleanup, reseeding and straw as required for a complete installation. Pavement repairs and restoration performed in accordance with Detail 7, Sheet D1 as required for a complete installation.

26.2 Retrofit Modifications:

- A. **Measurement** – Master Meter vaults slated for retrofits shall be measured by site and by percent complete of critical milestone items actually installed or delivered in accordance with the contract drawings and specifications in the completed system.
- B. **Payment** - Payment shall be at the lump sum basis for the items specified. Payment shall include, disassembly as required. Payment shall also include, if specified, the installation of the meter, gate valve(s), tapping valve(s), strainer, all piping (internal or external from vault), all conduits (trenched or exposed), wiring (electrical or data), antenna tower, fittings, vault, hatch, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation. Payment shall also include re-connection to existing water mains, all as referenced in the respective site plans. Where applicable, payment **WILL INCLUDE** the installation of a power feed to the future RTU from either an existing source OR from a new power source, including service pole & disconnect, coordinated by the Contractor with the Electrical Utility at the respective site(s), also coordinated with the Owner to establish account.

27.0 SUPERVISORY CONTROL & DATA ACQUISITION (SCADA) SYSTEM

- A. **Measurement** – SCADA System shall be measured by percent complete of critical milestone items actually installed or delivered in accordance with the contract drawings and specifications in the completed system.
- B. **Payment** - Payment shall be at the lump sum basis for the items specified. **Payment shall include all necessary and related work for each RTU installation plus the establishment of the Mortons Gap City Hall (Site 6) as the master SCADA site headquarters with ALL required wiring (data & electrical), trenching (as applicable), and communication tower installation.** Payment shall be total compensation for components (including, but not limited to, computers, MTU, multiple RTUs, radios, antennas, licenses, software, supplies, set-up& training) and other accessories referenced by or in accordance with the plans and specifications.

28.0 UNDERCUT AND REFILL (if applicable)

- A. **Measurement** - Where directed by the Engineer to undercut an excavation to avoid unstable soils, the undercut shall be measured as the actual volume of material removed from the excavation in excess of that which would have been otherwise required. Refill shall be measured as the actual volume of crushed stone or concrete refill placed in accordance with the Engineer's directions. Undercut or refill made without the direction or concurrence of the Engineer will not be measured for payment. **Unclassified aggregate refill is not applicable for gravel driveway backfilling.** No differentiation will be made between rock and soil undercutting.
- B. **Payment** - Payment shall be at the unit bid price for the measured quantity. Payment shall include removing and disposing of undercut materials, placing and compacting any refill materials, and all other work as required for a complete and working installation.

END OF SECTION 02-500

SECTION 03-100

CONCRETE FORMWORK

1.0 GENERAL

1.01 WORK INCLUDED

- A. Formwork for cast-in-place concrete, with shoring, bracing, and anchorage.
- B. Openings for other affected work.
- C. Form accessories.
- D. Stripping forms.

1.02 RELATED WORK

- A. Section 03-210: Reinforcing Steel.
- C. Section 03-310: Structural Concrete.

1.03 REFERENCES

- A. ACI 301 - Specifications for Structural Concrete for Buildings.
- B. ACI 347 - Recommended Practice for Concrete Formwork.
- C. PS 1 - Construction and Industrial Plywood.
- D. ACI 318 - Building Code Requirements for Reinforced Concrete.
- E. ACI 350 R - Environmental Engineering Concrete Structures.

1.04 SYSTEM DESCRIPTION

Design, engineer and construct formwork, shoring, and bracing to meet design and code requirements so that resultant concrete conforms to required shapes, lines, dimensions and tolerances.

1.05 QUALITY ASSURANCE

Construct and erect concrete formwork in accordance with ACI 301 and 347, latest revisions.

2.0 PRODUCTS

2.01 FORM MATERIALS

- A. Plywood; Douglas Fir species; medium density overlaid one side grade; sound, undamaged sheets with straight edges.
- B. Glass fiber fabric reinforced plastic forms; matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to structural tolerances and appearance of finished concrete surface.
- C. Forms shall be sufficiently rigid to prevent displacement or sagging between supports and so constructed that the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for their adequacy.

- D. For surfaces to be given a rubbed finish, the form surface in contact with the concrete shall be made of heavy gage metal, new plywood (used plywood may not be used), tempered wood fiberboards with smooth surface, or similar material. Metal forms or form linings shall have square edges so that the concrete will not have fins or fluting. Forms shall not be pieced out by use of material different from those in the adjacent form or in such manner as will detract from the uniformity of the finished surface.
- E. For surfaces other than those to be given a rubbed finish, forms shall be made of wood, metal, or other acceptable material. Wooden forms shall be constructed of sound lumber or plywood of suitable dimensions, free from knotholes and loose knots. Plywood shall be reasonably good as accepted. Metal forms shall be of an acceptable type for the work involved. Edges of forms in contact with concrete shall be flush within 1/16-inch.
- F. Forms for walls, columns, or piers shall have removable panels at the bottom for cleaning, inspection, and scrubbing in of bonding grout. Forms for thin sections (such as walls or columns) of considerable height shall be arranged with suitable openings so that the concrete can be placed in a manner that will prevent segregation and accumulations of hardened concrete on the forms or reinforcement above the fresh concrete, unless special spouts are used to place concrete, and so that construction joints can be properly keyed and treated.
- G. Forms for exposed surfaces shall be built with 3/4-inch chamfer strips attached to produce smooth, straight chamfers at all sharp edges of concrete.
- H. All forms shall be oiled with an acceptable nonstaining oil or liquid form coating before reinforcement is placed.
- I. Before form material is reused, all surfaces that are in contact with the concrete shall be thoroughly cleaned, all damaged places repaired, and all projecting nails withdrawn.

2.02 FORMWORK ACCESSORIES

- A. Form ties to be encased in concrete shall not be made of through bolts or common wire, but shall be made and installed as to embody the following features:
 - 1. After removal of the protruding part of the tie, there shall be no metal nearer than 1 inch to the face of the concrete.
 - 2. That part of the tie which is to be removed shall be at least 1/2-inch in diameter, or if smaller, it shall be provided with a wood or metal cone 1 inch long placed against the inside of the forms. Cones shall be carefully removed from the concrete after the forms have been stripped.
 - 3. Ties that pass through walls subject to hydrostatic pressure shall be provided with acceptable water stops, such as washers, securely fastened to the ties.
- B. Form Release Agent: Colorless material which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete. Form oil shall be placed prior to reinforcing steel when possible and surplus oil on form surfaces or reinforcing steel shall be removed.
- C. Fillets for Chamfered Corners: Wood strip type to the size and shape as shown on the Drawings (or 3/4-inch if not shown).
- D. Dovetail Anchor Slots: Minimum 10 gage thick galvanized steel; foam filled; release tape sealed slots; bent tab anchors securable to concrete formwork.
- E. Nails, spikes, lag bolts, through bolts, anchorages: Sized as required of strength and character to maintain formwork in place while placing concrete.

3.0 EXECUTION

3.01 INSPECTION

Verify lines, levels and measurements before proceeding with formwork.

3.02 PREPARATION

Earth forms not permitted except for continuous strip footings of buildings.

3.03 ERECTION

- A. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.
- B. Camber slabs and beams to achieve ACI 301 tolerances.
- C. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside face of forms, neatly fitted so that joints will not be apparent in exposed concrete surfaces.
- D. Concrete surfaces not exposed to view shall be formed with sound tight lumber or other material producing equivalent finish.
- E. Concrete surfaces to be exposed to view shall be formed with material that is not reactive with concrete surfaces and shall be equivalent in smoothness and appearance to that produced by new plywood panels conforming to PS 1, exterior type Grade B-B.

3.04 APPLICATION OF RELEASE AGENT

Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for work embedded in or passing through concrete.
- B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
- C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

3.06 FORM REMOVAL

- A. Do not remove forms and bracing until concrete has sufficient strength to support its own weight and construction and design loads which may be imposed upon it. Remove load-supporting forms when concrete has attained 75 percent of required 28-day compressive strength, provided construction is reshored.
- B. Reshore structural members due to design requirements or construction conditions to permit successive construction.
- C. Remove formwork progressively so that no unbalanced loads are imposed on structure.
- D. Do not damage concrete surfaces during form removal.

3.07 CLEANING

- A. Clean forms to remove foreign matter as erection proceeds.
- B. Ensure that water and debris drain to exterior through clean out ports.
- C. During cold weather, remove ice and snow from forms. Do not use deicing salts. Do not use water to clean out completed forms unless formwork and construction proceed within heated enclosure. Use compressed air to remove foreign matter.

END OF SECTION 03-100

JOINTS IN CAST-IN-PLACE CONCRETE

- 1.1 SCOPE: This section covers construction joints, expansion Joints and contraction joints for cast-in-place concrete.
- 1.2 SUBMITTALS: Submittal of data and drawings shall be in accordance with Section 01-200 and shall cover joint locations and joint materials.
- 2.1 MATERIALS:
- a. Waterstops
 - Metal Uncoated steel, size and thickness as indicated on the drawings. Metal waterstops are to be used only where specifically called for on the Drawings.
 - Plastic Preformed, self-sealing plastic waterstop shall meet or exceed all requirements of Federal Specifications SS-S-210A, "Sealing Compound for Expansion Joints." Such preformed plastic waterstop should be an approved equal to "Synko-Flex" waterstop as manufactured by Synko-Flex Products, Inc., Houston, Texas. Plastic waterstops may be used where a waterstop is required, but no specific type of waterstop is called for.
 - Vinyl "U" or bulb closed center section, 9 inches wide and 3/8 inch thickness for concrete sections 9 inches or more, 6 inches wide and 3/8 inch thickness for concrete sections 8 inches or less in thickness, Grade Durajoint Type 7, W. R. Meadows "Sealtight Type 9380," Vinylex "RB9-38," or equal. Vinyl waterstops may be used where a waterstop is required, but no specific type of waterstop is called for.
 - b. Expansion Joint Filler Preformed sponge rubber, ASTM D1752, Type I.
 - c. Bond Breaker 30 pound asphalt saturated felt.
- 3.1 CONSTRUCTION JOINTS: Construction joints shall be made at locations indicated on the drawings or specified in this Section and Section 03-300 Construction joints shall not be made at other locations without the concurrence of the Engineer.
- 1. Location: Construction joints shall be located as follows:
 - a. In Columns and Walls: At the underside of beams, girders, haunches, drop panels and column capitals, and at floor levels. All haunches, drop panels, and column capitals shall be considered as parts of the supported floor or roof and shall be placed monolithically therewith.
 - b. In Beams and Girders: At the middle of the span unless a beam intersects a girder at this point, in which case the joint in the girder shall be offset a distance equal to twice the width of the beam. Provision satisfactory to the Engineer shall be made for transfer of shear and other forces through the construction joint.
 - c. In Suspended Slabs: At or near the center of the span in flat slab or T-beam construction. No joint will be permitted between a slab and a concrete beam or girder unless specifically required by the drawings.

Construction joints in beams, girders, and slabs shall be perpendicular to the planes of their surfaces.

2. Watertight Joints: All construction joints in walls and slabs shall have metal, vinyl, or plastic waterstops if shown on the drawings, or if the construction joint is:

Exposed to the atmosphere with dry pit or room on the opposite side.

Below finished grade and in contact with backfill or subgrade material on the opposite side.

In contact with liquid on one side.

The following locations shall not have waterstops:

Suspended and overhanging slabs over basins.

Electrical manholes and pull boxes.

Metal waterstops shall be positioned as indicated on the drawings and shall be clean and free from coatings that would weaken the bond with concrete. Each waterstop shall be continuous throughout the length of the construction joint in which it is installed. Junctions between adjacent sections shall be lapped 5 inches and securely bolted or welded together. All metal waterstops shall be maintained in proper position until the surrounding concrete has been deposited and compacted.

- 3.2 CONTRACTION JOINT: Contraction joints shall be provided at the locations indicated on the drawings. Accessible edges of each contraction joint shall be sealed as specified in the caulking section.

Elastic waterstops in contraction joints shall be continuous throughout the length of the joint. Waterstops shall be spliced in strict conformity with the recommendations of the waterstop manufacturer. Plastic materials shall be stored in a cool place and shall not be exposed to direct sunlight.

- 3.3 EXPANSION JOINTS: Expansion joints shall be installed where indicated on the Drawings, shall be firmly bonded to the previously poured joint face with a suitable adhesive, and the new concrete shall be poured directly against the joint filler. Accessible edges of each joint shall be sealed as specified in the caulking section.

END OF SECTION 03-150

SECTION 03-210

REINFORCING STEEL

1.0 GENERAL

1.01 WORK INCLUDED

- A. Reinforcing steel.
- B. Shop Drawings.

1.02 RELATED WORK

- A. Section 03-100: Concrete Formwork.
- B. Section 03-310: Structural Concrete.

1.03 REFERENCES

- A. ASTM A-615.
- B. ASTM A-616.
- C. ASTM A-617.
- D. ACI 351.
- E. ASTM A-120.
- F. ASTM A-185.

1.04 SUBMITTALS

- A. Shop Drawings: The Contractor shall submit a complete set of shop drawings including schedules and bending drawings for all reinforcement used in the work in accordance with the "Manual of Standard Practice for Detailing Concrete Structures" (ACI 351).
- B. Submittals: The Contractor shall submit the shop drawings in accordance with Section 01-300.

2.0 PRODUCTS

2.01 MATERIALS

- A. The minimum yield strength of the reinforcement shall be 60,000 pounds per square inch. Bar reinforcement shall conform to the requirements of ASTM A-615, A-616, or A-617. All bar reinforcement shall be deformed.
- B. Smooth dowels shall be plain steel bars conforming to ASTM A-615, Grade 40, or steel pipe conforming to ASTM A-120, Schedule 80. Pipe, if used, shall be closed flush at each end with mortar or metal or plastic cap.
- C. Welded wire fabric shall conform to ASTM 185, welded steel wire fabric for concrete reinforcement.
- D. Reinforcement supports and other accessories in contact with the forms for members which will be exposed to view in the finished work shall have approved high density polyethylene tips so

that the metal portion shall be at least 1/4-inch from the form or surface. Supports for reinforcement, when in contact with the ground or stone fill, shall be precast stone concrete blocks.

2.02 FABRICATION

- A. Reinforcement shall be bent cold. It shall be bent accurately to the dimensions and shapes shown on the plans and to within tolerances specified in the CR51 Manual of Standard Practice.
- B. Reinforcing shall be shipped with bars of the same size and shape, fastened securely with wire and with metal identification tags giving size and mark.

3.0 EXECUTION

3.01 PLACING AND FASTENING

- A. Before being placed in position, reinforcement shall be cleaned of loose mill and rust scale, dirt and other coatings that will interfere with development of proper bond.
- B. Reinforcement shall be accurately placed in positions shown on the Drawings and firmly held in place during placement and hardening of concrete by using annealed wire ties. Bars shall be tied at all intersections except where spacing is less than 1 foot in both directions, and then alternate intersections may be tied.
- C. Distance from the forms shall be maintained by means of stays, blocks, ties, hangers or other approved supports. If fabric reinforcement is shipped in rolls, it shall be straightened into flat sheets before being placed.
- D. **Before any concrete is placed, the Engineer shall have inspected the placing of the steel reinforcement and given permission to deposit the concrete. Concrete placed in violation of this provision will be rejected and thereupon shall be removed.**
- E. Unless otherwise specified, reinforcement shall be furnished in the full lengths indicated on the Drawings. Splicing of bars, except where shown on the Drawings, will not be permitted without the approval of the Engineer. Where splices are made, they shall be staggered insofar as possible.
- F. Wire mesh reinforcement shall be continuous between expansion joints. Laps shall be at least one full mesh plus 2 inches, staggered to avoid continuous lap in either direction and securely wired or clipped with standard clips.
- G. Dowels shall be installed at right angles to construction joints and expansion joints. Dowels shall be accurately aligned parallel to the finished surface, and shall be rigidly held in place and supported during placing of the concrete. One end of dowels shall be oiled or greased and have a plastic expansion end cap.

END OF SECTION 03-210

SECTION 03-310

CAST-IN-PLACE STRUCTURAL CONCRETE

1.0 GENERAL

1.01 WORK INCLUDED

The work in this section shall include all formwork, shoring, bracing, anchorage, concrete reinforcement and accessories for cast-in-place concrete.

1.02 GENERAL REQUIREMENT

All concrete construction shall conform to all applicable requirements of ACI 301, ACI 318 and ACI 350 R, except as modified by the supplemental requirements specified herein.

1.03 RELATED WORK

- A. Section 02-222: Excavation.
- B. Section 03-100: Concrete Formwork.
- C. Section 03-210: Reinforcing Steel.

1.04 REFERENCES

- A. The Contractor shall conform to the recommendations of the following references:
 - 1. Specifications for Structural Concrete for Building ACI 301 (latest revision).
 - 2. Field Reference Manual: Specifications for Structural Concrete for Buildings ACI Sp-15 (88).
 - 3. Manual of Standard Practice - CRSI (latest revision).
 - 4. Placing Reinforcing Bars - CRSI (latest revision).
 - 5. Building Code Requirements for Reinforced Concrete ACI 318.
 - 6. Environmental Engineering Concrete Structures ACI 350R.
- B. The following standard shall also apply to this work:

1. ASTM C-143.	9. ASTM D-570.
2. ASTM C-150.	10. ASTM D-1252.
3. ASTM C-33.	11. ASNI A-116.1.
4. ASTM C-260.	12. ASTM A-120.
5. ASTM C-494.	13. ASTM C-94.
6. ASTM A-615.	14. ASTM D-2146.
7. ASTM D-638.	15. Federal Specifications FF-S-325.
8. ASTM D-695.	

1.05 SUBMITTALS

- A. The Contractor shall submit the following data to the Engineer for review:
 - 1. Proposed mix designs, test results, plotted curves and all other substantiating data as required by Sections 3.8 and 3.9 of ACI 301.
 - 2. Mix designs for all mixes proposed or required to be used, including all mixes containing admixtures.
 - 3. A certified copy of the control records of the proposed production facility establishing the standard deviation as defined in Section 3.9 of ACI 301.
- B. Certification attesting that admixtures equal or exceeds the physical requirements of ASTM C-494 for Type A admixture and when required, for Type D admixture.

- C. Notarized certifications by the manufacturer that epoxy bonding adhesive meets the specification contained herein.
- D. Drawings showing locations of all proposed construction joints.
- E. Shop drawing for reinforcing steel showing bar schedules, location, and splices.

1.06 QUALITY ASSURANCE

- A. Consistency:
 - 1. Concrete shall be of such consistency that it can be worked readily into all parts of the forms and around embedded work, without permitting the materials to segregate, or free water to collect on the surface. Consistency shall be measured by the ASTM Standard Test Method for Slump of Portland Cement Concrete, Designation C143-78. The consistency of concrete shall be as given in Table I.
 - 2. Slump tests shall be made in the field by the Contractor.
- B. Compression Tests:
 - 1. During the progress of the work, at least one set of four compression test cylinders shall be made for each 50 cubic yards of concrete or major fraction thereof, and not less than one such set for each type of concrete for each days' pouring. Cylinders made in the field shall be made and cured in accordance with ASTM Standard Method of Making and Curing Concrete Test Specimens in the Field, Designation C31-69, except that wherever possible molds shall be left on cylinders until they have reached the laboratory.
 - 2. One (1) cylinder of each set shall be broken in accordance with ASTM C-39 at seven (7) days and two (2) at twenty-eight (28) days. Two (2) copies of these test results shall be submitted to the Engineer on the same day of the tests. The remaining cylinder shall be reserved for future testing if required.
 - 3. On evidence of these tests, any concrete that fails to meet the specified strength requirements shall be strengthened or replaced as directed by the Engineer at the Contractor's expense.
- C. Inserts in Concrete by Other Trades:
 - 1. All trades shall be notified, at the proper time, to install items to be embedded in concrete.
 - 2. All castings, inserts, conduits, and other metalwork shall be accurately built into or encased in the concrete by the Contractor as directed and all necessary precautions shall be taken to prevent the metalwork from being displaced or deformed.
 - 3. Anchor bolts shall be set by means of substantial templates.
 - 4. The Contractor shall build into new concrete against which facing brick or tile is to be laid, suitable, acceptable, non-corrodible metal, dovetail grooves for ties for securing the brickwork to the concrete.
- D. Testing:
 - 1. All testing shall be in accordance with provisions of ACI 301.
 - 2. Testing services listed in ACI 301 Sections 16.3, 16.4 and 16.5 shall be performed by a testing agency acceptable to the Engineer. Testing services to meet the requirements of ACI shall be paid for by the Contractor at his expense. Test shall be made for each 50 cubic yards of concrete and/or each day concrete is placed.
- E. Additional Requirements:
 - 1. Unless otherwise directed by the Engineer, the vertical surfaces of all footings shall be formed. Excavations and reinforcement for all footings shall have been inspected by the Engineer before any concrete is placed.
 - 2. The installation of underground and embedded items shall be inspected before slabs are placed. Pipes and conduits shall be installed below the concrete unless otherwise indicated. Fill required to raise the subgrade shall be placed as specified in Division 2. Unless shown otherwise, porous fill not less than 6 inches in compacted thickness shall be installed under all slabs, tank bottoms, and foundations. The fill shall be leveled and

uniformly compacted to a reasonably true and even surface. The surfaces shall be clean, free from frost, ice, mud and water. Where indicated, waterproof paper, polyethylene sheeting of nominal 4-mill minimum thickness, or polyethylene coated burlap shall be laid over surfaces receiving concrete.

- F. Hot Weather Requirements: Placing of concrete under conditions of high temperatures, low humidity or wind shall be done in accordance with the American Concrete Institute "Hot Weather Concreting" (ACI 305R-77).
- G. Cold Weather Requirements: Cold weather concreting procedures and precautions shall conform to American Concrete Institute "Cold Weather Concreting" (ACI 306 R-78).

2.0 PRODUCTS

2.01 Contractor shall supply concrete only from an approved ready mixed concrete supplier.

2.02 CONCRETE MIX WITHOUT FLY ASH

Structural concrete of the various classes required shall be proportioned by Section 3.9 of ACI 301 to produce the following 28-day compressive strengths:

- A. Selection of Proportions for Class A Concrete:
 - 1. 4,000 psi compressive for strength at 28 days.
 - 2. Type II cement plus water reducing, dispersing agent and air. Type IP cement may be used in place of Type II.
 - 3. Maximum water/cement plus water reducing dispersing agent ratio = 0.50.
 - 4. Minimum cement content = 564 pounds (6.0 bags)/cubic yards concrete.
 - 5. Nominal maximum size coarse aggregate = No. 67 (3/4-inch maximum) or No. 57 (1-inch maximum).
 - 6. Air content = 6 percent plus or minus 2 percent by volume.
 - 7. Slump = 2 inches to 3 inches in accordance with ASTM C-143.
- B. Selection of proportions for Class B concrete:
 - 1. 3,000 psi compressive strength at 28 days.
 - 2. Type I cement plus water reducing dispersing agent and air.
 - 3. Maximum (water)/(cement plus water reducing dispersing agent) ratio = 0.56.
 - 4. Minimum cement content = 432 pounds (4.5 bags)/cubic yards concrete.
 - 5. Nominal maximum size coarse aggregate = No. 67 (3/4-inch maximum) or No. 57 (1-inch maximum).
 - 6. Air content = 6 percent plus or minus 2 percent by volume.
 - 7. Slump = 3 inches to 4 inches in accordance with ASTM C-143.

2.03 OPTIONAL CONCRETE MIX USING FLY ASH

- A. Selection of Proportions for Class A Concrete:
 - 1. 4,000 psi compressive for strength at 28 days.
 - 2. Type II cement plus water reducing dispersing agent and air.
 - 3. Maximum (water)/(cement plus water reducing dispersing agent) ratio = 0.50.
 - 4. Minimum cement content = 517 pounds (5.5 bags)/cubic yards concrete.
 - 5. Maximum Fly Ash Content = 71 pounds/cubic yards
 - 6. Nominal maximum size coarse aggregate = No. 67 (3/4-inch maximum) or No. 57 (1-inch maximum).
 - 7. Air content = 6 percent plus or minus 2 percent by volume.
 - 8. Slump = 2 inches to 3 inches in accordance with ASTM C-143.
- B. Selection of Proportions for Class B Concrete:
 - 1. 3,000 psi compressive strength at 28 days.
 - 2. Type I cement plus water reducing dispersing agent and air.
 - 3. Maximum (water)/(cement plus water reducing dispersing agent) ratio = 0.56.

4. Minimum cement content = 432 pounds (4.5 bags)/cubic yards concrete.
 5. Maximum Fly Ash Content = 71 pounds/cubic yards.
 6. Nominal maximum size coarse aggregate = No. 67 (3/4-inch maximum) or No. 57 (1-inch maximum).
 7. Air content = 6 percent plus or minus 2 percent by volume.
 8. Slump = 3 inches to 4 inches in accordance with ASTM C-143.
- C. Applicable Standards:
1. ANSI C 311-77 "Standard Methods of Sampling and Testing Fly Ash for Use as an Admixture in Portland Cement Concrete".
 2. ANSI C 618-80 "Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete".
- D. Concrete shall be used as follows:
1. Class A concrete for all concrete work except as noted below.
 2. Class B concrete for fill concrete, thrust blocks, post setting, and where indicated on the Drawings.
- E. All testing shall be or have been performed by an approved independent testing laboratory.
- F. Cement for exposed concrete shall have a uniform color classification.
- G. Type II cement conforming to ASTM C-150 shall be used in all structural concrete. The alkali content shall not exceed 0.6 percent calculated as sodium oxide. Type IP Cement may be used in place of Type II cement.
- H. Coarse aggregate shall conform to all requirements of ASTM C-33.
- I. Manufactured sand shall not be used as fine aggregate in concrete.

2.04 FLY ASH CONCRETE

- A. In the absence of a verified and acceptable history of fly ash concrete mixes, the following procedure is required to establish the quality of the concrete mix.
- B. Trial batches must be made starting thirty (30) days ahead of initial concrete pour. Four (4) mixes shall be designed and produced at no cost to the Owner or the Engineer as follows:
1. Mix using Type II cement with water reducing admixture for normal temperatures (Class A).
 2. Mix using Type II cement with water reducing admixture for cold weather temperatures (Class A).
 3. Mix using Type II cement with water reducing admixture for hot weather temperatures (Class A).
 4. Mix using Type I cement with water reducing admixture for normal weather temperatures (Class B).
- C. Four (4) test cylinders shall be cast for each of the four (4) mixes. Two (2) cylinders shall be broken at 7 days, and two (2) cylinders shall be broken at 28 days, for each of the four (4) mixes. The trial batch design report shall include strength breaks at 7 days and 28 days, air content, etc.
- D. The water-reducing, cement dispersing admixture (such as Master Builders Pozzolith 344-N, Nox-Crete Plastiflow, Plastocrete 161 by SIKA Chemical Company, or approved equal) used in fly ash concrete, shall be a normal, accelerated, or retarded hardening admixture. The admixture shall be used at optimum dosage to offset the slow strength development and setting characteristics of the fly ash. Only those brands of admixture that can provide readily available field service on short notice to provide field services, inspection, and assistance, will be acceptable.
- E. Prior to the use of fly ash concrete, recent mill reports shall be submitted on a regular basis during the project. Maximum loss of ignition (LOI) shall be 6 percent.

- F. Tests for air content shall be made twice a day at the jobsite prior to pouring, for all mixes containing fly ash.

2.05 ADMIXTURES

- A. An air-entraining admixture shall be used on all concrete and shall be the neutralized vinsol resin type such as Master Builders MB-VR, or Euclid Chemical Co. AIR-MIX or equal. The admixture shall meet the requirements of ASTM C-260. Certification attesting to the percent of effective solids and compliance of the material with ASTM C-260 shall be furnished, if requested.
- B. A water reducing, set-controlling admixture (non-lignin type) shall be used in all concrete. The admixture shall be a combination of polyhydroxylated polymers including catalysts and components to produce the required setting time based on job site conditions, specified early strength development, finishing characteristics required, and surface texture, as determined by the Engineer.
- C. Certification shall be furnished attesting that the admixture exceeds the physical requirements of ASTM C-494, Type A, water reducing and normal setting admixture, and when required, for ASTM C-494, Type D, water reducing and retarding admixture when used with local materials with which the subject concrete is composed.
- D. The admixture manufacturer, when requested, shall provide a qualified concrete technician employed by the manufacturer to assist in proportioning concrete for optimum use. He also will be available when requested to advise on proper addition of the admixture to the concrete and on adjustment of the concrete mix proportions to meet changing job conditions.
- E. The use of admixtures to retard setting of the concrete during hot weather, to accelerate setting during cold weather, and to reduce water content without impairing workability will be permitted if the following conditions are met.
- F. The admixture shall conform to ASTM C-494 except that the durability factor for concrete containing the admixture shall be at least 100 percent of control, the water content a maximum of 90 percent of control and length change shall not be greater than control, as defined in ASTM C-494.
- G. Where the Contractor finds it impractical to employ fully the recommended procedures for hot weather concreting, the Engineer may at his discretion require the use of a set retardant admixture for mass concrete greater than 2.5 feet thick and for all concrete whenever the temperature at the time concrete is cast exceeds 80 degrees F. The Contractor subject to the review of the Engineer shall select the admixture. The admixture and concrete containing the admixture shall meet all the requirements of these Specifications. Preliminary tests of this concrete shall be required at the Contractor's expense.
- H. Admixtures shall be used in concrete design mixes in the same manner and proportions as in the field so that the effects of the admixtures are included in preliminary tests submitted to the Engineer for review prior to the start of construction.
- I. When more than one admixture is used, all admixtures shall be compatible. They should preferably be by the same manufacturer.
- J. Calcium chloride will not be permitted as an admixture in any concrete.

2.06 WATER

The mix water for concrete shall be potable.

2.07 AGGREGATES

- A. Fine aggregates shall be natural sand having clean, hard, uncoated grains, free from injurious amounts of clay, dust, organic matter or other deleterious substances, and shall conform to ASTM C-33.
- B. Coarse aggregates shall be crushed stone having clean, hard, uncoated particles, and shall be free from injurious amounts of soft, friable, thin, elongated or laminated pieces. Shale may not be used as aggregate. Coarse aggregates shall conform to ASTM C-33 and shall not exceed the following maximum sizes:
 - 1. 3/4-inch for slabs, beams, girders, and walls.
 - 2. 1-inch for all other concrete.

2.08 TESTING AGGREGATES AND DETERMINING PROPORTIONS

- A. No concrete shall be used in the work until the Engineer has accepted the materials and mix design.
- B. The conformity of aggregates to the specifications hereinbefore given shall be demonstrated and determined by tests per ASTM C-33 made with representative samples of the materials to be used on the work.
- C. The actual proportions of cement, aggregates, admixtures and water necessary to produce concrete conforming to the requirements set forth shall be determined by making test cylinders using representative samples of the materials to be used in the work. A set of four (4) standard 6-inch cylinders shall be made and cured per ASTM C-31. Two (2) shall be tested at 7 days and two (2) at 28 days per ASTM C-39. The slump shall not be less than the greatest slump expected to be used in the work.
- D. Reports on the tests and a statement of the proportions proposed for the concrete mixture, shall be submitted in triplicate to the Engineer for review as soon as possible, but not less than five (5) days prior to the proposed beginning of the concrete work. If the Contractor furnishes in writing, similar, reliable detailed information from an acceptable source, and of date not more than four (4) months prior to the time when concrete will be used on this project, the above requirements for laboratory tests may be modified by the Engineer. Such data shall derive from mixtures containing constituents, including the admixtures where used, of the same types and from the same sources as will be used on this project.
- E. The Engineer shall have the right to make check tests of aggregates and concrete, using the same materials, and to order changes as may be necessary to meet the specified requirements.
- F. The Contractor may request permission to add water at the job site, and when the addition of water is permitted by the Engineer, the quantity added shall be the responsibility of the Contractor and in no case shall the total water per bag of cement exceed that determined by the designed mix.
- G. All concrete exposed to weather, such as foundations, walls, exterior steps and retaining walls, etc. shall be air entrained.
- H. If concrete of the required characteristics is not being produced as the work progresses, the Engineer may order such changes in proportions or materials, or both, as may be necessary to secure concrete of the specified quality. The Contractor shall make such changes at his own expense and no extra compensation will be allowed because of such changes.

2.09 MIXING

All central plant and rolling stock equipment and methods shall conform to the Truck Mixer and Agitator Standards of the Truck Mixer Manufacturers' Bureau of the National Ready Mixed Concrete Assn., as well as the ACI Standards for Measuring, Mixing and Placing Concrete (ACI 614), and with Sections 7 to 14,

inclusive, of the ASTM Standard Specification for Ready Mixed Concrete, Designation C94-78a, insofar as applicable.

3.0 EXECUTION

3.01 PLACING AND COMPACTING CONCRETE

- A. At least 20 hours before the Contractor proposes to make any placement of concrete, he shall notify the Engineer of his intention and planned procedure. Unless otherwise permitted, the work shall be so executed that a section begun on any day shall be completed during daylight of the same day.
- B. Ready mixed concrete shall be transported to the site in watertight agitator or mixer trucks. The quantity of concrete to be mixed or delivered in any one batch shall not exceed the rated capacity of the mixer or agitator for the respective conditions as stated on the nameplates.
- C. Central mixed concrete shall be plant mixed a minimum of 1-1/2 minutes per batch, and then shall be truck mixed or agitated a minimum of 8 minutes. Agitation shall begin immediately after the premixed concrete is placed in the truck and shall continue without interruption until discharge. For transit mixed concrete, the major portion of the mixing water shall be added and mixing started immediately after the truck is charged.
- D. The amount of water initially added shall be recorded on the delivery slip for the Engineer's information; no additional water shall be added, either in transit or at the site, except as directed. Mixing (at mixing speed) shall be continued for at least 10 minutes followed by agitation without interruption until discharge. Concrete shall be discharged at the site within 1-1/2 hours after water was first added to the mix, and shall be mixed at least 5 minutes after all water has been added.
- E. Concrete that has become compacted or segregated during transportation to or on the site of the work shall be satisfactorily remixed just prior to being placed in the forms.
- F. Partially hardened concrete shall not be deposited in the forms. The retempering of concrete which has partially hardened (that is, the remixing of concrete with or without additional cement, aggregate, or water) will not be permitted.
- G. The concrete shall be mixed only in the quantity required for immediate use. Concrete that has developed an initial set shall not be used. The Contractor shall have sufficient plant capacity and transporting apparatus to insure continuous delivery at the rate required.
- H. The temperature of the concrete mixture immediately before placement shall be between 50 degrees F and 90 degrees F.
- I. Concrete mixed in stationary mixers and transported by nonagitating equipment shall be placed in the forms within 45 minutes from the time ingredients are charged into the mixing drum. Concrete that is truck mixed or transported in truck mixers or truck agitators shall be delivered to the site of the work and discharge completed in the forms within the time specified in paragraph 10.7 of ASTM C-94, except that when the concrete temperature exceeds 85 degrees F, the time shall be reduced to 30 minutes. Transit mixed concrete that is completely mixed at the site of concrete placement or batched cement and aggregates transported to mixers shall be placed in the forms within 1-1/2 hours after cement has been added. Concrete shall be placed in the forms within 15 minutes after discharge from the mixer at the job site.
- J. If concrete is placed by pumping, no aluminum shall be used in any parts of the pumping system that contact or might contaminate the concrete. Aluminum chutes and conveyors shall not be used.
- K. No concrete shall be placed on frozen subgrade or in water, or until the subgrade, forms, and preliminary work have been accepted. No concrete shall be placed until all materials to be built into the concrete have been set and have been accepted by the various trades and by the

- Engineer. All such materials shall be thoroughly clean and free from rust, scale, oil, or any other foreign matter.
- L. Forms and excavations shall be free from water and all dirt, debris, and foreign matter when concrete is placed. Except as otherwise directed, wood forms and embedded wood called for or allowed shall be thoroughly wetted just prior to placement of concrete.
 - M. Concrete placed at air temperatures below 40 degrees F shall have a minimum temperature of 50 degrees F and a maximum of 70 degrees F when placed.
 - N. Chutes for conveying concrete shall be metal or metal lined and of such size, design, and slope as to ensure a continuous flow of concrete without segregation. The slope of chutes shall have approximately the same slope. The discharge end of the chute shall be provided with a baffle, or if required, a spout and the end of the chute. The spout shall be kept as close as practicable to, but in no event more than 5 feet above the surface of the fresh concrete. When the operation is intermittent, the chute shall discharge into a hopper.
 - O. In thin sections of considerable height (such as walls and columns), concrete shall be placed in such manner as will prevent segregation and accumulations of hardened concrete on the forms or reinforcement above the mass of concrete being placed. To achieve this end, suitable hoppers spouts with restricted outlets, etc. shall be used as required or permitted unless the forms are provided with suitable openings.
 - P. Chutes, hoppers, spouts, etc. shall be thoroughly cleaned before and after each run and the water and debris shall not be discharged inside the form.
 - Q. For any one placement, concrete shall be deposited continuously in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams and planes of weakness within the section, and so as to maintain until the completion of the unit, an approximately horizontal plastic surface.
 - R. No wooden spreaders shall be left in the concrete.
 - S. During and immediately after being deposited, concrete shall be thoroughly compacted by means of suitable tools and methods, such as internal type mechanical vibrators operating at not less than 5,000 rpm or other tool spading to produce the required density and quality of finish. Vibration shall be done only by experienced operators and shall be carried in such manner and only long enough to produce homogeneity and optimum consolidation without permitting segregation of the solid constituents, "pumping" of air, or other objectionable results.
 - T. The concrete shall be thoroughly rodded and tamped about embedded materials so as to secure proper adhesion and prevent leakage. Care shall be taken to prevent the displacement of such materials during concreting.
 - U. The distance between construction joints shall not exceed 25 feet for all concrete construction and not less than 48 hours shall elapse between casting of adjoining units unless the Engineer waives these requirements. Provision shall be made for jointing successive units as indicated or required. Where joints are not shown on the Drawings, they are required to be made at a spacing of approximately 25 feet. Additional construction joints required to satisfy the 25 foot spacing requirement shall be located by the Contractor subject to the review of the Engineer. The Contractor shall submit for review Drawings separate from the steel reinforcing Drawings, showing the location of all proposed construction joints. All construction joints shall be prepared for bonding as specified in paragraph 6.1.4.3 of ACI Standard 301 and Section 3.02 Bonding Concrete at Construction Joints. Joints in walls and columns shall be maintained level.
 - V. Formwork for beam soffits and slabs and other parts that support the weight of concrete shall remain in place until the concrete has reached its specified 28-day strength, unless otherwise specified or permitted.

3.02 BONDING CONCRETE AT CONSTRUCTION JOINTS

- A. In order to secure full bond at construction joints, the surface of the concrete previously placed (including vertical, inclined, and substantially horizontal areas) shall be thoroughly cleaned of foreign materials and laitance, if any, and then roughened.
- B. The previously placed concrete at the joint shall be free of standing water.
- C. Waterstops shall be used on all construction joints below water level.

3.03 CURING AND PROTECTION

- A. All concrete, particularly slabs and including finished surfaces, shall be treated immediately after concreting or cement finishing is completed, to provide continuous moist curing for at least seven days, regardless of the adjacent air temperature. Walls and vertical surfaces may be covered with continuously saturated burlap, or kept moist by other acceptable means. Horizontal surfaces, slabs, etc., shall be ponded to a depth of 1/2-inch wherever practicable, or kept continuously wet by the use of lawn sprinklers, a complete covering of continuously saturated burlap, or by other acceptable means.
- B. For at least seven days after having been placed, all concrete shall be so protected that the temperature at the surface will not fall below 45 degrees F. The methods of protecting the concrete shall be as specified in that section of the General Specifications titled "Precautions During Adverse Weather" and shall be subject to the review of the Engineer.
- C. The above-mentioned 7-day periods may be reduced to 3 days in each case if high-early-strength cement is allowed to be used in the concrete.
- D. Wherever practicable, finished slabs shall be protected from the direct rays of the sun to prevent checking and crazing.

3.04 TRIMMING AND REPAIRS

- A. The Contractor shall use suitable forms, mixture of concrete, and workmanship so that concrete surfaces, when exposed, will not require patching. Concrete which, in the opinion of the Engineer has excessive honeycomb, aggregate pockets, or depressions will be rejected and the Contractor shall, at his own expense remove the entire section containing such defects and replace it with acceptable concrete.
- B. As soon as the forms have been stripped and the concrete surfaces exposed, fins and other projections shall be removed, recesses left by the removal of form ties shall be filled and surface defects which do not impair structural strength shall be repaired.
- C. Defective concrete shall be cut perpendicular to the surface until sound concrete is reached, but not less than 1-inch deep. The remaining concrete shall be thoroughly roughened and cleaned. Concrete around the cavity or the form tie recess shall be thoroughly wetted and promptly painted with a 1/16-inch brush coat of neat cement mixed to the consistency of thick paint. The hole shall then be filled with mortar.
- D. Mortar shall be 1:1-1/2 cement and sand mix with sufficient white cement, or fine limestone screening in lieu of sand, to produce a surface matching the adjoining work. Cement and sand shall be from the same sources as in the parent concrete.
- E. Mortar in patches shall be applied so that after partial set it can be compressed and rubbed to produce a finish flush and uniform in texture with the adjoining work. All patches shall be warm-moist cured as above specified.
- F. The use of mortar patching as above specified shall be confined to the repair of small defects in relatively green concrete. If substantial repairs are required, the defective portions shall be cut out

to sound concrete and the defective concrete replaced by means of a cement gun, or the structure shall be taken down and rebuilt, all as the Engineer may decide or direct.

3.05 FINISHES

- A. Exposed to View Concrete Surfaces:
1. All concrete exposed to view in the completed structure shall be produced using materials and workmanship to such quality that only nominal finishing will be required. The provisions of paragraphs 13.3, 13.4, and 13.6 of ACI shall apply to all exposed to view concrete surfaces (limited to 1 foot below grade and 1 foot below the minimum liquid level for structures that will contain liquids).
 2. Forms for exposed concrete surfaces shall be exterior grade, high density overlay plywood, steel, or wood forms with smooth tempered hard board form liners.
 3. Forms shall be coated with Nox-Crete Form Coating Release Agent, Debond Form Coating by L & M Construction Chemicals, Inc. or an approved equal, before initial pour and between subsequent pours, in accordance with the manufacturer's printed instructions. Form boards shall not be wet with water prior to placing concrete.
 4. Recessed joints in concrete shall be formed using lacquer coated wooden battens or forms, milled to indicated profiles. Battens and corner strips shall be carefully inspected before concrete is placed and damaged pieces replaced.
 5. Chamfer strips shall be 1-inch radius with leg, polyvinyl chloride strips by Gateway Building Products, Saf-T-Grip Specialties Cor., Vinylex Corp., or equal.
 6. Particular attention is directed to the requirements of paragraphs 10.2.2 and 13.3 of ACI 301. Form panels shall be provided in the maximum form joints. Wherever practicable, form joints shall occur at recessed joints. All form joints in exterior exposed to view surfaces shall be carefully caulked with an approved nonstaining caulking compound. Joints shall not be taped. Form oil or other material that will impart a stain to the concrete shall not be allowed to contact concrete surfaces.
 7. Care shall be taken to prevent chipping of corners or other damage to concrete when forms are removed. Exposed corners and other surfaces that may be damaged by ensuing operations shall be protected from damage by boxing, corner boards or other approved means until construction is completed.
 8. Form ties shall remain in the walls and shall be equipped with a waterseal to prevent passage of water through the walls. Particular care shall be taken to bend tie wire ends away from exposed faces of beams, slabs and columns. In no case shall ends to tie wires project toward or touch formwork. Minimum set back of form ties shall be 1 inch from faces of wall. The hole left by removal of tie ends shall be sealed and grouted as per ACI Par. 9.3 and in accordance with procedure described hereinafter in Par. 3.04.E. Form ties will be permitted to fall within as cast areas of architecturally treated wall surfaces (ACI Chapter 13); this does not apply to walls receiving textured decorative waterproof masonry coating.
 9. All formed exposed to view concrete shall be prepared as paragraph 3.04 B, then rubbed and coated with Thoroseal or another Engineer approved product. The manufacturer's recommendations for surface preparation, application procedures and rates, and temperature and moisture conditions shall be followed. Exterior vertical surfaces shall be finished to one foot below grade. Interior exposed to view vertical surfaces of dry pits shall be finished full height, interior vertical surfaces of liquid containers shall be finished to one foot below the minimum liquid level that will occur during normal operations.
 10. Slope all slabs to prevent water pocketing.
- B. All vertical surfaces below minimum liquid level in liquid containing structures shall have a smooth form finish.
- C. All smooth form concrete vertical surfaces shall be true plane within 1/4-inch in 10 feet as determined by a 10 foot straight edge place anywhere on the surface in any direction. Abrupt irregularities shall not exceed 1/8-inch.
- D. Basin and tank floors shall have a "troweled" finish unless shown otherwise on Drawings.

- E. Weirs and overflow surfaces shall be given a troweled finish.
- F. Exterior platforms, steps and landings shall be given a broom finish. Broom finish shall be applied to surfaces which have been steel troweled to an even smooth finish. The troweled surface shall then be broomed with a fiber bristle brush in the direction transverse to that of the main traffic.
- G. Walking surfaces of slabs shall have a troweled finish unless shown otherwise on Drawings.
- H. Patching of holes due to removal of tie ends and other repairable defective areas shall be as follows: Entire contact area of hole shall be coated with two part moisture insensitive epoxy bonding compound in accordance with manufacturer's specifications, and prior to placing of freshly mixed patching mortar. Patching mortar shall be mixed and placed in general accordance with ACI Par. 9.2.2, 9.2.3, and 13.6.
- I. Nox-Crete Harbeton, Chem Hard by L & M Construction Chemicals hardener treatment, or an approved equal shall be applied to all exposed concrete floors in occupied spaces. The floors shall be thoroughly cured, cleaned, and perfectly dry with all work above them completed. The hardener shall be applied evenly and freely and in conformance with manufacturer's instructions, using not less than three (3) coats, allowing 24 hours between coats. One gallon of hardener shall cover not more than 100 square feet. After the final coat is completed and dry, surplus hardener shall be removed from the surface of the concrete by scrubbing and mopping with water.

3.06 CONCRETE WALKS AND CURBS:

- A. Subgrade shall be true and well compacted at the required grades. Spongy and otherwise unsuitable material shall have been removed and replaced with properly compacted stone.
- B. Concrete walks shall be not less than 4 inches in thickness. Walks shall have contraction joints every 4 linear feet in each direction, formed in the fresh concrete by cutting a groove in the top surface of the slab to a depth of at least one-fourth the slab thickness with a jointing tool. Transverse expansion joints shall be installed at driveways, and opposite expansion joints in adjacent curbs. Where curbs are not adjacent, transverse expansion joints shall be installed at intervals of approximately 24 feet. Sidewalks shall receive a broomed finish. Scoring shall be in a transverse direction. Edges of the sidewalks and joints shall be edged with a tool having a radius not greater than 1/4-inch. Sidewalks adjacent to curbs shall have a slope of 1/4-inch per foot toward the curb. Sidewalks not adjacent to curbs shall have a transverse slope of 1/4-inch per foot or shall be crowned as directed by the Engineer. The surface of the concrete shall show no variation in cross section in excess of 1/4-inch in 5 feet. Concrete walks shall be reinforced with 6 x 6 - W1.4 x W1.4 welded wire fabric unless noted otherwise on the Drawings.

3.07 WATERTIGHTNESS

- A. The structures that are intended to contain liquids and/or will be subjected to exterior hydrostatic pressures shall be so constructed that when completed and tested, there shall be no loss of water and no wet spots shall show.
- B. As soon as practicable after the completion of the structures, the Contractor shall fill such structures with water and if leakages develop or wet spots show, the Contractor shall empty such structures and correct the leakage in an approved manner. Any cracks that appear in the concrete shall be dug out and suitably repaired. Temporary bulkheads over pipe openings in walls shall be provided as required for the testing.
- C. After repairs, if any are required, the structures shall be tested again and further repaired if necessary until satisfactory results are obtained. All work in connection with these tests and repairs shall be at the expense of the Contractor.
- D. Waterstops shall be placed in all locations as indicated on the Drawings and as may be required to assure the watertightness of all containers of liquids. Special shop fabricated ells, tees and

crosses shall be provided at junctions. Waterstops shall be extended at least 6 inches beyond end of placement in order to provide splice length for subsequent placement. In slabs and tank bottoms, waterstops shall be turned up to be made continuous with waterstops at bottom of walls or in walls. All joints between adjacent, continuing, and intersecting sections of waterstop including butt joints, tee joints, and other angled joints shall be heat fused to form a watertight seal. Waterstops shall not be lapped. Waterstops shall be secured in place to maintain proper position during placement of concrete. Care shall be taken to avoid folding while concrete is being placed and to prevent voids in the concrete surrounding the waterstop. All materials shall be installed in accordance with the manufacturer's recommendations.

- E. Joints between pipe (except cast iron wall pipe) and cast-in-place concrete walls shall be sealed as required by the Drawings.
- F. The top surface of all concrete decks (except slabs on grade) shall be coated with Sikagard-70 water-repellant penetrating sealer as manufactured by the Sika Corporation, Nox-Crete Stifel, or another approved equal. The manufacturer's recommendations shall be followed in all areas of application.

3.08 GROUTING BASE PLATES, BEARING PLATES AND MACHINE BASES

- A. Column base plates, bearing plates for beams and similar structural members, machinery and equipment bases shall, after being plumbed and properly positioned, be provided with full bearing on epoxy nonshrink grout. Concrete surfaces shall be rough, clean, free of oil, grease and laitance and shall be moistened thoroughly immediately before grout is placed. Metal surfaces shall be clean and free of oil, grease and rust. Mixing and placing shall be in conformance with the material manufacturer's printed instructions.
- B. Grout fill that is formed in place by using rotating equipment as a screed, such as for clarifiers and similar types of equipment, shall be mixed in proportions and consistencies as required by the manufacturer or supplier of the equipment.

3.09 EQUIPMENT PADS

Unless otherwise shown or directed, all equipment and items such as lockers, motor control centers, etc., shall be installed on concrete bases. The bases shall be constructed to the dimensions shown on the Drawings or as required to meet plan elevations. Where no specific plan elevations are required, the bases shall be 6 inches thick and shall extend 3 inches outside the equipment base. In general, the concrete bases shall be placed up to 1-inch below the base. The equipment shall then be properly trimmed to grade and the 1-inch void filled with nonshrink epoxy grout.

END OF SECTION 03-310

SECTION 16-010

GENERAL ELECTRICAL REQUIREMENTS

PART 1–GENERAL

1.01 SUMMARY

- A. Work includes general requirements for all electrical work.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 REFERENCES

- A. ANSI/NFPA 70–National Electric Code.
- B. ANSI/IEEE C2.

1.03 CONTRACT DOCUMENTS

- A. Any device roughed-in improperly and not positioned on implied centerlines, or as dictated by good practice, must be repositioned at no cost to OWNER.
- B. The drawings are generally diagrammatic, and CONTRACTOR shall coordinate the work so that interferences are avoided. Provide all offsets in conduit, fittings, etc., necessary to properly install the work. All offsets, fittings, etc., shall be provided without additional expense to OWNER.

1.04 REGULATORY REQUIREMENTS

- A. Conform to ANSI/NFPA 70.
- B. Conform to ANSI/IEEE C2.
- C. The rules and regulations of the federal, state, local, civil authorities, and utility companies in force at the time of execution of the Contract shall become a part of this specification.
- D. Obtain electrical permits and inspections from authority having jurisdiction. Costs for permits and inspections shall be by CONTRACTOR.

1.05 CODES AND ORDINANCES

- A. CONTRACTOR is expected to know or to ascertain, in general and in detail, the requirements of all codes and ordinances applicable to the construction and operation of systems covered by this Contract. CONTRACTOR shall know or ascertain the rulings and interpretations of code requirements being made by all authorities having jurisdiction over the work to be performed by him.
- B. In preparing his Bid, CONTRACTOR shall include the cost of all items and procedures necessary to satisfy the requirements of all applicable codes, ordinances, and authorities whether or not these are specifically covered by the drawings and specifications. All cases of serious conflict or omission between the drawings, specifications, and codes shall be brought to ENGINEER's attention as herein before specified. CONTRACTOR shall carry out work and complete construction as required by applicable codes and ordinances and in such manner as to obtain approval of all authorities whose approval is required.
- C. When requested by ENGINEER, CONTRACTOR shall provide written calculations to show compliance with applicable codes or the Contract Documents. This shall include, but not be limited to, conduit and wire sizing, junction and pull box fill and sizing, conductor derating, and voltage drop.

CONTRACTOR shall indicate calculation method used as well as compliance with applicable code, drawing, or specification.

1.06 EQUIPMENT PROVIDED UNDER OTHER DIVISIONS

- A. Included in this Contract are electrical connections to equipment provided under other divisions. CONTRACTOR shall refer to final shop drawings for equipment being furnished under other divisions for exact location of electrical devices and the various connections.

1.07 ELECTRICAL DISTRIBUTION SYSTEM

- A. Provide a complete electrical distribution system consisting of components indicated on the drawings or specified herein, including, but not limited to:
 - 1. Feeders and branch wiring.
 - 2. All control wiring.
 - 3. Access panels and access doors for access to equipment installed by Division 16.
 - 4. Wiring between system components if equipment is not prewired.
 - 5. Support system design and supports for electrical raceways.
 - 6. Code required disconnects.
- B. CONTRACTOR shall connect equipment provided under other divisions as indicated herein.
- C. Provide balancing and adjusting of electrical loads.
- D. CONTRACTOR shall instruct OWNER's representative in the operation and maintenance of all equipment. The instruction shall include a complete operating cycle on all apparatus.
- E. Provide miscellaneous items for a complete and functioning system as indicated on the drawings and specified herein.

1.08 NOISE

- A. Eliminate any abnormal noises which are not considered by ENGINEER to be an inherent part of the systems as designed. Abnormal buzzing in equipment components will not be acceptable.

1.09 DRAWINGS

- A. The drawings indicate approximate locations of the various items of the electrical systems. These items are shown approximately to scale and attempt to show how these items should be integrated with construction. Locate all the various items by on-the-job measurements in conformance with Contract Documents and cooperation with other trades.
- B. The drawings are schematic in nature and are not intended to show exact locations of conduit but rather to indicate distribution, circuitry, and control.
- C. In certain instances, electrical equipment or other electrical devices may be relocated. Where relocation is within 10 feet of location shown on the drawings, and when CONTRACTOR is informed of necessary relocation before work is begun on this portion of the job, the relocation shall be at CONTRACTOR'S expense.

1.10 EXISTING UNDERGROUND UTILITIES

- A. Record drawings of existing underground electrical utilities are not available for these stations. CONTRACTOR shall excavate and verify the location of all underground electrical prior to installing new electrical equipment. This shall include, but not be limited to, feeders to structures and equipment, branch circuit wiring, phone and communication cabling, instrument wiring, and control wiring. CONTRACTOR shall temporarily relocate existing underground electrical to keep the existing

facility in operation and for any new construction, and all costs for relocating existing electrical shall be included in the Bid.

1.11 SUBMITTALS

- A. CONTRACTOR shall submit to ENGINEER for approval prior to beginning his work, shop drawings on the equipment proposed to be furnished and installed. See Division 1-Submittals for requirements.
- B. CONTRACTOR shall, in addition, submit drawings and/or diagrams for review and for job coordination in all cases where deviation from the Contract Drawings are contemplated because of job conditions, interference or substitution of equipment, or when requested by ENGINEER for purposes of clarification of CONTRACTOR's intent. CONTRACTOR shall also submit detailed drawings, rough-in sheets, etc., for all special or custom-built items or equipment. Drawings and details under this section shall include, but not be limited to, electrical interlock wiring diagrams (see Section 16940–Controls and Instrumentation), where applicable to this project:
- C. These drawings and diagrams shall show all electrical switch and breaker sizes as well as the manufacturer's name and catalog number of each piece of equipment used.
- D. Equipment and material submittals must show sufficient data to indicate complete compliance with Contract Documents as follows:
 - 1. Proper sizes and capacities.
 - 2. Construction materials and finishes.
- E. When the manufacturer's reference numbers are different from those specified, provide correct cross-reference number for each item. The shop drawings shall be clearly marked and noted accordingly.
- F. When equipment and items specified include accessories, parts, and additional items under one designation, shop drawings shall be complete and include all components.
- G. See additional requirements of shop drawings under Division 1–General Requirements.

PART 2–PRODUCTS

2.01 STANDARD PRODUCTS

- A. All equipment shall be UL-listed and NEMA-approved.
- B. All equipment and wiring shall be selected and installed for conditions in which it will perform; e.g., general purpose, weatherproof, raintight, explosionproof, dusttight, or any other special type.

2.02 SUBSTITUTION OF MATERIALS AND EQUIPMENT

- A. While it is not the intention of OWNER to discriminate against any manufacturer of equipment which may be equivalent to specified equipment, a strict interpretation of such equivalency will be exercised in considering any equipment offered as a substitute for specified equipment. CONTRACTOR shall submit with each request for approval of substitute material or equipment, sufficient data to show conclusively that it is equivalent to that specified in the following respects:
 - 1. Performance:
 - a. Capacity at conditions and operating speeds scheduled shall be equal to or greater than that of the specified equipment.
 - b. Energy consumption at the point of rating shall not exceed that of the specified equipment.
 - c. Vibration and noise production at the point of rating shall not exceed that of the specified equipment.
 - 2. Materials of construction.

3. Gauges, weights and sizes of all portions and component parts.
 4. Design arrangements and workmanship.
 5. Coatings, finishes and durability of wearing parts.
 6. National reputation of the manufacturer as a producer of first quality equipment of the type under consideration.
 7. Availability of prompt, reliable and efficient service facilities franchised by or affiliated with the equipment manufacturer. This shall include the maintenance of local stocks of critical replacement parts equal to those maintained for the specified equipment.
- B. Requests for substitution shall include CONTRACTOR's reason for the request.
- C. If ENGINEER does not consider the items equivalent to those specified, CONTRACTOR shall provide those specified.
- D. See General Conditions for additional requirements.

PART 3-EXECUTION

3.01 CONTINUITY OF SERVICE

- A. CONTRACTOR shall provide and maintain continuous services (power, controls, alarms, etc.) during the entire construction period.
- B. No service shall be interrupted or changed without permission from OWNER. Written permission shall be obtained before any work is started.
- C. When interruption of service is required, all persons concerned shall be notified and a prearranged time agreed upon. Notice shall be a minimum of 72 hours prior to the interruption.

3.02 CLEANING UP AND REMOVAL OF RUBBISH

- A. All control panels, disconnect switch enclosures, junction boxes, and pullboxes shall be cleaned of debris and wires neatly arranged with surplus length cut off prior to installation of covers.
- B. Equipment shall be thoroughly cleaned of all stains, paint spots, dirt, and dust. All temporary labels not used for instruction or operation shall be removed.

3.03 CONCRETE WORK

- A. All cast-in-place concrete for new electrical equipment bases shown on the drawings shall be provided by CONTRACTOR except where specifically noted to be provided by others. All new equipment shall be set on 3 1/2-inch, minimum, above finished grade, leveling slabs or as shown on the drawings, including control panels. Pads shall be 3 inches larger than equipment being supported.
- B. Concrete shall be minimum 6-bag, 4,000 psi, air-entrained, cast-in-place concrete. Reinforcing shall be grade 60.
- C. Provide all anchor bolts, metal shapes, and templates to be cast in concrete or used to form concrete for support of electrical equipment.

3.04 PAINTING

- A. All painting of electrical equipment shall be done by CONTRACTOR unless equipment is specified to be furnished with factory-applied finish coats.
- B. All electrical equipment shall be provided with factory-applied prime finish, unless otherwise specified.

- C. If the factory finish on any equipment furnished by CONTRACTOR is damaged in shipment or during construction, the equipment shall be refinished by CONTRACTOR to the satisfaction of ENGINEER.
- D. One can of touch-up paint shall be provided for each different color factory finish which is to be the final finished surface of the product.

3.05 CAULKING

- A. Caulk with a caulking sealant where indicated on the electrical drawings or hereinafter specified.
- B. Caulking sealant shall be silicone construction sealant as manufactured by General Electric or two-part polysulfide conforming to the requirements of, and bearing the seal of, the Thiokol Chemical Corporation.
- C. Caulking sealant shall contain no acid or ingredients which will stain stone, corrode metal, or have injurious effect on painting. It shall be colored to match adjacent surroundings.
- D. Caulking shall be performed by craftsman skilled at such work.

3.06 COORDINATION

- A. Provide wiring for all motors and all electrically-powered or electrically-controlled equipment.
- B. All starters, disconnects, relays, wire, conduit, push-buttons, pilot lights, and other devices for the power and control of motors or electrical equipment shall be provided by CONTRACTOR, except as specifically noted elsewhere in these specifications or on the drawings.
- C. Where other devices are provided by others, they shall be connected and wired by CONTRACTOR.
- D. CONTRACTOR's drawings and specifications shall show number and horsepower rating of all motors furnished together with their actuating devices. Should any change in size, horsepower rating, or means of control be made to any motor or other electrical equipment after the contracts are awarded, any additional costs because of these changes shall be the responsibility of CONTRACTOR.
- E. All motors shall be provided for starting in accordance with local utility requirements and shall be compatible with starters as specified herein or under the various trades' sections of these specifications.
- F. CONTRACTOR shall provide all power and control wiring and connect all equipment complete and ready to operate.
- G. CONTRACTOR shall connect and wire all apparatus according to approved wiring diagrams furnished by the various trades.

3.07 EXCAVATION AND BACKFILL

- A. Backfill of exterior trenches shall be compacted granular fill.
- B. Lines passing under foundation walls shall have a minimum of 1 1/2-inch clearance.
- C. Care shall be taken to insure no disturbance of bearing soil under foundations.
- D. CONTRACTOR shall follow underground pipe runs where possible to avoid additional rock excavation.

3.08 EQUIPMENT ACCESS

- A. CONTRACTOR shall coordinate work of this division with that of other divisions so that all systems, equipment, and other components will be installed at the proper time, will fit the available space, and will allow proper service access to those items requiring maintenance. This means adequate access to all equipment, not just that installed under this division.
- B. Any components for the electrical systems which are installed without regard to the above shall be removed and relocated as required to provide adequate access at CONTRACTOR's expense.
- C. All equipment, junction and pull boxes, and accessories shall be installed to permit access to equipment for maintenance. Any relocation of conduits, equipment, or accessories to provide maintenance access shall be accomplished by CONTRACTOR at no additional cost.
- D. Electrical equipment, devices, instruments, hardware, etc. shall be installed with ample space allowed for removal, repair, calibration, or changes to the equipment. Ready accessibility to equipment and wiring shall be provided without moving other equipment which is to be installed or which is already in place.

3.09 WORKMANSHIP

- A. Install work using procedures defined in NECA Standard of Installation.
- B. Location of process equipment as shown on the drawings is approximate.
- C. Utilization equipment and control devices required under these specifications shall be mounted in a code-approved manner.
- D. Locations of utilization equipment and control devices as shown on drawings are within 10 feet of actual positions. Any mounting of this equipment within this 10-foot distance will be performed at no additional cost to OWNER.
- E. Unless otherwise noted, equipment shall be fastened to foundation, structure, or equipment framework and not placed on grade.
- F. Where materials, equipment apparatus, or other products are specified by manufacturer brand name and type of catalog number, such designation is to establish standards of desired quality and style and shall be the basis of the bid.
- G. Materials and equipment of the types for which there are National Board of fire Underwriters' Laboratories (UL) listing and label service shall be so labeled and shall be used by CONTRACTOR.

3.10 AREA CLASSIFICATION

- A. As noted on the drawings.

3.11 MODIFICATIONS TO EXISTING CONSTRUCTION

- A. Alterations:
 - 1. Alter, extend, and reconnect conduits as necessary.
 - 2. Reconnect existing conduits which were reused, cut, or exposed because of construction as quickly as possible.
 - 3. All new conduits, wiring, and electrical items shall be connected to the existing systems so as to function as a complete unit.
 - 4. Where existing electrical equipment, devices, electrically operated items, etc., interfere with any rehabilitation work, they shall be removed and reinstalled in another location to avoid such interferences. All existing and relocated equipment shall be left in good operating condition.

- B. CONTRACTOR shall remove all conduit and wiring associated with items specified herein and/or shown on the drawings to be removed.
- C. Include in Bid removal of existing electrical material and equipment as specified hereinafter, as noted on the drawings, or as needed by field conditions.

END OF SECTION 16-010

SECTION 16-110

CONDUIT

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Rigid aluminum conduit.
 - 2. PVC internally and externally coated galvanized rigid metal conduit.
 - 3. Polyvinyl chloride conduit and fittings.
 - 4. Liquid-tight flexible metal conduit and fittings.
 - 5. Conduit seals and special fittings.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 REFERENCES

- A. ANSI/NEMA FB 1–Fittings and Supports for Conduit and Cable assemblies.
- B. NEMA RN 1–PVC Externally and Internally-Coated Galvanized Rigid Steel Conduit.
- C. ANSI C80.5–Electrical Rigid Aluminum Conduit (ERAC).

1.03 QUALITY ASSURANCE

- A. Manufacturers of Raceways: Firms regularly engaged in the manufacture of electrical raceways of the types and capacities required whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation work similar to that for the project.
- C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.
- D. UL Labels: Provide electrical cable, raceways, wire, connectors, outlets, switches, etc., which have been listed and labeled by Underwriters Laboratories.
- E. Prior to shipment to the site, all conduit shall be new, unused material and may not have been stored outdoors or exposed to weather.
- F. NECA Standard: Comply with applicable portions of National Electrical Contractor’s Association’s “Standard of Installation.”

1.04 SUBMITTALS

- A. Submit shop drawings and product data in accordance with provisions of Section 01200-Submittals.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Provide color-coded thread protectors on the exposed threads of threaded rigid metal conduit.
- B. Handle conduit carefully to prevent end-damage and to avoid scoring the finish.

- C. Store conduit inside and protect from weather. When necessary to store outdoors, elevate well above grade and enclose with durable waterproof wrapping.

PART 2–PRODUCTS

2.01 RIGID METAL CONDUIT AND FITTINGS

- A. Rigid Aluminum Conduit: ANSI C80.5. Heavy wall.
- B. Conduit bodies for rigid aluminum conduit shall be as manufactured by Appleton, Form 85, or equal, and be constructed of pressure-cast, copper-free aluminum for sizes 2 inches and under, and sand-cast, copper-free aluminum for sizes over 2 inches. Conduit bodies shall have built-in pulling rollers, domed gasketed covers, and stainless steel screws. CONTRACTOR shall select body style and size per application.
- C. PVC-coated conduit and fittings shall be internally and externally hot-dipped galvanized rigid metal conduit with hot galvanized threads and PVC coating. PVC coating shall be UL listed with rigid metal conduit as the primary means of corrosion protection for the conduit and PVC coating. Acceptable manufacturers shall be Plasti-bond RedH₂O_T by Robroy Industries, Permacote Industries Supreme Conduit System, or equal. PVC-coated conduit and fittings shall meet the following listings and manufacturing standards and shall bear the ETL Verified PVC-001 label to signify conformance to the adhesion performance standard.
 1. Federal Specification WW-C-581 E.
 2. ANSI C80.1
 3. Electrical Rigid Metal Conduit–Steel UL 6 and UL 514B (Conduit, Tubing, and Cable Fittings).
 4. ETL verified to Intertek ETL SEMKO high temperature water PVC coating adhesion test procedure.
- D. Conduit bodies for PVC coated rigid conduit shall be as manufactured by Plasti-bond RedH₂O_T by Robroy Industries, Perma-Cote Industries Supreme Conduit System, or equal, and have a 40 mil PVC exterior coating and 2 mil red urethane interior coating. Conduit bodies shall be Form 7 style or pulling elbow and include domed, gasketed covers and stainless steel screws. CONTRACTOR shall select body style and size per application.

2.02 POLYVINYL CHLORIDE CONDUIT (PVC) AND FITTINGS

- A. Conduit: Heavy wall rigid, Schedule 40, UL listed for underground, encased, and aboveground applications. PVC conduit installed in exterior locations shall be UV-resistant.
- B. Fittings and Conduit Bodies: ANSI/NEMA FB 1.

2.03 LIQUIDTIGHT FLEXIBLE METAL CONDUIT AND FITTINGS

- A. Conduit: Electrogalvanized single-strip steel with PVC coating and integral grounding conductor. Liquidtight conduit installed in exterior locations shall be sunlight resistant. Conduit shall be UL listed.
- B. Fittings: ANSI/NEMA FB 1.

2.04 CONDUIT SUPPORTS AND SPECIAL FITTINGS

- A. Conduit shall be sealed with duct sealing compound, OZ Gedney Type DUX, or equal.
- B. Expansion Fittings: Crouse Hinds or Robroy, type XJG, or equal, for rigid, IMC, or PVC-coated rigid conduit. Crouse-Hinds, type XD, or equal for PVC conduit.
- C. Expansion-Deflection Fittings: OZ type “DX”, Crouse-Hinds, type XD, or Appleton.

- D. Mechanical Seals: 316 stainless steel, Link Seal, or equal. Link Seals shall be provided with 316 stainless steel bolts, nuts, and fasteners.
- E. Conduit Clamps, Straps, and Supports: Fiberglass, PVC or 316 stainless steel with no crevices.
- F. Watertight Hubs: Die-cast, insulated, and gasketed, rated for wet or dry locations, indoors or outdoors. Watertight hubs shall be Appleton HUB, Crouse Hinds Meyers Hubs, or equal.

PART 3-EXECUTION

3.01 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

- A. Size conduits for branch circuit conductors, control wires, and instrumentation cables so as to have not less than 25% spare capacity after installation; 3/4-inch minimum size. Minimum size for liquid-tight flexible metal conduit is 1/2-inch.
- B. Maintain at least 1-inch separation between conduit sizes to 1 1/2 inches; 2 inches between conduits 1 1/2 inches or larger. Maintain 1-foot separation between signal conduits (below 100 volts) and power conduits (100 volts and above).

3.02 CONDUIT INSTALLATION

- A. Provide for the proper application, installation, and location of inserts and supports and anchor bolts for a satisfactory raceway system. Where any component of the raceway system is damaged, replace or provide new raceway system.
- B. Run conduits concealed to avoid adverse conditions such as heat and moisture, to permit drainage, and to avoid all materials and equipment of other trades.
- C. Ream conduit smooth at ends, cap upon installation, rigidly attach to structural parts of the building, and securely fasten to all outlet boxes, panel cabinets, junction boxes, pull boxes, splicing chambers, safety switches, and all other components of the raceway system.
- D. Independently support or attach the raceway system to structural parts of construction in accordance with good industry practice.
- E. Conduits passing through masonry, concrete, or similar construction shall be cast-in-place using PVC-coated rigid conduit extending completely through the construction.
- F. Where wall penetrations through existing walls are below grade, cored openings shall be sealed with waterproof mechanical seals. Cores shall be pitched slightly so that conduit slopes away from building or structure. Sleeve diameter shall be provided and mechanical seals installed as recommended by the manufacturer.
- G. Conduit shall not be run in slabs-on-grade or structural topping slabs.
- H. Conduits installed for future equipment or electrical work shall be cut off and capped flush with finished grade or slab. Conduit ends shall have threaded fittings to accommodate future conduit installation.
- I. Provide all empty raceways 2 1/2 inches and over with No. 10 galvanized fishwire, and nylon cord for conduits smaller than 2 1/2 inches. Empty raceways and fishwire/nylon cord shall be identified with permanent label, and label shall include conduit termination point. All empty conduits shall be threaded, capped, and flush with finished grade or slab. Exposed conduits shall be threaded and capped.
- J. Provided conduit raceway for exposed cables that are not sunlight resistant. This shall include, but not be limited to, instrument wiring, etc.

- K. Provide conduit expansion fittings as specified herein, in all conduit runs that cross a structural expansion joint, and for conduits protruding from earth where the conduit is terminated within 5 feet of finished grade.
- L. Provide conduit expansion/deflection fittings as specified herein in all conduit runs where movement perpendicular to axis of conduit may be encountered.
- M. All conduits that protrude from poured concrete shall be PVC-coated rigid conduit. Conduit shall extend a minimum of 4 feet beyond the poured concrete (both sides).
- N. Conduit seals shall be provided when conduits pass from an interior to exterior location.
- O. Liquid-tight flexible conduit shall be installed in such a manner that liquids tend to run off the surfaces and not drain towards the fittings.
- P. All runs of flexible conduit to equipment and devices shall be as short as practicable, of the same size as the conduit it extends, and with enough slack to reduce the effects of vibration to a minimum. A minimum of 18 inches of flexible conduit shall be installed for each motor.
- Q. Where fittings are brought into an enclosure with a knock-out, a gasket assembly consisting of an O-ring and retainer shall be installed on the outside. Fittings shall be insulated throat type.
- R. PVC conduit shall be securely fastened to a structure at intervals not exceeding 3 feet, or closer.
- S. All conduit installed below grade shall be buried a minimum of 2 feet 0 inches.
- T. PVC conduit installed in earth shall be bedded in compacted sand with a minimum of 6-inch cover on all sides.
- U. Conduit bends for PVC conduit shall be made using a hot box, heat blanket, or glycol bender. Open flame or point heat sources of any type are not allowed.
- V. The PVC-coated rigid conduit manufacturer's touch-up compound shall be used on all conduit interior and exterior bare steel exposed because of nicks, cuts, abrasions, thread cutting and reaming; minimum six coats.

3.03 CONDUIT INSTALLATION SCHEDULE

- A. The following schedule lists specific conduit types allowed in designated areas. Those areas not listed under a specific conduit type shall not have that type of conduit installed.
 - 1. Rigid aluminum: All locations where attached to aluminum railings of aluminum structure members (i.e., elevated tank ladders).
 - 2. PVC Coated Rigid Steel:
 - a. Conduits protruding from concrete.
 - b. Interior and exterior locations requiring mechanical protection.
 - c. Earth.
 - d. Exterior locations and locations exposed to weather.
 - e. Within 6 feet of a structure footing or wall.
 - 3. PVC:
 - a. Earth, except within 6 feet of a structure footing or wall.
 - b. Service entrance ground conductors.
 - 4. Liquid-tight Flexible Metal Conduit not over 3 feet in length for connections to:
 - a. Equipment with sliding basis or flexible positioning.
 - b. Equipment with vibration isolation mounting.
 - c. Equipment housing ferromagnetic cores or with integral moving components capable of generating noise or vibrations, including motors.

END OF SECTION 16-110

SECTION 16-120

WIRE

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Wire.
 - 2. Terminal blocks and accessories.
 - 3. Wiring connections and terminations.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 QUALITY ASSURANCE

- A. Manufacturers of Wire: Firms regularly engaged in the manufacture of electrical wire products of the types and ratings needed whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation work similar to that in this project.
- C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.
- D. UL Labels: Provide electrical raceways, wire, connectors, outlets, switches, etc., which have been listed and labeled by Underwriters Laboratories.
- E. NECA Standard: Comply with applicable portions of National Electrical Contractor's Association's "Standard of Installation."

1.03 SUBMITTALS

- A. Submit shop drawings and product data under the provisions of Section 01200–Submittals.
- B. Submit shop drawings for wiring system including layout of distribution devices, branch circuit conduit and cables, circuiting arrangement, and outlet devices.
- C. Submit manufacturer's instructions.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Provide factory-wrapped, waterproof, flexible barrier material for covering wire on wood reels, where applicable; and weather-resistant fiberboard containers for factory-packaging of wire, connectors, outlets, boxes, lamps, fuses, etc., to protect against physical damage in transit. Do not install damaged wire or other material; remove from project site.
- B. Store wire and other material in factory-installed coverings in a clean, dry, indoor space which provides protection against the weather.

PART 2-PRODUCTS

2.01 WIRE

- A. All wire for permanent installation shall be new stranded copper, delivered to project in unopened cartons or reels, except where specifically noted and be UL listed for the use intended. No wire smaller than 12 AWG shall be used unless specifically noted. The use of multi-conductor cable is NOT ALLOWED.
- B. Motor circuit branch wiring and associated control wiring:
 - 1. Insulation type shall be XHHW-2.
 - 2. Minimum size for motor control wiring shall be 14 AWG.
 - 3. Control wiring for supervisory equipment shall be shielded, sized per equipment manufacturer's recommendations, or as shown on drawings.
- C. All wiring within control panels and supervisory control centers shall be insulation type MTW, minimum size 16 AWG.
- D. Wiring shall be XHHW-2.
- E. All available colors shall be used; however, green shall be used only for equipment grounds. Where color-coded wire in larger sizes is not available, one wrap of 1-inch-wide, colored, self-adhesive tape at each terminal end shall be used for identification. Initial phase color shall be used throughout the run, even for switch legs. Colors must meet code requirements for each class voltage. Do not duplicate colors, including neutral, on different voltages.
- F. Color Coding:

	<u>120/240V</u>
A Phase	Black
B Phase	Red
C Phase	Blue
Neutral	White
Travelers	Yellow
Equipment Ground	Green

- G. Circuits 150 feet or over shall be sized for a maximum 2% voltage drop.

2.02 WIRING CONNECTIONS AND TERMINATIONS

- A. Stranded conductors may only be terminated with UL or ETL Listed type terminations or methods: e.g. stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device.
- B. Provide insulated, **silicone-filled** spring wire connectors with plastic caps for 8 AWG conductors and smaller. Connectors shall be King Silicone-Filled Safety Connectors, or equal. Spring wire connectors shall only be allowed in junction, outlet, or switch boxes.
- C. No splices will be allowed unless acceptable to ENGINEER. Where allowed, provide in-line splices for all conductor connections, 6 AWG and larger. Splice crimp component shall be Burndy copper compression splice long barrel, beveled entry, type YS, or equal. Splice shall be made with crimp tool by manufacturer that allows expanded conductor ranges. Splice insulation component shall be Raychem heavy-wall, low voltage tubing, type WCSM, or equal.

2.03 TERMINAL BLOCKS AND ACCESSORIES

- A. Terminal Blocks: ANSI/NEMA ICS 4: UL listed.
- B. Power Terminals: Unit construction-type, closed-back-type, with tubular pressure screw connectors, rated 600 volts.
- C. Signal and Control Terminals: Modular construction-type, channel mounted; tubular pressure screw connectors, rated 300 volts.
- D. Manufacturer and Model Number: Phoenix Contact UK 5 N, or equal.

PART 3-EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions under which the work is to be installed and notify CONTRACTOR of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

3.02 GENERAL WIRING METHODS

- A. Install electrical wire and connectors in accordance with the manufacturer's written instructions; applicable requirements of the NEC, the National Electrical Contractors Association's "Standard of Installation"; and in accordance with recognized industry practices to ensure that products serve the intended functions.
- B. Place an equal number of conductors for each phase of a circuit in same raceway.
- C. Splice only in junction or outlet boxes. Splicing is not allowed in disconnects, control panels, etc. Avoid splices between terminals of interconnecting power and control wiring.
- D. Spring wire connectors shall only be used in junction, outlet, or switch boxes. Equipment wireways (e.g. disconnects, etc.) and control panels shall not have any spring wire connectors installed; all terminations shall be on terminal strips.
- E. Neatly train, lace, and tie wrap all wiring inside boxes, equipment, control panels, and enclosures.
- F. Make conductor lengths for parallel circuits equal.
- G. The same color shall be used for each numbered wire throughout its entire length.
- H. Terminate all wiring on terminal blocks in control panels and similar equipment. This shall include all spare or unused wires.
- I. Provide preprinted adhesive or heat shrink-type wire numbering labels at all terminations and splices. Wire numbering preprinted on the conductor, flag-type labels, and individual wraparound numbers (e.g. Brady labels) are not acceptable.
- J. Use appropriate wiring methods and materials for the equipment or environment.
- K. Do not use a pulling means which can damage the raceway.
- L. Conductors #6 AWG and larger shall be pulled in to conduits utilizing a tugger with built-in tension meter. CONTRACTOR shall provide a report to ENGINEER for each pull indicating maximum

tension reached during the pull along with manufacturer's maximum pulling tension. Motorized machines of any type are NOT ALLOWED for any wire pulling.

- M. Signal wiring (below 100 volts) wiring must be in a conduit separate from power and/or control wiring (over 100 volts). Signal wire shall include, but not be limited to, loop powered devices, and communication wiring (i.e. RS-232, etc.).
- N. Provide junction or pull boxes to facilitate the "pulling in" of wires or to make necessary connections. All raceways and apparatus shall be thoroughly blown out and cleaned of foreign matter prior to pulling in wires.
- O. Thoroughly clean wires before installing lugs and connectors.
- P. Make splices, taps, and terminations to carry full capacity of conductors without perceptible temperature rise.
- Q. Terminate spare conductors within equipment, control panels, etc. on terminal strips and label as "SPARE." Spare wiring in pull or junction boxes may be terminated with electrical tape and labeled as "SPARE." All spare conductor labels shall indicate where the conductors terminate. Refer to Section 16195–Electrical Identification, for additional requirements.

3.03 WIRING INSTALLATION IN RACEWAYS

- A. Pull all conductors into a raceway at the same time. Use UL-listed wire-pulling lubricant for pulling 4 AWG and larger wires. Yellow 77 pulling lubricant is not allowed.
- B. Install wire in raceway after all mechanical work likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.
- D. Conductors shall be installed in conduit system in such a manner that insulation is not damaged, conductors are not overstressed in pulling, and walls are not damaged. No splices are permitted except in junction boxes or outlet boxes.
- E. CONTRACTOR shall observe code limitation on the number and size of wires in an outlet box. CONTRACTOR shall either lay out work so that the wires do not exceed the particular box limitation, or provide larger boxes approved for additional capacity.
- F. Individual phases for all power wiring shall be identified with colored tape at all lugs/terminations. The same phase relation shall be maintained throughout.
- G. Circuiting is indicated diagrammatically on the drawings.

3.04 FIELD QUALITY CONTROL

- A. Inspect wire for physical damage and proper connection.
- B. Torque test conductor connections and terminations to manufacturer's recommended values.
- C. Prior to energizing, check conduit, raceways, outlet boxes, and wire for continuity of circuitry and for short circuits. Correct malfunction when detected.
- D. Subsequent to wire hook-ups, energize circuitry and demonstrate functioning in accordance with these specifications.
- E. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

- F. Perform field inspection and testing according to provisions of this section.

3.05 ACCEPTANCE TESTS

- A. CONTRACTOR shall furnish all materials, labor, and equipment necessary for the acceptance tests specified herein. Acceptance tests shall be performed in the presence of OWNER or OWNER's representative and must be passed before final acceptance of the work.
- B. CONTRACTOR shall be responsible for powered tests of each field installed device unless specifically noted otherwise. CONTRACTOR shall be responsible for device operation as powered from its power source.
- C. Operation Test—By operational testing, OWNER will give final acceptance of the wiring system when all of the wiring is considered a complete system. All equipment shall function and operate in the proper manner as indicated in the details of the specifications and on the drawings. All motors shall be properly connected to protective devices, and motor rotation shall be in the correct direction.
- D. At the request of OWNER's representative, demonstrate by test the compliance of the installation with these specifications and drawings, the National Electrical Code, and the accepted standards of good workmanship. These tests shall include operation of equipment, continuity of the conduit system, grounding resistance and insulation resistance.
- E. A written record of performance tests on electrical and control and instrumentation systems and equipment shall be supplied to OWNER. Such tests shall show compliance with governing codes.

3.06 WIRE INSTALLATION SCHEDULE

- A. Install all wiring in raceways except as otherwise noted. This includes all low voltage wiring such as control, instrumentation, etc.

END OF SECTION 16-120

SECTION 16-130

BOXES

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Wall and ceiling outlet boxes.
 - 2. Pull and junction boxes.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 REFERENCES

- A. ANSI/NEMA OS 1–Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports.
- B. ANSI/NEMA OS 2–Nonmetallic Outlet Boxes, Device Boxes, Covers, and Box Supports.
- C. NEMA 250–Enclosures for Electrical Equipment (1000 Volts Maximum).

1.03 QUALITY ASSURANCE

- A. Manufacturers of switches, outlets, boxes, lamps, fuses, lugs, etc.: Firms regularly engaged in the manufacture of these products, of the types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation work similar to that in this project.
- C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.
- D. UL Labels: Provide electrical cable, boxes, raceways, wire, connectors, outlets, switches, etc., which have been listed and labeled by Underwriters Laboratories.
- E. NECA Standard: Comply with applicable portions of National Electrical Contractor's Association's "Standard of Installation."

1.04 SUBMITTALS

- A. Submit shop drawings and product data in accordance with provisions of Section 01200–Submittals.

PART 2–PRODUCTS

2.01 SWITCH, OUTLET, AND SMALL JUNCTION BOXES

- A. Cast Boxes: Aluminum or cast ferrous, deep-type, gasketed cover, threaded hubs, Crouse-Hinds FD Series, or equal.

- B. PVC-Coated Cast Boxes: Provide PVC-coated cast boxes in areas where PVC-coated conduit is used. Boxes shall be by the same manufacturer as the conduit.
- C. NEMA 4X Boxes: PVC or FRP, Carlon HS Series, or equal, with proper cover and gasket.

2.02 PULL AND JUNCTION BOXES

- A. Cast Boxes: NEMA 250; Type 4, flat-flanged, surface-mounted junction box, UL-listed as watertight. Cast aluminum or ferrous box and cover with ground flange, neoprene gasket, and stainless steel cover screws, Crouse-Hinds WCB Series, or equal.
- B. PVC-Coated Cast Boxes: Provide PVC-coated cast boxes in areas where PVC-coated conduit is used. Boxes shall be by the same manufacturer as the conduit.
- C. NEMA 4X Boxes: PVC or FRP, Carlon FS Series, or equal with proper cover and gasket.
- D. Boxes Larger Than 12 inches in Any Dimension: Hinged enclosure in accordance with Section 16160–Cabinets and Enclosures.
- E. Boxes specified in this section are not allowed to have knockouts and are not allowed to be used as enclosures for control panels.

PART 3–EXECUTION

3.01 COORDINATION OF BOX LOCATIONS

- A. Provide electrical boxes as necessary for splices, taps, wire pulling, cable bending radii, equipment connections, and code compliance.
- B. Where dedicated raceways are provided for different voltage systems or wiring, separate boxes shall also be provided unless approved by ENGINEER. Where approved by ENGINEER, combined boxes shall be physically divided to separate the wiring.
- C. Locate and install boxes to allow access. Where installation is inaccessible, coordinate locations and sizes of access doors.
- D. Locate and install to maintain headroom and to present a neat appearance.
- E. All boxes attached to building surfaces which may be damp shall be spaced out to avoid rust and/or corrosion. All boxes in damp locations shall be on 1-inch standoffs. Damp locations shall include, but not be limited to, exterior locations, and all areas belowgrade.

3.02 SWITCH AND OUTLET BOX INSTALLATION

- A. Provide knockout closures for unused openings.
- B. Support boxes independently of conduit.
- C. Use multiple gang boxes where more than one device are mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.
- D. Switch and outlet boxes provided for branch circuits and feeders shall not contain control wiring. Control wiring shall have dedicated pull and junction boxes provided. Wiring for different voltage systems (e.g., 24 V, 120 V, 480 V) shall have dedicated pull and junction boxes for each voltage.
- E. For weatherproof switches, devices, and exterior fixtures, use cast boxes with proper cover and gasket.

- F. All exterior outlet boxes shall be NEMA 4X.
- G. Knockout punches or saws shall be used for holes; boxes with prepunched holes are not acceptable.
- H. Boxes shall be of a depth to accommodate wires and splices. Conduit will not be considered as adequate supports.
- I. Cast boxes with 3/4-inch hubs and aluminum fittings and enclosures may be used with all conduit types.

3.03 PULL AND JUNCTION BOX INSTALLATION

- A. Support pull and junction boxes independent of conduit.
- B. Knockout punches or saws shall be used for holes; boxes with prepunched holes are not acceptable.
- C. All junction boxes shall be labeled with permanent labels (not adhesive type). Permanent labels shall include painted stencil-type labels or engraved laminated nameplates. Labels shall indicate circuit or load served, as well as power source.
- D. All exterior junction and pull boxes shall be NEMA 4X. Boxes in areas subject to damage shall be stainless steel.

END OF SECTION 16-130

SECTION 16-160
CABINETS AND ENCLOSURES

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Hinged cover enclosures.
 - 2. Cabinets.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 REFERENCES

- A. NEMA 250–Enclosures for Electrical Equipment (1000 Volts Maximum).
- B. ANSI/NEMA ICS 1–Industrial Control and Systems.
- C. ANSI/NEMA ICS 6–Enclosures for Industrial Control Equipment and Systems.

1.03 SUBMITTALS

- A. Submit shop drawings and product data in accordance with provisions of Section 01200-Submittals.
- B. Show Drawings for Equipment Panels: Include wiring schematic diagram, connection diagram, outline drawing, and construction diagram as described in ANSI/NEMA ICS 1.

PART 2–PRODUCTS

2.01 HINGED COVER ENCLOSURES

- A. Construction: NEMA 250, larger than 12 inches in any dimension. Acceptable manufacturers: Hoffman, B-Line, or equal.
- B. Covers: Continuous hinge, applicable NEMA rating with hasp and staple for padlock.
- C. Back Panel for Mounting Terminal Blocks or Electrical Components: 14 gauge steel, white enamel finish.
- D. All cabinets with double doors or that are free-standing shall have 3-point latch.

2.02 CABINETS

- A. Construction: NEMA 250. Acceptable manufacturers: Hoffman, Saginaw, Lehman, EXM Manufacturing, or approved equal.
- B. Cabinet Fronts: Steel, surface-type with screw cover front, concealed hinge and flush lock. Finish in white baked-enamel.

2.03 FABRICATION

- A. Shop-assembled enclosures and cabinets housing terminal blocks or electrical components in accordance with ANSI/NEMA ICS 6.

- B. Provide conduit hubs on all enclosures.
- C. Provide protective pockets inside front cover with schematic diagram, connection diagram, and layout drawing of control wiring and components within enclosure.
- D. Provide gasketed surfaces for all enclosure and cabinet doors and covers.

2.04 ENCLOSURE RATING

- A. For Outdoor or Wet Locations: Cabinets and enclosures shall be rated as NEMA 4X, stainless steel, unless noted otherwise on the drawings.
- B. For Indoor or Non-corrosive Locations: Cabinets and enclosures shall be rated as NEMA 12, painted steel, unless noted otherwise on the drawings.

PART 3-EXECUTION

3.01 INSTALLATION

- A. Install cabinets and enclosures plumb. Anchor securely to wall and structural supports at each corner minimum.
- B. All cabinets and enclosures shall be labeled with permanent labels (not adhesive-type). Permanent labels shall include painted, stencil-type labels or engraved laminated nameplates (4 inches by 4 inches minimum size).
- C. Provide accessory feet for free-standing equipment enclosures.
- D. All cabinets and enclosures attached to building surfaces which may be damp shall be spaced out to avoid rust and/or corrosion. All boxes in damp locations shall be on 1-inch standoffs. Damp locations shall include, but not be limited to, exterior locations and all areas below grade.

END OF SECTION 16-160

SECTION 16-190
SUPPORTING DEVICES

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Conduit and equipment support members.
 - 2. Fastening hardware.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 QUALITY ASSURANCE

- A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

1.03 SUBMITTALS

- A. Submit shop drawings and product data in accordance with provisions of Section 01200-Submittals.

PART 2–PRODUCTS

2.01 MATERIAL

- A. Support Members: 304 stainless steel, fiberglass, or PVC in exterior locations and damp locations. PVC-coated steel where used with PVC-coated conduit.
- B. Hardware: Stainless steel in exterior locations and damp locations.
- C. Manufacturers: Unistrut P-1000, B-line, Superstrut, or equal.

2.02 ANTENNA COAX CABLE SUPPORTS

- A. Support Members: UV resistant fiberglass material with gripping ribs.
- B. Hardware: Stainless steel round member adapter.
- C. Manufacturer: Andrew Corporation click-on single hanger kit with 34670-4 round member adapter, or equal.

PART 3–EXECUTION

3.01 INSTALLATION

- A. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using expansion anchors or support members. Do not use spring steel clips and clamps. Provide standoffs as specified in other technical sections.
- B. Use toggle bolts or hollow wall fasteners in hollow masonry, plaster, expansion anchors or preset inserts in solid masonry walls; and self-drilling anchors or expansion anchors on concrete surfaces.

- C. Where support members are used for conduit, cutoff ends shall be ground smooth. Cutoff PVC-coated support members shall be ground smooth and touched-up with PVC coating material from the manufacturer.
- D. Do not fasten supports to piping or conduit.
- E. Do not use powder-actuated anchors.
- F. Do not drill structural steel members.
- G. Fabricate supports with welded end caps and all welds and surfaces ground smooth for neat appearance. Use hexagon head bolts with steel spring-lock washers under all nuts.
- H. In wet locations anchor all equipment to walls with standoffs and caulk.
- I. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- J. Do not use chain hangers.
- K. All welds shall be continuous and ground smooth.

END OF SECTION 16-190

SECTION 16-195

ELECTRICAL IDENTIFICATION

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Nameplates.
 - 2. Labeling tags.
 - 3. Wire markers.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

- A. Submit shop drawings and product data in accordance with provisions of Section 01200–Submittals.
- B. Provide schedule for nameplates and labeling tags for shop drawings. Reference drawings for type used.

PART 2–PRODUCTS

2.01 NAMEPLATES

- A. Type “A”:
 - 1. Use:
 - a. Each separately mounted disconnect switch.
 - b. Cabinets, enclosures, pull, and junction boxes.
 - c. Field devices (flowmeter transmitters, etc.).
 - 2. Size: 2-inch by 3-inch.
 - 3. Material: 3-layer laminated Micarta.
 - 4. Background Color: Black.
 - 5. Character Color: White.
 - 6. Character Size: 1/4-inch.
 - 7. Engraving: See drawings for labels or as requested by ENGINEER. Label shall include equipment number and description.
 - 8. Mounting Location: Front exterior.
- B. Type “B”:
 - 1. Use: Supervisory Control Panels.
 - 1. Size: 4-inch by 4-inch.
 - 2. Material: 3-layer laminated Micarta.
 - 3. Background Color: Black.
 - 4. Character Color: White.
 - 5. Character Size: 2 1/4-inch.
 - 6. Engraving: Equipment label shall include equipment number and description (i.e. SCC-A, KY 277/Reservoir Avenue Tank).
 - 7. Mounting Location: Equipment: Top wireway.

2.02 LABELING TAGS

- A. Use: Filed-mounted devices (limit switches, etc.).
 - 1. Size: 1-inch by 3-inch.
 - 2. Material: 1/32-inch-thick stainless steel.
 - 3. Character Size: 1/4-inch.
 - 4. Engraving: As requested by ENGINEER.

2.03 WIRE MARKERS

- A. Wire markers shall be permanently attached sleeve or heat shrink-type labels. Wire numbering preprinted on the conductor, flag-type labels, and individual wrap around numbers (such as Brady preprinted markers) are not acceptable. All wire markers shall be the same throughout the project.
- B. Wire markers shall be specifically printed for this project using permanently attached computerized adhesive tags, such as Brady IDXPRT labeling printer with self laminating vinyl, permasleeve heat-shrink polyolefin, or equal. Hand-written markers are not acceptable.

PART 3-EXECUTION

3.01 INSTALLATION

- A. Degrease and clean surfaces to receive nameplates.
- B. Install nameplates parallel to equipment lines.
- C. Affix nameplates with stainless steel screws in outdoor locations and stickyback adhesive in indoor locations.
- D. Affix labeling tags with permanent bonding cement or locking wire ties. Provide 3/8-inch hole to accommodate wire tie.
- E. Prepare and install neatly typed directions in all panels including existing panels where work is done under this Contract.

3.02 WIRE IDENTIFICATION

- A. Provide wire markers on each conductor, including neutral and spare conductors, in gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams for control wiring. Spare conductors shall have control wire number of shall indicate termination point of wire.
- B. Conductors in pull boxes, supervisory control panels, cabinets, and enclosures shall be grouped as to circuits and arranged in a neat manner. All conductors of a feeder or branch circuit shall be grouped, bound together with nylon ties, and identified. Phase identification shall be consistent throughout the system.

END OF SECTION 16-195

SECTION 16-420

ELECTRICAL SERVICE SYSTEM

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
1. Utility company.
 2. Secondary service characteristics.
 3. Definitions.
 4. Sequencing, scheduling.
 5. Underground electrical service.
- B. Allowances:
1. New Electrical Service: CONTRACTOR shall INCLUDE in the respective bid price the cost of providing **New** Electrical Service from the Power Company at:

‘Free Henry Ford Road’ Master Meter (Site #2)
‘Morton & Elm Street’ Master Meter & Control Valve (Site #6)
 2. Existing Electrical Service: CONTRACTOR shall INCLUDE in the respective bid price the cost of connecting with and utilizing the Owner’s existing Electrical Service Feed at:

‘Water Tank’ Master Meter (Site #4)
‘E. Cross Street – Lift Station’ Master Meter (Site #5)
‘City Hall’ Master Site Location (Site #7)
- C. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 UTILITY COMPANY

- A. The Utility Company at all Project Sites is Kentucky Utilities (KU) {800-331-7370}.

1.03 SECONDARY SERVICE CHARACTERISTICS

- A. The secondary service will be 240/120-volt, 3-wire, single-phase.

1.04 DEFINITIONS

- A. Service–As defined in the NEC, Article 100.
- B. Secondary Voltage–600 volts and below.

1.05 SEQUENCING, SCHEDULING

- A. Provide electrical service system, except the Utility Company will provide:
1. Terminal pole and pole-mounted transformer.
 2. Cable from transformer to meter.
 3. Metering.

1.06 UNDERGROUND ELECTRICAL SERVICE

- A. Provide complete underground electrical service except for items furnished and installed by the Utility Company.

- B. Coordinate the electrical service with the Utility, and all Utility coordination costs shall be included in the unite price for the respective bid item(s). All costs associated with temporary service of any type shall be included in CONTRACTOR's bid. Costs for materials and work provided by the Utility shall be paid for by OWNER.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

3.01 INSTALLATION

- A. Trench and backfill for duct lines in accordance with Division 2.
- B. Install top of duct lines a minimum of 2 feet below finish grade and pitch for drainage.

END OF SECTION 16-420

SECTION 16-450
SECONDARY GROUNDING

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included:
 - 1. Power system grounding.
 - 2. Electrical equipment and raceway grounding and bonding.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

- A. Indicate location of system grounding electrode connections and routing of grounding electrode conductor.
- B. Submit shop drawings and product data in accordance with provisions of Section 01200-Submittals.

PART 2–PRODUCTS

2.01 MATERIALS

- A. Ground Rods: Copper bonded, 5/8-inch diameter, minimum length 10 feet.
- B. Ground Connections Below Grade: Exothermic type, Cadweld, or equal.
- C. Ground Fittings: O-Z/Gedney, Type ABG, CG, TG, KG, GBL, or equal.

PART 3–EXECUTION

3.01 INSTALLATION

- A. Provide a separate insulated equipment grounding conductor and neutral conductor (where applicable), for each feeder and branch circuit. Terminate each end on a grounding lug, bus, or bushing.
- B. Bond together system neutrals, exposed noncurrent carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, and receptacle ground connectors.
- C. Ground equipment as required by code and local ordinances.
- D. All feeder neutrals shall be connected to neutral at only one point in the supervisory control panel.
- E. All bare copper conductors installed outdoors shall be buried a minimum of 2 feet belowgrade.
- F. Include ground for grounded receptacles and other equipment items shown on drawings.
- G. Flexible connections do not qualify for ground. All flexible connections must have separate green ground wire from motor base or equipment frame to conduit system.

- H. Provide a separate grounding conductor system for the grounding of all devices installed in the same conduit as the branch circuit conductors. Ground conductors shall be individually connected at each device.
- I. All equipment that is fed from circuits in PVC conduit shall be provided with a separate green ground wire that is terminate at the metallic conduit system and the equipment.
- J. Refer to Specification Section 16-930 "Instrument Wire and Cable" for additional grounding requirements.
- K. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

END OF SECTION 16-450

SECTION 16-930

INSTRUMENT AND COMMUNICATION WIRE AND CABLE

PART 1–GENERAL

1.01 SUMMARY

- A. Work Included: This specification contains the requirements for instrument wire and cable as opposed to electrical power wire and cable.
- B. Related Sections and Divisions: Applicable provisions of Division 1 shall govern work in this section.

1.02 QUALITY ASSURANCE

- A. Standards: Comply with standards specified in this section as listed in Division 1.
- B. Qualifications of Installers: Use skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work.

1.03 PRODUCT HANDLING

- A. Instrument cable shall be furnished in lengths as necessary.
- B. Reels, coils, or package rolls of instrument cable shall be identified with the project name and other tagging identification as called for.

1.04 SUBMITTALS

- A. Submit shop drawings and product data in accordance with provisions of Section 01200-Submittals.

PART 2–PRODUCTS

2.01 GENERAL

- A. All materials of construction for cable and wire shall be compatible and non-contaminating.
- B. Unless otherwise noted in these specifications, the requirements herein listed shall be strictly adhered to.

2.02 SHIELDED PAIR CABLING FOR ELECTRONIC INSTRUMENTS

- A. Shielded pair cabling shall have stranded, tinned-copper conductors, No. 16 AWG (>500 LF cable run) or No. 18 AWG (<500 LF cable run), twisted with 2-inch lay.
- B. Insulation of conductors shall be 15 mil, 90°C minimum PVC, rated for 300 volts. Materials shall equal or exceed UL 13 requirements for physical properties.
- C. Color coding shall be manufacturer's standard or as stated.
- D. The outer jacket shall be flame-retardant and weather- and ultraviolet-resistant PVC, 35 mils thick, and 80°C minimum rating. The outer jacket shall contain a ripcord and shall equal or exceed the requirements of UL 1277. Cable shall be UL labeled as power-limited circuit cable.

- E. If the cabling is not installed in steel conduits, a 100% coverage shield shall be applied over the insulated conductors. The shield shall consist of a 0.85 mil minimum thickness aluminum mylar tape. A No. 18 AWG, seven-strand, tinned-copper drain wire shall be furnished in continuous electrical contact with the shield.
- F. Single-pair shielded cables shall be Belden 9316, or equal.

2.03 COAX CABLE (if applicable)

- A. Coaxial Cable (CATV) RG6: Cable shall be listed as being suitable for use in environment defined and shall meet a CMP CMR Nonplenum Rated rating (or better, as defined by the 2003 NEC). Basic construction shall be as follows:
 1. Center conductor: 18 AWG Copper Covered Steel; 0.040-inch o.d. (nominal); foamed polyethylene dielectric.
 2. Inner shield: Aluminum-polypropylene aluminum-laminated tape with overlap bonded to dielectric.
 3. Second shield: 60% 34 AWG bare aluminum braid wire.
 4. Third shield: Nonbonded aluminum foil tape.
 5. Outer shield: 42% 34 AWG bare aluminum braid wire.
 6. Outer Jacket: Flame-retardant PVC.
 7. Impedance: 75 Ohms.
 8. Capacitance: 16.0 pF/ft (nominal).
 9. Velocity of propagation: 84.0%.
 10. Contractor shall install the coaxial cables, including connectors and splitters, as required.
- B. F-Connector (Coax):
 1. Coax cable shall be terminated in a Male F-type connector. The Male F-connector shall be matched to the cable type proposed by CONTRACTOR, be a single-piece connector, incorporate a 1/2-inch crimp ring which uses hex or compression crimp.
 2. When preparing the cable for termination, manufacturer installation procedures shall be adhered to. Special care shall be taken to ensure the proper center conductor length as specified by the manufacturer.
 3. The Male F connectors shall be mated to Female/Female Feed-through Couplings at the equipment as shown on the drawings. These Couplings shall be matched to the Male F-Connector type. Couplings shall be of sufficient length as to allow for the Male F-Connector to fully seat (both sides).

2.04 MULTIMODE FIBER OPTIC CABLE AND CONNECTORS (If Applicable)

- A. Fiber optic cable shall be Indoor/Outdoor listed type OFNR and shall be suitable for use inside building and outside plant applications, including duct and conduit installation in accordance with ICEA S-104-696. Installation in building risers shall be in accordance with NEC 770. Cable shall be DX-###-D-ALT-9-K-R as manufactured by Optical Cable Corporation, ###-T-8F-311-80-29 as manufactured by Corning, or equal. Fiber Optic Cable sizing (fiber count) shall be as shown on the drawings.
- B. Individual fibers shall be multimode 50/125 microns meeting TIA/EIA 492AAAC and ISO/IEC 11801 type OM3 standards for laser-optimized fibers. Primary fiber coating diameter 250 um±15 and the secondary tight buffer-coating diameter shall be 900 microns (nominal). All coatings shall be mechanically strippable without damaging the optical fiber. Optical performance shall meet the following requirements:

Wavelength	850 nm	1300 nm
100 Mb Fast Ethernet	300 m	2000 m
Gigabit Ethernet Distance	1000 m	600 m
10-Gigabit Ethernet Distance	300 m	300 m
Maximum Attenuation	3.0 dB/km	1.0 dB/km
Minimum Laser Bandwidth EMB	2000 MHz-km	500 MHz-km
Minimum LED Bandwidth OFL	1500 MHz-km	500 MHz-km

- C. Cable shall be all dielectric, tight-buffered, dry water-blocking, gel-free, and shall meet UL 1666 and RoHS compliance. The PVC outer sheath shall be flame-retardant and marked with the manufacturer's name, date of manufacture, fiber type, flame rating, and sequential length information. Outer jacket shall be aqua or black if exposed to sunlight.
- D. Fiber shall be subjected to a minimum proof stress of 100 kpsi. The minimum bend radius rating for the cable during installation shall not be more than 20 times the outside diameter of the cable, and during operation no more than 15 times the outside diameter of the cable. Cable shall withstand a minimum installation tensile load of 2700 N (600 lbf) and a minimum continuous tensile load of 600 N (135 lbf) for a 12-strand cable. The cable shall comply with the optical and mechanical performance requirements as specified herein over the operating temperature range of -40°C to +70°C. The cable shall not be damaged in any way when exposed to the operating temperature range of -40°C to +70°C. The cable shall have an installation temperature range of -10°C to +60°C. Optical and mechanical performance shall not be degraded, and the cable shall not be damaged in any way by immersion in groundwater. The cable shall block water penetration without the use of gel-flooding compounds according to EIA-455-82B. The outer jacket material shall be suitable for long-term exposure to UV/sunlight and weather, with a life-expectancy in excess of 20 years.
- E. Fibers shall be terminated with connectors recommended by the cable manufacturer. Connectors shall be provided on all fibers of each fiber optic cable. End connector styles (LC, Duplex SC or ST) shall be coordinated with the fiber termination panels and fiber transmitter/receiver devices. Connector and strain relief color shall be Aqua to identify the fiber as 50-micron laser optimized OM3. The connector ferrule shall be ceramic or glass-in-ceramic, metallic, or equivalent. The optical connector within the connector ferrule shall be secured with an adhesive or mechanical process to prevent pistoning and other movement of the fiber strand. Provide heat-shrink tubing section where cable is broken out to protect jacketing end and minimize overflexing of the subcables. End connectors shall have integral strain relief and shall be designed to minimize losses. Attenuation per mated pair shall not exceed 0.5 dB (individual); 0.3 dB (average). These values shall hold throughout the cabling system. Connectors shall sustain a minimum of 200 mating cycles per EIA/TIA-455-21 without violating these specifications.
- F. Fiber optic patch cables shall be provided premanufactured in sufficient length to connect associated equipment to any port on the patch panel or switch.
- G. All cables shall be installed in continuous lengths from endpoint to endpoint. Splices in fiber optic cables shall be allowed only where specifically identified on drawings or specified herein.

2.05 VOICE AND DATA CABLE (if applicable)

- A. Provide 4-pair Unshielded twisted-pair cabling meeting EIA/TIA Category 6 requirements for HORIZONTAL VOICE AND DATA CABLING (STATION CABLING). Cable shall be rated for spaces as indicated on the drawings. Provide Systimax Solutions 1071E PVC, or equal.
- B. Data and Voice Station Cables: Transmission characteristics of the Data Station Cables shall meet full Category 6 performance criteria as defined by the referenced TIA/EIA documents and this specification. Refer to the Execution Section which details the required performance criteria of the Permanent Link of which the Cable is a part. The jacket color for Data cables shall be BLUE. The jacket color for "Voice" cables shall be WHITE.
- C. Faceplates: Systimax Solutions: "L" Type Flush-Mounted, Ivory, or equal.
- D. Jacks: Systimax Solutions: MGS400-246 (Ivory) for voice, MGS400-112 (Orange) for data.

PART 3-EXECUTION

3.01 INSTALLATION REQUIREMENTS AND SPECIAL CONSIDERATIONS

- A. Shielded pair, coaxial cable, fiber optic, and Cat 6 cabling specified in this section shall be installed in conduit, and may not be run free-air or in nonmetallic tubing such as innerduct.
- B. Although twisted conductors effectively reduce magnetic noise, where additional magnetic shield is necessary to minimize interference from stray magnetic fields, armored cable shall be provided.
- C. Since magnetic interference is produced by currents flowing through conductors and electrical equipment, any instrument wire run near electric motors, generators, transformers, induction heaters, circuit breakers, motor starters, power lines, or AC power and control cables may need additional magnetic shielding.
- D. Armor may be necessary on instrument cables installed in nonmagnetic electrical ducts:
 - 1. Single pair electronic instrument wiring: There shall be a steel wire armor of 24 gauge AISI 1006 soft annealed steel wire covering the inner jacket.
 - 2. The armor shall be covered by a flame-retardant and weather- and ultraviolet-resistant PVC, outer jacket 35 mil minimum thickness and 80°C minimum rating. The outer jacket shall contain a ripcord and shall equal or exceed the physical characteristics of UL 1277. Cable shall be UL labeled as power limited cables.

3.02 GROUNDING

- A. Shielded cabling shall be installed in accordance with manufacturer's instructions and to minimize electrical noise and interference to associated instruments. Refer to instrument manufacturer's instructions for additional requirements.
- B. Ends of signal wires shall be sealed to prevent the migration of moisture into the cable and to prevent unintentional grounding of the shield at the open end. Seal signal wires using a minimum 1-inch piece of heat-shrink tubing installed over PVC jacket and individual wires, and heat-shrink to a watertight fit.
- C. All shields must be grounded.
- D. Shields shall be grounded at one point only. Shielded cabling shall be isolated and left open at the instrument.
- E. Cable shield grounds shall be isolated from control system signal grounds, except at instrument system grounding electrodes.
- F. The instrument ground shall be separate and isolated from the electrical power grounding system.

3.03 FIBER OPTIC CABLE INSTALLATION

- A. Use Velcro bands to secure cable bundles within interior pull boxes and fiber patch panels.
- B. Avoid excessive and sharp bends. Ensure manufacturer's recommended bend radius and pulling tensions are not exceeded.
- C. Fittings or connections are allowed only at the input and output of devices. Splicing shall not be accepted in any cable run. The entire cable run shall be replaced in all such instances.
- D. All cable shall be installed in conduit.
- E. Conduit, raceways, and outlet boxes shall be provided as required.
- F. All station cables installed through and within process areas shall be installed in conduit.

- G. Cable slack shall be provided at end of the fiber optic cable. This slack is exclusive of the length of fiber that is required to accommodate termination requirements and is intended to provide for cable repair and/or equipment relocation. The cable slack shall be stored in a fashion as to protect it from damage and be secured in the termination enclosure or a separate enclosure designated for this purpose. Multiple cables may share a common enclosure. A minimum of 15 feet of slack cable shall be coiled and secured at each end of the fiber optic cable. Exact cable termination locations shall be field verified with OWNER and ENGINEER.

3.04 FIBER OPTIC TESTING

- A. The fibers utilized in the installed cable shall be traceable to the manufacturer. Upon request by OWNER, CONTRACTOR shall provide cable manufacturer's test report for each reel of cable provided. These test reports shall include (1) manufacturers on reel attenuation test results at the specified wavelengths for each optical fiber of each reel prior to shipment from the manufacture and, (2) on-the-reel bandwidth performance as tested at the factory.
- B. Prior to installation, CONTRACTOR shall perform tests deemed necessary by CONTRACTOR to ensure integrity of all optical fiber. Tests may range from a simple "flashlight test" to an OTDR of each optical fiber of each cable reel prior to installation.
- C. Upon completion of cable installation and termination, the fiber optic cabling shall be tested to include:
 - 1. Optical Attenuation ("Insertion Loss" Method).
 - 2. Verification of Link Integrity (OTDR) if the cable has been spliced.
- D. Optical Attenuation shall be measured on all terminated optical fibers in both directions of transmission using the "Insertion Loss" method. Measurement shall be inclusive of the optical connectors and couplings installed at the system endpoints. Access jumpers shall be used at both the transmit and receive ends to ensure that an accurate measurement of connector losses is made. Multimode fibers shall be tested in accordance with the IEC 61280-4-1, utilizing the appropriate cable reference 1, 2, or 3.
- E. Attenuation of optical fibers shall not exceed the values calculated as follows: $\text{Attenuation (max.)} = 2 \cdot C + L \cdot F + S$ dB, where C is the maximum allowable connector loss (in dB), L is the length of the run (in kilometers), and F is the maximum allowable fiber loss (in dB/km). S is the total splice loss (number of splices * max. attenuation per splice).
- F. Fiber runs that contain splices shall be tested for Verification of Link Integrity (OTDR). All fibers, even those that are left unterminated, shall be documented in one direction of transmission using an Optical Time Domain Reflectometer. Multimode fibers shall be tested at 850 nm (nominal). Single mode fibers (if applicable), shall be tested at 1300 (nominal). The OTDR(s) shall incorporate high-resolution optics optimized for viewing of short cable sections. Access jumpers of adequate length to allow viewing of the entire length of the cable, including the connectors at the launch and receive end, shall be used.
- G. OTDR traces revealing a point discontinuity greater than 0.2 dB in a multimode fiber, or 0.1 dB in a single mode fiber (if applicable), at any of the tested wavelengths, or any discontinuity showing a reflection at that point shall be a valid basis for rejection of that fiber by OWNER. The installation of that cable shall be reviewed in an effort to remove any external stress that may be causing the fault. If such efforts do not remove the fault, that cable and the associated terminations shall be replaced at the expense of CONTRACTOR.
- H. Upon completion of the installation, CONTRACTOR shall provide three complete test reports to ENGINEER for review. Documentation shall include the following items:
 - 1. Test results, submitted in hard copy or in electronic form (preferred). Where documentation provided in electronic form requires unique software for viewing test results, CONTRACTOR shall provide one licensed copy of the software along with the above documentation.

2. Insertion loss test data, including a record of test wavelengths, cable type, fiber and cable (or Outlet) I.D., measurement direction, test equipment type, model and serial number, date, reference setup, and crew member name(s).
3. OTDR traces (where applicable), including individual optical fiber “signatures” obtained as specified above. Trace files shall be so named as to identify each individual fiber by location in the cable system and fiber number or color. Where paper copy documentation of OTDR traces are provided, the vertical and horizontal scales shall be set so as to maximize the detail in each backscatter trace. The portion of the trace which depicts the fiber under test shall extend a minimum of 50% of the display area.

END OF SECTION 16-930

SECTION 16-940

CONTROLS AND INSTRUMENTATION

1.0 GENERAL

1.01 SYSTEM DESCRIPTION

- A. The work includes furnishing, delivering, installing all items furnished, and placing in operation the Supervisory Control and Data Acquisition system (SCADA) for the new supervisory control panels at various master metering stations and storage tank vault in the City of Mortons Gap water system; all in accordance with the Contract Specifications and Drawings.
- B. System Supplier shall be defined as the fabricator, assembler, and supplier of all system components. This shall include, but not be limited to, all instrumentation as specified, all PLCs and required interface hardware and internal wiring, the SCADA system hardware, system drawings, system software, etc. See paragraph 1.08 for other System Supplier requirements.
- C. CONTRACTOR shall inspect all work. The Bid shall include everything necessary to obtain a complete installation operating in accordance with these specifications and the Bidder's proposal, whether necessary items and equipment are contained in, or are remote from the enclosures furnished under this Contract. All responsibility for this system ultimately lies with CONTRACTOR.
- D. CONTRACTOR shall be responsible for the placing of circuits and making of electrical and hydraulic connections in accordance with System Supplier-furnished drawings, instructions, and field supervision to ensure proper connection. CONTRACTOR shall include the services of a System Supplier factory engineer to supervise making of connections to power supplies, motor leads, communication circuits, existing control equipment, and any other connections external to the new control equipment; adjust the equipment; initiate and check operation; instruct OWNER's electrician on operation and maintenance of the equipment; and place the equipment in operation in a manner fully satisfactory to ENGINEER. This will include on-site review of software/hardware controls from the central control point.
- E. Any auxiliary interface relays and controls needed for completion of this project, if not specifically called for, shall be by System Supplier. All switches and control and indicating lights associated with the control panels shall be new and installed in the panels. All new telemetry equipment and controls shall be installed in new System Supplier supervisory control panels at locations where space allows for the new equipment at the remote sites and at the Mortons Gap City Hall.

1.02 QUALIFICATIONS OF SCADA SUPPLIER

The work described in this section shall be performed by an experienced Contractor that has regularly engaged in the design and manufacture of SCADA systems of the size and complexity specified herein, and whose systems have been in satisfactory use in similar service for not less than 10 years

Acceptable pre-qualified manufactures for the type of SCADA work described by this specification are as follows:

- HTI, Inc. (270.274.4632)
- Primex (763.559.0568)

Other manufactures may be pre-qualified by meeting the requirements listed in the Instructions to Bidders – Article 3. Other potential manufactures shall submit evidence supporting their request for pre-qualification at least ten days prior to bid date. Other prospective bidders found to be pre-qualified will be added to the list of acceptable contractors by addendum. Other interested suppliers, at a minimum, must submit with their qualification request a listing of the ten most recent SCADA projects completed by the Bidder. The listing shall include a general description of the SCADA system, name address and telephone number of the Owner, name of the electrician utilized, and the completion date. The perspective supplier shall also

provide similar information for all uncompleted SCADA projects under contract. The Owner reserves the right to contact owners and to use the reference and workload information as a consideration in award of the contract.

1.03 QUALITY ASSURANCE

- A. System Suppliers: Firms regularly engaged in the design and manufacture of SCADA systems of the size and complexity specified herein, and whose systems have been in satisfactory use in similar service for not less than 10 years.
- B. Installer: A firm with at least 10 years of successful installation experience on projects with SCADA system design and installation work similar to that required for the project.
- C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.
- D. UL Labels: Provide control panels, power supplies, controllers, relays, wire, and connectors that have been listed and labeled by Underwriters Laboratories.
- E. NECA Standards: Comply with applicable portions of National Electrical Contractor's Association's Standard of Installation.

1.04 SUBMITTALS

- A. Manufacturer's Data: Submit manufacturer's data, specifications, and installation recommendations for each item specified herein.
- B. Submit shop drawings and product data in accordance with provisions of Section 01-200-Submittals.
- C. Provide product data on all equipment and devices specified herein as well as wiring schematics for all systems.
- D. Shop drawing submittals shall include the following information shall be provided in booklet form:
 - 1. Detailed catalog information, descriptive literature, and specifications of hardware. **All items being provided must be specifically noted on this literature.**
 - 2. All field devices and instruments.
 - 3. Project implementation plan, including information on project organization, project management, engineering, programming, configuration, training, start-up, and maintenance services. Plan shall include key personnel on project, point of contact, and communication protocol.
 - 4. Update to existing overall network schematic showing all new controllers, radio, and hardware addresses applicable to the system.
 - 5. Wiring diagrams for all SCCs , including modification drawings for existing equipment. **Existing SCC wiring diagrams shall be electronically redrawn and shall include modifications new and existing equipment as specified herein.**
 - 6. PLC I/O Listing.
 - 7. Database with PLC addresses.
 - 8. Software.
 - 9. PLC programs and software.
 - 10. Control narratives.

1.05 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provision of Section 01-200-Submittals.
- B. Include spare parts data listing, source and current prices of replacement parts and supplies, and recommended maintenance procedures and intervals.

- C. Submit Operation and Maintenance Manuals in accordance with Division 1. The following additional information shall apply:
 - 1. Manuals shall contain, but not be limited to, the following:
 - a. System Hardware.
 - b. System Software.
 - 2. Hardware section shall include:
 - a. Safety precautions, physical description, functional description, operating procedures, theory of operation, maintenance instructions, checkout procedures, troubleshooting procedures, servicing, and removal and replacement procedures.
 - b. Wiring schematic and logic diagrams, parts list, and point-to-point wiring.
 - c. Listing of all hardware timers installed in SCCs, as well as the ranges set on each timer. Listing shall also include actual timer setting after completion of start-up.
 - 3. Software section shall include program documentation (i.e., PLCs, radios, OITs), which shall include programs, documentation files, database and configuration as installed. Provide two copies of backup disks of this information. Passwords for all programmable devices (i.e., PLCs, radios, OITs) shall be turned over to OWNER at the time of final completion.

1.06 DELIVERY, STORAGE, AND HOLDING

- A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.
- B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to SCC components, enclosure, and finish.

1.07 CONTRACTOR AND SYSTEM SUPPLIER GENERAL REQUIREMENTS

- A. Components, peripherals, interconnections, cabling, power supplies, software, and services necessary to form a complete, integrated system shall be identified and provided by CONTRACTOR. CONTRACTOR shall be responsible for reviewing the wiring diagrams and control sequences for equipment provided under other divisions of these specifications and coordinating all interface requirements. CONTRACTOR shall submit to ENGINEER, in writing, any deficiencies noted during this review. Any changes required by CONTRACTOR because of failure to complete this review shall be the responsibility of CONTRACTOR, at no increase in cost to OWNER.
- B. CONTRACTOR shall be responsible for complete coordination in providing all equipment, sensors, and meters supplied with input and output signals, and contacts that are compatible with the systems as specified herein. CONTRACTOR shall also be responsible for complete coordination with manufacturers of other systems specified in other divisions of these specifications with which an interface is required. The Contract drawings and I/O Listing are symbolic representatives of the required work. It is not intended that the drawings show all appurtenances. CONTRACTOR shall provide a complete and working system according to the true intent and meaning of the drawings, specifications, and standard industry practices.
- C. To ensure a complete and totally integrated system, a single manufacturer who has experience in furnishing similar networked PLC-based monitoring and control systems of the same complexity and size for municipal water distribution facilities shall provide specified equipment and services. The system proposed to meet this specification shall be of field-proven design, incorporating manufacturer's standard equipment and software. Service of all peripheral devices shall be provided by the manufacturer of the process monitoring and control system.
- D. Design and specification of devices and completed system shall conform to applicable portions of the latest edition of National Electrical Code (NEC).
- E. Control panels shall bear a serialized UL label indicating that it is UL approved as an assembled unit. Panels that have individual components that are UL labeled, but do not have UL approval as an assembled unit are not acceptable.
- F. Training Program:

1. Submit training plan including course syllabus, personnel who will be conducting the training, and schedule.
 2. Provide materials, instructors, and workbooks to complete the training.
 3. Training courses shall include: Operator training. Course length minimum 4 hours. Training shall utilize equipment specified herein following installation and field testing.
 4. Manufacturer's training shall be directed to system and equipment operation, maintenance, troubleshooting, and equipment and system-related areas other than the process itself.
- G. System Supplier shall meet the following minimum requirements:
1. System Supplier shall have a full-time staff of qualified programmers who are knowledgeable in the configuration of networked computer systems and the PLCs being provided.
 2. System Supplier shall have training capabilities and shall have conducted training courses in programming and maintenance.
 3. System Supplier shall have an adequate inventory of spare parts.
 4. System Supplier shall have a full-time staff of qualified service technicians.
 5. System Supplier shall be responsible for the programming and documentation of the system.
 6. System Supplier shall be responsible for all details that may be necessary to properly install, wire, adjust, and place in operation a complete and working system.
 7. System Supplier shall be responsible for all coordination between the system and the field devices, instrumentation equipment, and equipment furnished with other divisions of this specification. This shall include interface with existing equipment.
- H. All components are to be standard make acceptable to OWNER, with one manufacturer to provide all similar components. The Base Bid Supervisory System Supplier shall be as selected from those listed on the Bid Form (Paragraph 5.02).

1.08 SYSTEM START-UP AND SUPPORT SERVICES

- A. Allow ENGINEER and OWNER to observe vendor's staging records or other quality assurance records relating to system(s) supplied.
- B. After being notified by CONTRACTOR that the equipment has been installed and is in full operating condition and ready for test, ENGINEER will make a one-day trip to check operation.
- C. Final acceptance and payment will not be made until the system has operated satisfactorily for a minimum of 30 consecutive days. CONTRACTOR shall include in Bid field follow-up to ensure proper adjustments and operation during the first year following project final completion. Prior to beginning the 30-day test, the following criteria shall be met:
1. Satisfactory operation of I/O control loops.
 2. Satisfactory operation of software.
 3. Satisfactory operation of control program.
 4. Satisfactory operation of peripheral equipment.
 5. The necessary debugging programs have been performed.
 6. Data output is reliable.
 7. Control loops are operational.
 8. Checking and calibrating of systems have been completed.
 9. Reports are operational and give correct data.
- D. CONTRACTOR, through System Supplier, shall provide the following support services:
1. Field Service Engineer: Field service engineer shall be responsible for programming of system PLCs at the site. Field service engineer shall be present for start-up of all systems and available throughout the entire construction process until final completion. Service technicians sent for system start-up will not be acceptable. Support shall include on-site time. Services shall include, but not be limited to:
 - a. Commissioning, installation, start-up, and testing of equipment.
 - b. Revising or rewriting manuals to incorporate an installed and accepted system.
 - c. On-site training.
 - d. Software modifications.

2. In-factory support shall include consultation following the acceptance testing and shipment. Services shall include, but not be limited to:
 - a. Researching and answering questions related to the system operation, documentation, and system use and functions.
 - b. Program modifications.
 - c. Revising or rewriting manuals.
3. Post-start-up support shall include follow-up services during the 1-year period following final acceptance. Service shall include follow-up recalibration and replacement of defective equipment, as well as additional training, software modifications, and control configurations as requested by OWNER. This shall include 8 hours for work on-site other than warranty repair or replacement of defective equipment. This time shall be used for software enhancements and modifications to improve the operation of the system. It shall be assumed that this 8 hours includes two trips to the site.

1.09 EQUIPMENT ENCLOSURES

- A. New enclosures shall be front access only, minimum No. 12 gauge steel, and continuous-hinged doors, rotating lockable handle with latch on each supervisory equipment compartment door (not screws or bolts), with top and bottom bolts actuated by one rotating handle on large doors. Provide door stop kit for all panel doors, and data pockets for wiring diagrams. Painting shall include phosphate treatment, zinc chromate iron oxide primer, baked rust-inhibiting enamel, White interior, and OWNER-selected exterior color. All doors and panels shall be gasketed. New enclosures shall be manufactured by Hoffman, Lehman, EXM Manufacturing, or Saginaw
- B. Indication gauges shall be at eye level, minimum 48 inches, maximum 60 inches, from floor to bottom of gauge.
- C. Plastic wiring troughs shall have removable covers. **Maximum fill for wiring troughs shall be 60%.** All wiring in supervisory enclosures and control panels not in wiring troughs shall be bound with continuous-type spiral windings. Terminal strips located adjacent to wiring troughs, relays, fuses, PLCs, etc., shall have a minimum of 1 1/2 inches between terminal strip and wiring trough.
- D. Tubing and instruments containing water shall be in separate compartments located and constructed so that leakage or spray at 100 psi pressure cannot touch electrical conductors or devices. Leakage shall be conducted to the floor in duct or pipe.
- E. All wiring for new panels shall be done in the factory, Class II, Type C with master terminal strips for exterior connections. Terminal strips shall be located either at the bottom or on the side of the enclosure, depending on where the I/O conduits penetrate the enclosure. Splices are not allowed within enclosures or wireways. All enclosures must pass through doors to point of installation, and if enclosures are shipped in sections, all wiring and connections between sections shall be done by CONTRACTOR. All wiring shall be labeled at each end with corresponding numbers. This numbering shall be shown on the shop and record drawings.
- F. All door-mounted devices shall be furnished flush-mounted, and an exterior-engraved phenolic nameplate worded by OWNER (upon receipt of shop drawings) shall be provided for each compartment, device, and light. All components within the enclosures shall be identified with interior-mounted engraved labels. Labels shall be installed on the enclosure back panel and not on the device or wireway. Devices shall be grouped for each device or unit being controlled.
- G. All panels with DIN rail-mounted equipment shall include a minimum of 25% spare DIN rail space.
- H. In addition to spare I/O specified herein, provide a minimum of 25% spare hot and neutral terminals wired to terminal strips. Spares shall be provided for all voltage sources within the panel (e.g., 120 V, 24 V).

1.10 COMMON REQUIREMENTS ALL EQUIPMENT

- A. All indicating and recording devices shall be electric or electronic.

- B. All motor control power shall be 120 volts with suitable circuit protection (fuses or breakers). Fuse holders shall be provided with integral LEDs to indicate when the fuse is blown.
- C. Devices powered at 120 volts from supervisory control panels shall be fused. This shall include, but not be limited to, motor-operated valves, flowmeters, and transducers.
- D. Provide lightning protection, isolation transformers, and fused disconnects at each end of each power circuit, supervisory circuit, and local supervisory circuit with transformers and relays, if necessary, to obtain supervisory power. 120-volt power shall be available at all control points. Lightning protection shall be completely solid-state and self-healing and shall not require the use of fuses. Provide a single switch with an indicating light to deenergize the control power for each location. Each panel shall have a GFI, duplex, 20 ampere, 120-volt receptacle.
- E. If enclosure and panel space is needed for future installation of devices and lights, the enclosure and panel shall be constructed for such installation. Supports shall be provided for future equipment, and panel openings shall be made and covered with neat cover plates matching the panel.
- F. Where equipment is necessary to perform a function as called for in one part of this specification, it shall be provided, even though the detailed enumeration at various control points may omit listing that equipment.
- G. Where a certain accuracy of sensing and transmitting levels or flows and controlling operations are called for, means must be provided to read or determine that the levels or flows are within the limits or accuracy specified of the sensing, transmitting, and controlling devices. Where no accuracy is specified, but a knowledge of levels is necessary to set operating points, an indicating device of accuracy consistent with the operation of the system is required.
- H. All control and auxiliary relays shall have indicating LEDs. All timing relays shall have On and timing Out LEDs.
- I. A condensation heater shall be provided in all control panels located outdoors. Condensation heater shall be as manufactured by Hoffman Model DAHX001, or equal, sized based on control panel and exterior temperature.

2.0 MISCELLANEOUS PRODUCTS

2.01 PRESSURE SWITCHES

- A. Pressure switches where called for shall be Square D, Type GAW for pressures as applicable.

2.02 PRESSURE TRANSDUCERS

- A. Pressure transducers shall sense gauge pressure and provide a 4-20 mAdc signal proportional to the sensed pressure. Transducers shall meet requirements as specified in respective contract drawings.

2.03 PROGRAMMABLE CONTROLLER

Listed hardware and/or software is to establish basic major components only. Any required related ancillary devices shall be provided by the integrator at no additional cost to the owner.

- A. Water Office SCADA Master Terminal Unit (MTU):
 Manufacture : Allen-Bradley or approved equal

CompactLogix 5380 or Micro850 series Programmable Logic Controller System. To include chassis power supplies and I/O modules as required. To include communications cables ancillary devices as required

B. SCADA Remote Terminal Unit (RTU):

Manufacture : Allen-Bradley or pre-approved equal
Micro850 or higher Programmable Logic Controller Systems
To include chassis power supplies and I/O modules as required
To include communications cables ancillary devices as required

C. PLC Spare Inputs / Outputs

Provide 25 percent spare capacity (minimum) on all inputs and outputs. Provide extra terminal blocks and extra I/O modules as required to meet this minimum requirement. All PLC I/O shall be wired to field terminal.

D. MTU/RTU Remote Radio Communications

- i. The MTU shall communicate using radio/modem communications and shall continuously poll the remote RTU sites in sequential order based on programmable time intervals. The system shall update all system remote site data points at intervals of no less than 120 seconds under normal conditions.
- ii. Each RTU site shall the ability to be individually removed from the poll sequence via the SCADA HMI. The SCADA HMI shall graphically indicate each RTU Enabled/Disable Status.
- iii. The SCADA HMI shall also indicate:
 - a. Each remote sites current radio communications health status: (Normal/Failed)
 - b. Total number of communications attempts to each remote site
 - c. Number of successful communications attempts to each remote site
 - d. Percentage of successful communications attempts to each remote site
 - e. Radio communications counters shall be able to be reset by the Operator via the HMI

2.04 SCADA HMI SOFTWARE

HMI software shall be FactoryTalk View platform by Rockwell Automation. All software shall be of the latest version. All new software shall be provided with factory Media (CD or USB) and be provided to the owner at jobs end. All software shall be registered to the owner and become the property of the owner at jobs end. All HMI, OIT or other project files shall be provided to the owner at jobs end. All programs shall include complete documentation with no passwords or lockouts.

Provided software shall be installed on associated provided computers, fully functional and available to the plant IP network. All provided HMI and related software shall include a one-year support option. This support option shall allow no cost version updates and web based factory support for the duration of the support. All software support shall be available for continuation by the owner as an option. The support contract time line shall start at the point of substantial completion of related SCADA PC hardware and software upgrades.

HMI Software runtime shall include a minimum 25 display license.

2.05 SCADA HMI SOFTWARE DEVELOPMENT

A. Application Screens

HMI graphics shall be representative of the OWNERS system. All locations and devices shall be clearly identified. Application screens shall be developed to graphically represent all applicable distribution site equipment data status points for comprehensive display and use by the OWNER. A system overview screen will be provided that will graphically depict the overall system. Using the mouse to select a particular section will display the associated detailed screen(s) for the select equipment, e.g. tank levels, pumps stations, valve stations, master meter stations, etc. A screen will be provided for each remote site to graphically depict the operation. Equipment status will be indicated by color changes to the representative equipment graphic. Pumps, Blowers, valves, etc., will be displayed as green when de-energized or closed, red when energized or opened and flashing yellow when faulted. A trend screen will be provided for each remote site to graphically depict the real-time and historical values. Like trend points may be combined to show common pressure zones, flow rates or similar for ease of use. Trends are to be scaled for appropriate engineering unit values for ease of viewing and allow zooming in and out for details. Trends shall default to 24 hours x-axis and allow forward and reverse movement for viewing of historical data. Historical trend data shall be logged for viewing a 5-minute intervals and stored for up to 36 months on the local workstation.

- Analog Data Trends: e.g. : tank levels, system pressures, flow rates
- Discrete Data Trends: e.g. : pump run events, valve open close events

B. Alarming

The SCADA workstation HMI software shall be developed to indicate alarm status of applicable data points. New alarms shall flash on the HMI alarm banner when active. Upon alarm acknowledgment by the user, the alarm shall stop flashing and change colors to indicate if it is still active. All alarms shall be time and date stamped to indicate the time of the alarm event and time the alarm event was cleared. An alarm history shall be logged to allow viewing previous alarms.

- Alarms shall include but not limited to the following as applicable: Tank level High/Low, Pump Fault, Valve position fail, Pressure High/Low, Station High Flow, RTU intrusion, Loss of radio communications.
- Critical alarms as designated by the OWNER shall be assigned to the remote alarming unit for off-site alarming notification.

C. Reporting

The SCADA workstation HMI software shall log data to a database for use to develop and display tabular based reports for use by the plant operator. The report data shall be logged at intervals of no less than 60 minutes and be permanently stored on the local workstation. Data shall be logged and stored for a minimum of 36 months. The reports shall be configured to allow daily and monthly reports selectable by the plant operator. The reports shall be based on use of Microsoft Excel and generated via Sytech XLReporter. The reports shall be published to Adobe PDF on demand and stored to the local workstation.

Reported data shall be as noted:

- Master Meter Hourly Flow Total (all measured points)
- Master Meter Daily Flow Total (all measured points)

- Master Meter Monthly Flow Total (all measured points)
- Major Equipment Dailey Run Time Hours (all measured points)
- Five (5) Additional similar custom reports shall be available upon request by the owner at no additional fee.

2.06 SCADA COMPUTER HARDWARE

- A. Dell Precision Tower 3000 Series Business Class Workstation Computer with 5 year “Pro-support” next business day manufacture warranty and accidental damage service coverage
- B. 6th Gen Intel® Core™ i7 Processor
- C. Windows version 10 Pro operating system
- D. Microsoft Office for small business
- E. 32 GB RAM
- F. Dual 1TB Hard Drive
- G. 16X DVD+/-RW
- H. Enhanced Keyboard
- I. Laser Mouse
- J. Dell 24” Professional monitor (1 Each per computer)
- K. 1500 VA UPS with Automatic Voltage Regulation (1 Each per computer)
- L. 4 TB External hard drive with automatic backup software (Installed and configured) Western Digital My Book or approved equal
- M. Norton’s Internet Security

2.07 SCADA COMPUTER PRINTER:

Epson WorkForce Model WF-C5790 All-in-One Printer, or approved equal, with standard ink cartridges. To include 1 Each spare ink cartridge of each type used.

2.08 NETWORKING EQUIPMENT

The Systems Integrator shall provide networking equipment for supplied control panels and SCADA HMI equipment for a working office IP control network. (ie: Network switches, media converters routers, power supplies and interface/patch panels)

2.09 OPERATOR INTERFACE TERMINAL (OIT)

Manufacture: Allen-Bradley Panelview 800 Series or approved equal. The OIT shall be completely configured and developed in a neat and Operator friendly manor to display all relative site data. Screens shall be graphically representative of each displayed equipment type.

2.10 RADIO COMMUNICATIONS

Wireless communications shall be accomplished using licensed VHF radio/modems. The integrator shall supply proper FCC licensing for the owner all sites and cover all associated fees. The license shall be effective for 10 years from the date of frequency assignment approval by the FCC. A one-year FCC construction notice fee and filing for all sites shall be included.

The supplier shall provide a computer-generated radio path study to determine recommend antenna heights and RF routing. The RF path study results must be provided with bid. Radio path study results shall indicate requirements for communications towers where required, and show projected RF paths with repeaters. Communications towers shall be provided as recommend by the control system integrator and installed by the contractor. If a specific tower height is not noted, a tower with a minimum height of 20 ft shall be

provided. The tower is to be provided by the Systems Integrator and installed by the CONTRACTOR. If the radio path study results indicate the need for additional height at this location, the SCADA supplier shall include this in the bid to the contractor. The supplier shall be responsible for informing the contractor of proper locations and installation techniques of towers. Where applicable, the antenna may be mounted on a mast that is integral to the RTU mounting structure at a height of no less than 10 feet. All fade margin goals must be achieved regardless of antenna mounting type and height.

Antennas are to be located at appropriate heights as noted in the computer path study for a target fade margin of 25 dB or better at a RX threshold of -110 dB. An average foliage height of 80 ft shall be used in the RF path calculations.

- A. Radio/Modem:
CalAmp Viper or ESTeem 195M series or pre-approved equal
- B. Antenna:
Omni Directional: Celwave, Sinclair Technologies, Astron or approved equal
Yagi: Celwave, Astron or approved equal
Antenna system gain and type shall be as determined by path study and FCC requirements
- C. Coaxial Cable and accessories:
- Coax Feedline: Times Microwave: LMR-400DB
 - Coax end connectors: Times Microwave with EZ type "N" gold-plated pin with silver plate body
 - Coax cable shall be secured at proper intervals to towers, mast, tank ladders or the like using Stainless Steel Mounting Clamps, Heavy Duty Nylon Outdoor Tie Straps or other means designed for securing coaxial cable. At all points where the straps or clamps contact the coax cable, a protective rubber cover shall be installed to prevent damage to the coax if required to prevent damage.
 - Where securing coax to tank ladders, only ladder stand-off support shall be used. No coax shall be secured in a manner that may interfere with safety standards. Confirm installation methods with the owner and engineer prior to installation.
 - Outdoor Nylon Tie Straps shall be Dymetec A—Acetal 1/2"(Delrin) wide by .050" thick. Operating Temp. -40-185 Deg F, UL Rating UL94HB, 400 Lb loop break strength

2.11 COMMUNICATIONS TOWERS

Towers to be free standing "tilt up" type and constructed of high quality aluminum. Properly sized base section shall be provided with tower. Tower to be sized by integrator for adequate regional wind loading for antenna type used. Tower heights to be determined by integrators pre-bid radio path study. Towers to be as manufactured by Universal Tower Inc.

Any required Local, State or Federal permitting and fees shall be administrated by the owner.

2.12 PRESSURE SENSORS

A. Tank Level Measurement

Non-submerged locations: .25 % accuracy, 4-20 mA, Loop Powered 12-32 VDC, Stainless Steel or Aluminum NEMA 4X Housing. Manufacture: ABB, Siemens, Ashcroft, Keller-America, or approved equal.

Submerged/Wet location: Submersible rating, Sealed sensor, .25 % accuracy, 4-20 mA, 9-30 VDC, Stainless Steel, Manufacture: Pressure Systems Inc., Keller-America or approved equal

Pump Station inlet/outlet pressure: .5 % accuracy, 4-20 MA, 9-30 VDC, Stainless Steel NEMA 4X. Manufacture: Pressure Systems Inc., Keller-America or approved equal

2.13 RTU ENCLOSURES

- A. Outdoor or corrosive environment exposure:
- NEMA 4, Stainless Steel, Factory Painted White,
 - Pad lockable handle required for outdoor units
 - Continuous or 3-point hinge door with removable hinge pins
 - Quarter-turn door latch
 - Manufacture: Hoffman Concept SS, EXM or approved equal
- B. Indoor non-corrosive environment exposure:
- NEMA 12, Factory Painted Steel
 - Continuous or 3-point hinge door with removable hinge pins
 - Quarter-turn door latch
 - Manufacture: Hoffman Concept, EXM or approved equal
- C. When applicable, the enclosures shall be supplied with adequate heating capacity for condensation protection and component temperature rating exposure. A thermostat shall be included for desired temperature control. Outdoor enclosures shall include ventilation if required to accommodate component temperature specification limits. Enclosures mounted outdoors shall include an interior swing panel for mounting of push buttons, switches, displays, etc. No buttons, displays, switches, etc., shall be exposed directly to outdoor weather conditions. Heaters shall be specifically designed for use in industrial control panels.
- D. UL Listing:
- Control panels shall be assembled by a company engaged in full time Water and Wastewater SCADA Systems Integration and production of assembled controls panels. The control panels are to be designed and built by the system supplier. Control panels shall be UL 508A listed for industrial control panels.

2.14 SURGE PROTECTION

- A. Each control panel shall include equipment level surge protection for incoming 120VAC power.
- DIN Rail Mount
 - Nominal discharge current: 20 kA
 - Maximum discharge current: 40 kA
 - UL 1449 4th Edition
 - Replaceable Surge Module
 - Fault Indicator
 - Operating Temperature Range -40°C to 60°C
 - Storage Temperature Range -40°C to 90°C
 - Relative Humidity 0 to 95% non-condensing
 - Manufacture: MGC, Citel DS42S-120 or approved equal

- B. Analog points connected to devices outside of the RTU control panel shall be surge protected in the panel at the field termination point.
- DIN Rail Mount
 - Nominal Operating Voltage 24VDC
 - Maximum discharge current: 20kA
 - UL 497B Edition
 - Replaceable Surge Module
 - Operating Temperature Range -10°C to 60°C
 - Manufacture: MGC, Citel DLA-24D3, Phoenix Contact PlugTrab or approved equal
- C. Analog devices located outside of the control panel shall be surge protected at the equipment Level. Devices with factory integrated surge protection may be used in lieu of separate external surge devices.
- Conduit Mount
 - Nominal Operating Voltage 24VDC
 - Maximum discharge current: 15kA
 - Operating Temperature Range -10°C to 60°C
 - Manufacture: Citel TSP15M, Pepperl + Fuchs or approved equal
- D. RTU Coax Surge Protection:
- Bulkhead mount, NF-NF end connectors
 - Manufacture: Polyphaser, Citel or approved equal

2.15 POWER SUPPLIES

- A. 12 VDC:
- 7 Amp minimum continuous output rating @ 12 VDC
 - Adjustable output 12-15 VDC
 - DIN rail mountable
 - Manufacture: Allen-Bradley, Sola, Mean-Well or approved equal
- B. 24 VDC:
- 4 Amp minimum continuous output rating @ 24 VDC
 - Adjustable output 24-30 VDC
 - DIN rail mountable
 - Manufacture: Allen-Bradley, Sola, Mean-Well or approved equal

2.16 UNINTERRUPTIBLE POWER SUPPLY

120VAC powered RTUs shall include and AC or DC UPS system sized to provide 60 minutes of backup runtime. Where the backup power is 120VAC, the RTU UPS shall include automatic voltage regulation (APC, Cyberpower or approved equal).

Where the backup power is 12 or 24VDC, the RTU shall include one or more battery packs with a regulated UPS controller with automatic switchover on loss of power (Sola, Allen-Bradley, Mean Well or approved equal).

2.17 CIRCUIT BREAKER

The RTU shall be fitted with one or more UL listed DIN rail mounted circuit breakers. The circuit breaker shall disconnect the RTU panel from all outside AC voltage sources. Manufactured by Allen-Bradley, Eaton or approved equal.

2.18 RTU PANEL WIRING

RTU panel wiring shall conform to high quality assembly standards. All components shall be UL listed where available. Panel wiring shall conform to standard color coding practices for easy identification. Color coding scheme shall be clearly stated on system drawings. All internal back plate wiring shall be laid in slotted wiring duct with matching cover. Duct shall be neatly installed in vertical and horizontal runs. Duct installed at angles other than vertical or horizontal shall not be accepted. Exposed wiring shall only be acceptable where wiring transitions to the intended device or termination point. All exposed wiring crossing door panels or similar transitions shall be wrapped in plastic wire wrap or flexible duct.

Proper grounding practice for personnel and equipment protection shall apply. All field wiring shall terminate at DIN rail mounted terminal strips. Direct field termination to RTU devices shall not be allowed. Terminal strips shall be feed through type rated @ 600 V/ 20 Amp. All terminals and wiring shall be clearly marked using machine printed permanent marking labels. Hand written wire marker or panel ID labels are not acceptable. Wires shall be clearly identified at termination points and clearly identified on system drawings.

Individually fused components shall be required for the following:

- PLC AC supply power
- DC power supplies AC supplied power and DC power output
- Radio/Modem Power supply DC output
- DC Loop power to analog devices (Each individual 4-20mA Loop)
- DC Voltage UPS and Battery supply

2.19 TURBO FLOW METER

Turbine master meters are to be Sensus "Omni Turbo Series" or approved equal. Turbo meter to be equipped with a built-in strainer and test port. The meter shall include a submersible rated direct mount digital display with encoder output for SCADA use.

2.20 MAGNETIC FLOW METERS

- A. The magnetic flow meters shall be suitable for measuring water flows in the range indicated in the table below. The magnetic flow meters shall consist of a flanged sensor with grounding rings and remote electronics. The tube shall be of 304 stainless steel with NSF certified hard rubber liner. Flanges shall be carbon steel and conform to ANSI B16.1, Class 150. The sensor shall have an IP68 rating.
- B. Where meter bypass piping is not provided for in-line flow meters, provide one spool piece for each size meter to allow for removal and repair of the meter.

- C. The meters shall utilize bipolar DC coil excitation or other means to automatically rezero. Meters shall be provided with grounding rings made of material compatible with electrode material. Electrodes shall be bullet nose, 316 stainless steel suitable for drinking water.
- D. Power consumption shall not exceed 20 watts. The meter shall incorporate design features to minimize the effect of greasy (nonconductive) coatings or incorporate a means to automatically clean the electrodes during continuous operation. Meter accuracy shall not be affected by greasy coatings, and cleaning of the meter manually shall not be required.
- E. Meter accuracy shall be $\pm 0.5\%$ of rate from 1.0 to 30.0 ft/sec and 0.1% of scale below 1.0 ft/sec when installed with the appropriate upstream and downstream pipe diameters. The meters shall be wet-calibrated in a primary flow laboratory traceable to the National Bureau of Standards. Transmitters and flow tubes shall be interchangeable.
- F. The meter electronics (transmitter) shall be designed to operate on 120 Vac, 60 Hz. Connections at the flanged sensor shall be factory-potted to assure IP68 as installed ratings. Outputs shall be 4-20 mA into 800 ohms maximum and 24 Vdc scaled pulse, 0 to 2 Hz maximum, 150 ohms minimum, suitable for driving a solid-state counter. Pulse width and volume of flow per pulse shall be widely adjustable before or after installation to allow interface with PLC input cards and other devices. Meter electronics shall be installed in the SCC enclosure as indicated herein.
- G. Outputs shall be field-adjustable for range changes. Response time or damping shall be adjustable from 0.8 to 8.0 seconds. The meters shall be operable in all liquids with 5.0 umhos/cm or more conductivity.
- H. The meters shall include empty pipe detection and shall be rated for accidental submergence. Meters shall be capable of reading forward and reverse flow with analog/digital outputs and totalizers.
- I. The magnetic flow meters shall be ABB WaterMaster or approved equal. Meters shall be sized to match the nominal pipe diameter in which they are installed. Provide cable, length as required, to reach the remote-mounted signal converter in the SCC enclosure; CONTRACTOR shall coordinate.

3.0 FINAL DOCUMENTATION

Upon system completion, (4) copies of project documentation shall be supplied to the engineer for assembly of Owner's project documentation. Documents that have not changed from the submittal process will not require resubmittal. Field corrected or hand-written changes to documentation will not be acceptable for final documentation.

Documents to be included are:

- RTU panel drawings (Detailed wiring diagrams with termination points, panel component layout and identification)
- HMI and OIT screen shots
- Project instrumentation calibration and configuration data sheets
- Radio signal strength and data quality report.
- User manuals for all major equipment
- Detailed radio system network layout
- To include: antenna azimuth, as built signal strengths, repeater routing paths.

4.0 DEMONSTRATION & START-UP

Inspect each System for conformity and compliance of materials, equipment and construction. Inspect each installation for conformity with manufacturer's recommendations. Correct any discrepancies or improper conditions.

Loops: Check each loop from the end element to the respective control display. Include instruments, control devices, panels, termination cabinets, input/output cards and other devices in the loop to ensure proper operation.

Energize and verify correct operation of all components of each System. This operation includes verification of accuracy of all interconnecting wiring. Place System into operation including all System software, logic, and displays. Adjust all control loop components and parameters to provide stable control of System process. Check validity of all System alarm displays. Schedule inspection with Owner to approve and verify satisfactory compliance with this section.

5.0 SPARE PARTS

Provide the following listed spare parts:

- (1 Ea.) DC power supply each type used
- (1 Ea.) DC-DC converter each type used
- (1 Ea.) UPS controller each type used
- (5) Each Fuse-each type used
- (5) Each Relay type used
- (1 Ea.) Pressure transducer each type used
- (1 Ea.) Surge protector each type used

6.0 EXECUTION

- A. Remote telemetry panels shall be factory wired, assembled, and tested with all transformers, logic circuits, terminal strips, and circuitry to provide control logic specified herein. All indicating lights, electronic indicators, etc. shall be installed on an inner front door for NEMA 4X panels.
- B. UPSs installed in all SCCs shall be provided as specified herein with a relay I/O module that provides a dry contact output to the PLC in the event that the UPS batteries need replacement. Indication of "Replace UPS Battery" shall be provided at the SCADA system.
- C. See project plans sheets for specific summary of work by site location.

END OF SECTION 16-940

SECTION 16-941

CONTROLS AND INSTRUMENTATION DRAWINGS

PART 1-GENERAL

1.01 SUMMARY

- A. Work Included: Applicable provisions of Division 1 shall govern work in this section.

1.02 SUBMITTALS

- A. Submit drawings in accordance with provisions of Section 01200-Submittals.

1.03 COORDINATION

- A. The requirements set forth in this section are intended to apply to the drawings provided as specified in Section 16940-Controls and Instrumentation.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

3.01 GENERAL REQUIREMENTS

- A. All drawings shall have the following information:
 - 1. Project information, including name of OWNER and specific project name.
 - 2. Drawing title, accurately representing what is on the drawing.
 - 3. Unique drawing identifier, consisting of a unique drawing number or drawing number with individual sheet number. If sheet numbers are used, total number of sheets must be identified on each sheet.
 - 4. System Supplier company name, address, and phone number.
 - 5. Original design information, including person responsible for design, date of original design, person responsible for checking of design, and date of design check.
 - 6. Revision block indicating revision number, date, description of revision, and person responsible for revision.
- B. All drawings shall have line numbers that can be uniquely referenced from other drawings.
- C. All drawings showing wiring shall include unique wire numbers assigned to wiring that is installed between devices in the panel. The wire number shall be shown on the drawings.
- D. All drawings showing relays shall include reference to the drawings where the relay contacts are shown. Spare relay contacts that are not used shall be identified.

3.02 DRAWINGS REQUIRED

- A. Index of Drawings: Index of Drawings shall list drawing number, sheet number (if applicable), and drawing title for each drawing in drawing package.
- B. Symbol Sheet: Symbol Sheet shall include:
 - 1. Explanation of all symbols used on the drawings, including, but not limited to, normally open/normally closed contacts, flow switches, limit switches, pressure switches, selector switches, pushbuttons, timers, control relays, solenoids, fuses, circuit breakers, terminal blocks, and contactors. Symbol sheet does not need to be specific to project, but must contain

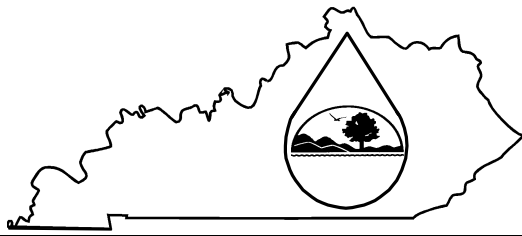
- explanation of all symbols used on the drawings (i.e., special symbols used for a particular project must be added to standard symbol sheets).
2. List of abbreviations used on the drawings.
 3. Explanation of continuation method for circuits that can not be shown on a single sheet.
- C. Exterior Enclosure Layout Drawing: Exterior layout drawing shall show location of all externally-mounted equipment. Exterior layout drawing shall include:
1. Enclosure dimensions, enclosure NEMA rating (i.e., NEMA 1, NEMA 4X stainless steel, NEMA 4X nonmetallic, etc.), and enclosure color or finish.
 2. Location and actual depiction of panel latches, hinges, mounting holes and lifting eyes.
 3. Location and accurate representation of equipment mounted on enclosure (i.e., switches should look like actual switches being installed; indicating lights should look like actual lights being installed).
 4. Equipment nameplate location.
 5. Description for each piece of equipment or unique identifier and parts list, or bill of materials.
 6. Nameplate list including nameplate wording, size, construction (i.e., lamicoid with Black background and White letters), and mounting method (i.e., stainless steel screws). Label size must include size in inches or reference to standard sizes included on symbol sheet, or elsewhere in drawing package.
 7. Identification of area reserved for equipment located inside enclosure, but not actually mounted on enclosure back panel, such as UPS's, fiber optic patch panels, and lighting packages.
- D. Interior Enclosure Layout Drawing: Interior layout drawing shall show location of all internally-mounted equipment. Interior layout drawing shall include:
1. Back panel dimensions and finish.
 2. Location and accurate representation of equipment (i.e., terminal blocks should look like actual terminal blocks; receptacle should look like actual receptacle, etc.).
 3. Dimensions of internally-mounted equipment are not necessary, but equipment should be drawn to scale such that an accurate representation of the way equipment will be mounted is shown on the drawing.
 4. Description for each piece of equipment or unique identifier and parts list, or bill of materials.
- E. Interconnection Diagram, Network Diagram or Block Diagram: Interconnection diagram, Network Diagram or Block Diagram shall show all cabling between system components and identify any station addressing or node numbers that are assigned to equipment. All cables shall be identified by cable type, including specific manufacturer and model/part number. Party responsible for furnishing and installing cable shall also be included. Some examples of cables that must be shown are:
1. Antenna cables.
 2. Communications cables between system components (fiber and/or copper). This includes fiber optic jumpers between fiber patch panels and equipment, and Ethernet patch cables between switches and devices.
 3. Communications cables (fiber and/or copper) between PLCs, controllers, operator interface equipment and security devices (e.g., card readers, electric strikes, and motion detectors) that are not shown on the elementary schematics.
- F. Elementary Schematic: Elementary schematics shall be developed for each motor or supplied equipment and shall include:
1. Nominal voltage, AC or DC designation, number of phases (if AC), and frequency in hertz (if AC) for each source of electrical supply to the enclosure.
 2. Prospective short-circuit current available at the point of electrical supply to the enclosure.
 3. Type of power supply system grounding (e.g., wye phase midpoint grounded, delta phases corner grounded, wye phases midpoint grounded, delta phases ungrounded, etc.).
 4. Complete documentation of electrical circuit from supply to motor or supplied equipment. Documentation shall include disconnecting means, main overcurrent protection (when supplied), branch overcurrent protection (when supplied), control circuit and special purpose control protection, motor control, overload protection, local disconnect (when supplied) and motor horsepower, and full load amps from nameplate or supplied equipment full load amps.
 5. Documentation of PLC or controller inputs and outputs.

6. Documentation of all circuit breaker/motor protector ratings, fuse sizes, control power transformer VA ratings, dip switch settings, etc.
- G. Wiring Diagram: Wiring diagrams shall show all terminations for all cables external to the enclosure. Terminations may be shown on the elementary schematics as long as the termination information is concise and easily understood by the personnel installing the field wiring. Termination information shall be shown for all devices, including devices that are not part of System Supplier's scope of supply. A box with two dots or continuation arrows indicating continuation to a piece of equipment are not acceptable.
- H. Calculations Summary: Calculations summary shall include calculations performed to:
 1. Determine size of UPS.
 2. Determine control power transformer sizing. Control power transformer sizing calculations may be generic based on typical circuits.
- I. Functional Testing Recommendations: Testing recommendations shall include description of functional tests that must be performed by operators. Functional test description shall be included for UPS, indicating lights, and other devices whose condition can only be determined by testing.

END OF SECTION 16-941

APPENDIX 1

KPDES FORM NOI-SW



Kentucky Pollutant Discharge Elimination System
(KPDES)
Notice of Intent (NOI)
for Storm Water Discharges
Associated with Industrial Activity Under the
KPDES General Permit

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:		Phone:	
Address:		Status of Owner/Operator:	
City, State, Zip Code:			

II. Facility/Site Location Information

Name:			
Address:			
City, State, Zip Code:			
County:			
Site Latitude: (degrees/minutes/seconds)		Site Longitude: (degrees/minutes/seconds)	

III. Site Activity Information

MS4 Operator Name:				
Receiving Water Body:				
Are there existing quantitative data?	Yes <input type="checkbox"/>	If Yes, submit with this form.		
	No <input type="checkbox"/>			
SIC or Designated Activity Code Primary		2nd		3rd
				4th
If this facility is a member of a Group Application, enter Group Application Number:				
If you have other existing KPDES Permits, enter Permit Numbers:				

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:		Completion Date:	
Estimated Area to be disturbed (in acres):			
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input type="checkbox"/> No <input type="checkbox"/>		

V. Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed or Typed Name:			
Signature:		Date:	

**Kentucky Pollutant Discharge Elimination System (KPDES)
Instructions
Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity
To Be Covered Under The KPDES General Permit**

WHO MUST FILE A NOTICE OF INTENT (NOI) FORM

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the **Storm Water Contact, Industrial Section, Kentucky Division of Water at (502) 564-3410.**

WHERE TO FILE NOI FORM

NOIs must be sent to the following address:

**Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601**

COMPLETING THE FORM

Type or print legibly in the appropriate areas only. If you have any questions regarding the completion of this form call the **Storm Water Contact, Industrial Section, at (502) 564-3410.**

SECTION I - FACILITY OPERATOR INFORMATION

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility.

F = Federal M = Public (other than federal or state)
S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code.

SECTION III - SITE ACTIVITY INFORMATION

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges. If data is available submit with this form.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section II of this application.

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other KPDES permits presently issued for the facility or site listed in Section II, list the permit numbers.

SECTION IV - ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION ACTIVITIES ONLY

Construction activities must complete Section IV in addition of Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION V - CERTIFICATION

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

APPENDIX 2



ANDY BESHEAR
GOVERNOR

REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

April 23, 2021

Honorable Chris Phelps, Mayor
Mortons Gap Water Works
P. O. Box 367
Mortons Gap, KY 42440

RE: Contract 3 – Water System Rehab. & Upgr.
F19-044
Hopkins County, KY
Mortons Gap Water Dept
AI #: 33926, FGL20190012

Dear Mayor Phelps:

The Kentucky Division of Water (DOW) has reviewed for completeness and adequacy the construction plans and specifications submitted for the above referenced contract. The DOW now approves these plans and specifications with respect to sanitary features of design in accordance with the requirements contained in the attached construction permit. The plans consist of approximately 350 feet of 6-inch water line, 8,400 feet of 3-inch water line, point repairs in the distribution system, master meter upgrades, and SCADA system upgrades. The approval conditions and a list of eligible/ineligible items are enclosed. Please note that ineligible items cannot be funded using State Revolving Fund (SRF) monies, and must be paid by other funding sources.

An approved set of plans and specifications should be made available at the project site at all times. If modifications are made to the plans and specifications before bidding, two (2) complete sets of as-bid plans and specifications must be submitted to the DOW for approval. A second DOW construction approval must be issued by separate correspondence before proceeding with advertising for bids. Any red line changes that were made by DOW personnel on the approved plans shall be incorporated into the bid set plans unless an alternative is approved.

You may now advertise for bids on the construction of this project. In addition to other notifications, this project must be advertised in the newspaper of the largest daily circulation in the project area.

Contract 3 – Water System Rehab. & Upgr.
F19-044
Mortons Gap Water Dept
AI #: 33926, FGL20190012
April 23, 2021
Page 2 of 3

You are cautioned not to advertise unless you have a proper wage decision. The Federal Davis-Bacon wage rates are applicable for this project. Please contact all other funding sources for their requirements pertaining to federal wage rates.

You are reminded that the construction contracts are subject to the equal employment opportunity requirements contained in Executive Order 11246. Equal employment opportunity affirmative action by the prime contractors and all subcontractors is mandated throughout the duration of the contract. Documentation of efforts to comply with Executive Order 11246, Equal Employment Opportunity is required to be kept by the borrower.

Review the attached Project Review and Cost Summary form for details of the information to be collected and retained in your files or to be submitted to DOW for review and approval. This form must be completed, signed by the recipient, and with the necessary information be then forwarded to the DOW. This signature will certify that all the information to be retained by the recipient has been secured and is available for review by the Division at the pre-construction conference. The required information must be approved by the DOW before executing any contracts.

Along with the Project Review and Cost Summary form, the following items must be submitted to the DOW for review and approval before executing any contracts:

- The bid advertisement
- Revised Project Budget
- Certified bid tabulation
- Documentation of compliance with DBE Good Faith Effort in accordance with 40 CFR 33.301

These items will be reviewed as a part of the Authority to Award process. The DOW will authorize you to award the contracts once these documents are approved

After the Notice to Proceed is signed, the DOW will need a copy of the executed contract documents, including plans and specifications.

Changes orders will require approval from the DOW before payment can be authorized from the State Revolving Fund. Submission of plans and specifications may be required for change order work.

Upon completion of the project, as-built drawings shall be provided to the DOW. As-builts shall be stamped, signed and dated by a professional engineer. A written certification stating that the project was constructed according to the approved plans shall be provided to the DOW by a professional engineer.

The construction permit included in this letter has been issued under the provisions of KRS Chapter 224 and the regulations promulgated pursuant thereto. Issuance of this approval does not relieve the applicant from the responsibility of obtaining any other approvals, permits or licenses required by this Cabinet and other state, federal and local agencies.

Contract 3 – Water System Rehab. & Upgr.
F19-044
Mortons Gap Water Dept
AI #: 33926, FGL20190012
April 23, 2021
Page 3 of 3

You are cautioned that the advertisement and award of this contract will be subject to the laws and regulations that govern the State Revolving Fund (SRF) and to the conditions of your loan agreement. If we can be of further assistance, please call Mark Rasche, Project Engineer, at (502) 782-6162.

Sincerely,



Mark Rasche, P.E.
Water Infrastructure Branch
Division of Water

MR
Enclosures

Eligible List, Ineligible List, Approval Conditions
Project Review and Cost Summary Form

C: McGhee Engineering, Inc.
Kentucky Infrastructure Authority
Cabinet for Economic Development
Hopkins County Health Department
Division of Plumbing

F19-044
Mortons Gap Water Works

SRF ELIGIBLE ITEMS:

Contract No. 3: No ineligible items determined

SRF INELIGIBLE ITEMS:

Contract No. 3: No ineligible items determined

APPROVAL CONDITIONS:

1. Provide Clear Site Certificates
2. Complete and return the Project Review and Cost Summary Form.

PROJECT REVIEW AND COST SUMMARY

This questionnaire/checklist is furnished as an administrative aid and is required for use in supplying information and documents, reporting minor changes, and project status. The information and documents should be submitted to DOW as soon as possible after bid opening.

DRINKING WATER SRF

CLEAN WATER SRF

SECTION 1.

1. Project Name _____ Project Number _____

2. Changes: Have there been any changes in the project since DOW's approval of the plans and specifications?

Yes No Construction Drawings. If yes, submit revised drawings and addenda. **See Note***

Yes No Specifications. If yes, submit addenda. **See Note***

Yes No Site Changes. If so, new Clear Site Certificates are required prior to start of construction.

Yes No Authorized Representative (Mayor, City Manager, etc.). If so, provide name and title.

***Note:** Prior approval is required for changes in design, scope, type of treatment, size, capacity, time to complete the project, etc. Changes, which result in increase in the amount of a contract, must be procured in accordance with state and federal requirements, as applicable.

SECTION 2.

Date Bids Opened: _____ Date Bids Expire: _____

1. The following items should be submitted to DOW after bid opening:
 - a) Executed Project Review & Cost Summary Form (this form).
 - b) Revised (As-bid) Budget (form attached).
 - c) Original bid advertisement or copy of advertisement with affidavit of publication.
 - d) Certified Bid Tabulations with engineer's seal.
 - e) Davis-Bacon ATA Certification form (with Project Wage Rate Sheet HUD-4720 form).
 - g) Clear Site Certificates.
 - h) DBE Documentation (See Attachment No. 11 of the Supplemental General Conditions (SGC)):
 - (1) Disadvantaged Business Enterprise Participation Policy form from the successful low bidder with DBE certifications and executed subcontracts with DBEs or letters of intent signed by both parties; and documentation on the level of effort taken

to obtain DBEs including copies of correspondence with DBE contractors, requesting quotes and copies of any advertisements soliciting DBE contractors, copies of returned envelopes and certified mail receipts, telephone log, etc.

(2) Bidder's List Form from recipient and successful bidder.

2. The following items must be submitted to DOW at the Pre-construction Meeting:

- a) Executed Contract Documents (once contract is signed).
- b) Notice of Award, Notice to Proceed, Bid Bond, Payment Bond, and Performance Bond (generally included in executed contract).
- c) Technical Specification (generally included in executed contract).
- d) Contractor's Certification Regarding Lobbying (See Attachment No. 11 in the SGC).
- e) Contractor's Debarred Firm Certification (See Attachment No. 10 in the SGC).

3. A copy of the items identified in Section 2.1 and Section 2.2, above, and the following must be retained by the owner. This documentation is subject for review, by DOW, at the time of the pre-construction conference.

- a) Name and qualifications of the proposed resident inspector(s).
- b) Proposal of the successful bidder(s).
- c) EEO documentation required by Executive Order 11246 as amended. Items 1 through 11 (See Attachment No. 7 in the SGC), is required for all contracts over \$10,000 except supplier contracts. Supplier contracts require:
 - (1) Name, address, and telephone number.
 - (2) Materials to be supplied and dollar value.For contracts below \$10,000, the same information required for supplier contracts must be submitted.
- d) Engineer's letter to the loan recipient recommending award of the contract. Letter must include a description of work, dollar amount, and name of the low bidder. If award is recommended to be made to other than the low bidder, a justification indicating why the low bidder is not responsive or responsible.
- e) Contractor project construction schedule and payment schedule.
- f) Applicable wage rate determination letter.
- g) Tentative Award Resolution.

4. **Comments:** _____

I hereby certify that all documentation outlined in Section 2.1, 2.2 and 2.3 will be retained in our project files and all documentation outlined in Section 2.1 has been submitted to DOW and all documentation outlined in Section 2.2 will be submitted to DOW during the Pre-construction meeting.

Signature of Authorized Representative

Date

Print Name and Title

SRF Project Cost Summary

Project Title: _____

WRIS#: _____

Project Budget: **Estimated** enter date

As Bid enter date

Revised enter date

Cost Classification	SRF KIA Loan	Funding Source 1	Funding Source 2	Funding Source 3	Funding Source 4	Funding Source 5	Local Funds	Unfunded Costs	Total
1	Administrative Expenses								
2	Legal Expenses								
3	Land, Appraisals, Easements								
4	Relocation Expenses & Payments								
5	Planning								
6	Engineering Fees – Design								
7	Engineering Fees – Construction								
8	Engineering Fees – Inspection								
9	Engineering Fees – Other								
10	Construction								
11	Equipment								
12	Miscellaneous								
13	Contingencies								
	Total								

Funding Sources	Amount	Date Committed
1		
2		
3		
4		
5		
	Total	

Local Funding Sources	Amount	Date Committed
1		
2		
3		
	Total	

Total Funding \$ _____

Cost Categories	Funding Source	Total Cost
Treatment (DW)		
Transmission and Distribution (DW)		
Source (DW)		
Storage (DW)		
WWTP Secondary Portion (CW)		
WWTP Advanced Portion (CW)		
Inflow and Infiltration Correction (CW)		
Major Sewer Rehabilitation (CW)		
Collector Sewers (CW)		
Interceptor Sewers including Pump Station (CW)		
Combined Sewer Overflow Correction (CW)		
Purchase of Systems (DW and CW)		
Restructuring (DW and CW)		
Land Acquisition (DW and CW)		
	Total Costs	

Distribution-Water Line Extension

Mortons Gap Water Dept

Facility Requirements

Activity ID No.:APE20210002

Page 1 of 4

GTSP0000000001 (Mortons Gap Water) Contract 3 - Water System Rehab and Upgrade:

Narrative Requirements:

Condition No.	Condition
T-1	Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5]
T-2	The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)]
T-3	A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)]
T-4	During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)]
T-5	Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)]
T-6	Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)]
T-7	The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a]
T-8	Water lines should be hydraulically capable of a flow velocity of 2.5 ft/s while maintaining a pressure of at least 20 psi. [Drinking Water General Design Criteria IV.1.b]
T-9	The normal working pressure in the distribution system at the service connection shall not be less than 30 psi under peak demand flow conditions. Peak demand is defined as the maximum customer water usage rate, expressed in gallons per minute (gpm), in the pressure zone of interest during a 24 hour (diurnal) time period. [Drinking Water General Design Criteria IV.1.d]
T-10	When static pressure exceeds 150 psi, pressure reducing devices shall be provided on mains or as part of the meter setting on individual service lines in the distribution system. [Drinking Water General Design Criteria IV.1.c]
T-11	The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of three (3) inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances. [Recommended Standards for Water Works 8.2.2, Drinking Water General Design Criteria IV.2.b]

Distribution-Water Line Extension

Mortons Gap Water Dept

Facility Requirements

Activity ID No.:APE20210002

Page 2 of 4

GTSP0000000001 (Mortons Gap Water) Contract 3 - Water System Rehab and Upgrade:

Narrative Requirements:

Condition No.	Condition
T-12	Water mains not designed to carry fire-flows shall not have fire hydrants connected to them. [Recommended Standards for Water Works 8.4.1.b]
T-13	Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-14	No flushing device shall be directly connected to any sewer. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-15	Pipe shall be constructed to a depth providing a minimum cover of 30 inches to top of pipe. [Drinking Water General Design Criteria IV.3.a]
T-16	Water mains shall be covered with sufficient earth or other insulation to prevent freezing. [Recommended Standards for Water Works 8.7]
T-17	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a depth of at least six inches below the bottom of the pipe. [Recommended Standards for Water Works 8.7]
T-18	Water line installation shall incorporate the provisions of the AWWA standards and/or manufacturer's recommended installation procedures. [Recommended Standards for Water Works 8.7]
T-19	All materials used for the rehabilitation of water mains shall meet ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-20	Packing and jointing materials used in the joints of pipe shall meet the standards of AWWA and the reviewing authority. [Recommended Standards for Water Works 8.1]
T-21	All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.7]
T-22	All materials including pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the Division of Water. [Recommended Standards for Water Works 8.1]
T-23	Water mains which have been used previously for conveying potable water may be reused provided they meet the above standards and have been restored practically to their original condition. [Recommended Standards for Water Works 8.1]

Distribution-Water Line Extension

Mortons Gap Water Dept

Facility Requirements

Activity ID No.:APE20210002

Page 3 of 4

GTSP0000000001 (Mortons Gap Water) Contract 3 - Water System Rehab and Upgrade:

Narrative Requirements:

Condition No.	Condition
T-24	Manufacturer approved transition joints shall be used between dissimilar piping materials. [Recommended Standards for Water Works 8.1]
T-25	The minimum size of water main which provides for fire protection and serving fire hydrants shall be six-inch diameter. [Recommended Standards for Water Works 8.2, Drinking Water General Design Criteria IV.2.a]
T-26	Pipes and pipe fittings containing more than 8% lead shall not be used. All products shall comply with ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-27	Gaskets containing lead shall not be used. Repairs to lead-joint pipe shall be made using alternative methods. [Recommended Standards for Water Works 8.1]
T-28	Pipe materials shall be selected to protect against both internal and external pipe corrosion. [Recommended Standards for Water Works 8.1]
T-29	Dead end mains shall be equipped with a means to provide adequate flushing. [Recommended Standards for Water Works 8.2]
T-30	The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads. [Recommended Standards for Water Works 8.4.3]
T-31	A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. [Recommended Standards for Water Works 8.3]
T-32	Wherever possible, chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances to a distribution system, shall not be located in areas subject to flooding or in areas of high groundwater. Such chambers or pits should drain to the ground surface, or to absorption pits underground. The chambers, pits and manholes shall not connect directly to any storm drain or sanitary sewer. Blow-offs shall not connect directly to any storm drain or sanitary sewer. [Recommended Standards for Water Works 8.6]
T-33	At high points in water mains where air can accumulate provisions shall be made to remove the air by means of air relief valves. [Recommended Standards for Water Works 8.5.1]
T-34	Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur. [Recommended Standards for Water Works 8.5.1]
T-35	The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward-facing elbow. [Recommended Standards for Water Works 8.5.2.c]

Distribution-Water Line Extension

Mortons Gap Water Dept

Facility Requirements

Activity ID No.:APE20210002

Page 4 of 4

GTSP0000000001 (Mortons Gap Water) Contract 3 - Water System Rehab and Upgrade:

Narrative Requirements:

Condition No.	Condition
T-36	Discharge piping from air relief valves shall not connect directly to any storm drain, storm sewer, or sanitary sewer. [Recommended Standards for Water Works 8.5.2.d]
T-37	Water pipe shall be constructed with a lateral separation of 10 feet or more from any gravity sanitary or combined sewer measured edge to edge where practical. If not practical a variance may be requested to allow the water pipe to be installed closer to the gravity sanitary or combined sewer provided the water pipe is laid in a separate trench or undisturbed shelf located on one side of the sewer with the bottom of the pipe at least 18 inches above the top of the gravity sanitary or combined sewer pipe. [Drinking Water General Design Criteria IV.3.b]
T-38	Water lines crossing sanitary, combined or storm sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sanitary, combined or storm sewer with preference to the water main located above the sanitary, combined or storm sewer. [Drinking Water General Design Criteria IV.3.c]
T-39	At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. [Recommended Standards for Water Works 8.8.3.b]
T-40	There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharged or drawn into the system. [Recommended Standards for Water Works 8.10.1]
T-41	Water utilities shall have a cross connection program conforming to 401 KAR 8. [Recommended Standards for Water Works 8.10.1]
T-42	Installed pipe shall be pressure tested and leakage tested in accordance with the appropriate AWWA Standards. [Recommended Standards for Water Works 8.7.6]
T-43	New, cleaned and repaired water mains shall be disinfected in accordance with AWWA Standard C651. The specifications shall include detailed procedures for the adequate flushing, disinfection, and microbiological testing of all water mains. In an emergency or unusual situation, the disinfection procedure shall be discussed with the Division of Water. [Recommended Standards for Water Works 8.7.7]
T-44	A minimum cover of five feet shall be provided over pipe crossing underwater. [Recommended Standards for Water Works 8.9.2]
T-45	Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair; the valves shall be easily accessible, and not subject to flooding for pipes crossing underwater. [Recommended Standards for Water Works 8.9.2.b]
T-46	Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples on each side of the valve closest to the supply source for pipes crossing. [Recommended Standards for Water Works 8.9.2.c]

APPENDIX 3

HOPKINS COUNTY FISCAL COURT

PUBLIC WORKS DEPT.

ENCROACHMENT PERMIT – HOPKINS CO. ROADS

Date: March 3, 2021

Permit No. 21-01

IAW Hopkins County Ordinance No. 1991(1) and Amendment thereto, permission is granted for the below listed roads encroachment:

Issued to: **City of Mortons Gap**

Name/location of roads: Tirey Lane
 White City Road

Type of encroachment: 90 LF parallel encroachment for a waterline and creek crossing replacement on an unnamed tributary of Flat Creek along White City Road

 30 LF road bore of White City Road

 Multiple parallel encroachments of White City Road along 5,650 LF of new waterline placement

 Parallel encroachment of Tirey Lane along 540 LF of new waterline placement

Purpose: water service lines

Conditions: return to existing condition.

Your cooperation is appreciated.

Sincerely,



Ken Todd
Public Works Director



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

Department of Highways, District 2 Office
1840 North Main Street
Madisonville, KY 42431-5003
270-824-7080

Andy Beshear
GOVERNOR

Jim Gray
SECRETARY

4/29/2021

James Vandiver
City of Mortons Gap
P.O. Box 367
Mortons Gap, KY 42440

Re: Hopkins County
KY 813 – White Plains Road
New Waterline
Utility Permit #02-2021-00114

Dear Mr. Vandiver

The Department of Highways has approved your application for an encroachment permit. Please ensure a copy is given to the party responsible for completing the project and is kept at the job site at all times.

Please see that the work is done in strict conformity with the permit and any other applicable conditions (see Form TC 99-21 and any other attached documents, conditions, or specifications). The work should be completed no later than January 1st, 2022. When the permitted work and any necessary restoration have been completed, please notify this office by using the attached form which will serve as notification for final inspection.

If there are any questions regarding this permit, please do not hesitate to contact me at (270) 871-0459 or taylor.franklin@ky.gov.

Sincerely,

A handwritten signature in cursive script that reads "Taylor Franklin".

Taylor Franklin, P.E.
Permits Section
District Two

Attachments



APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: 02-2021-00114

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT City of Mortons Gap	ADDRESS PO Box 367	CITY Mortons Gap	
EMAIL clerk@mortonsgapky.com		STATE KY	ZIP 42440
CONTACT NAME 1 James Vandiver or Chris Phelps	EMAIL clerk@mortonsgapky.com	PHONE # 270-258-5362	CELL #
CONTACT NAME 2 (if applicable) Chris Wilcutt, PE - Design Engineer	EMAIL chris.wilcutt@mcgheeengineering.com	PHONE # 270-426-9143	CELL #

SECTION 2: PROPOSED WORK LOCATION

ADDRESS KY 813)	CITY Mortons Gap	STATE Kentucky	ZIP 42440
COUNTY Hopkins	ROUTE # 813	MILE POINT 10.169	LONGITUDE (X) -87.4470803°
LATITUDE (Y) 37.2529275°			

ADDITIONAL LOCATION INFORMATION:

Intersection of Morton Street & US Highway 41 plus Intersection of KY Highway 813 & Free Henry Ford Road

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

The City of Mortons Gap plans to undertake a small water system upgrade & replacement project along multiple city roadways in the city limits plus add a SCADA system in their water system. One of the waterline replacements will impact US Highway 41 near the intersection with West Morton Street. In this particular area, the City wishes to encroach (parallel) state right-of-way to replace and upgrade their existing waterline with a new connection and new 3' PVC piping. Another state encroachment will be at the intersection of KY Highway 813 and Free Henry Ford Road as the City wishes to install SCADA equipment, including a short antenna, plus an electrical service drop near an existing master meter vault, which is all located in state right-of-way. This Permit Form entails the City's plan to encroach these areas of US Highway 41 and KY Highway 813 to perform the work. A copy of the plans for the proposed encroachment location is attached to this application.

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.

SIGNATURE

February 23, 2021

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 from the date the applicant submits their application.



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.



To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007



ENCROACHMENT PERMIT

KYTC KEPT #: 02-2021-00114

Permittee: City of Mortons Gap

Permit Type / Subtype: Utilities / Water

Work Completion Date: 1/1/2022

INDEMNITIES		
Type	Amount Required	Tracking Number
Performance Bond	\$0.00	
Cash / Check	\$0.00	
Self-Insured	\$0.00	
Payment Bond	\$0.00	
Liability Insurance	\$0.00	

This permit has been: **APPROVED** **DENIED**

Taylor Franklin	D2 Permits	4/29/2021
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
City of Mortons Gap request to install SCADA equipment at MP 10.169 on KY 813 in Hopkins County.	Hopkins - KY 813	37.252934	-87.447080



To Submit a Locate Request
 24 Hours a Day, Seven Days a Week:
 Call 811 or 800-752-6007



ENCROACHMENT PERMIT GENERAL NOTES & SPECIFICATIONS

Permit No. 02-2021-00114

I. SAFETY

A. General Provisions

- All signs and control of traffic shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition, Part VI, and safety requirements shall comply with the Permits Manual.
- All work necessary in shoulder or ditch line areas of a state highway shall be scheduled to be promptly completed so that hazards adjacent to the traveled way are kept to an absolute minimum.
- No more than one (1) traveled-lane shall be blocked or obstructed during normal working hours. All signs and flaggers during lane closure shall conform to the Manual on Uniform Traffic Control Devices.
- When necessary to block one (1) traveled-lane of a state highway, the normal working hours shall be as directed by the Department. No lanes shall be blocked or obstructed during adverse weather conditions (rain, snow, fog, etc.) without specific permission from the Department. Working hours shall be between _____ and _____.
- The traveled-way and shoulders shall be kept clear of mud and other construction debris at all times during construction of the permitted facility.
- No nonconstruction equipment or vehicles or office trailers shall be allowed on the right of way during working hours.
- The right of way shall be left free and clear of equipment, material, and vehicles during non-working hours.

B. Explosives

- No explosive devices or explosive material shall be used within state right of way without proper license and approval of the Kentucky Department of Mines and Minerals, Explosive Division.

C. Other Safety Requirements

- Bollards to not be installed without approval in the field with the District Permit Engineer, Taylor Franklin (270) 270-0459. All installations above grade shall be marked with a 72 inch witness post. KYTC is not responsible for any installations damaged during maintenance activities that are not visible because of vegetation or any other obstruction.

II. UTILITIES * Applies to Fully Controlled Access Highways **ONLY**

- *All work necessary within the right of way shall be performed behind a temporary fence erected prior to a boring operation.
- *The temporary woven wire fence shall be removed immediately upon completion of work on the right of way, and the control of access immediately restored to original condition, in accordance with applicable Kentucky Department of Highways Standard Drawings.
- *All vents, valves, manholes, etc., shall be located outside of the right-of-way.
- *Encasement pipe shall extend from right-of-way line to right-of-way line and shall be one continuous run of pipe. The encasement pipe shall be welded at all joints.
- The boring pit and tail ditch shall extend past the existing toe of slope or bottom of ditch line and shall be a minimum of 42 inches deep.

Permit No. 02-2021-00114

II. UTILITIES (Continued)

- Encasement pipe shall conform to current standards for highway crossings in accordance with the Permits Manual.
- Parallel lines shall be constructed between back slope of ditch line and right-of-way line and shall have a minimum of 30-inch cover above top of pipe or conduit.
- All pavement cuts shall be restored per Kentucky Transportation Cabinet form TC 99-13.
- Aerial crossing of this utility line shall have a minimum clearance of _____ feet from the high point of the roadway to the low point of the line (calculated at the coefficient for expansion of 120 degrees Fahrenheit).
- The 30-foot clear zone requirement shall be met to the extent possible in accordance with the Permits Manual.
- Special requirements:

III. GENERAL

A. OSHA

- Kentucky Occupational Safety and Health Standards for the construction industry, which has the effect of law, states in part: (Page 52, 1926.651, Specific Excavation Requirements) "Prior to opening an excavation, effort shall be made to determine whether underground installations, (sewer, telephone, water, fuel, electric lines, etc.) will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation."

B. Archaeological

- Whenever materials of an archaeological nature are discovered during the course of construction work or maintenance operations, contact shall be made immediately with the Division of Environmental Analysis, which maintains an archaeologist on staff, or with the Office of the State Archaeologist located at the University of Kentucky. Following this consultation, further action shall be decided on a case-by-case basis by the State Highway Engineer or the Transportation Planning Engineer or their designated representative.

C. Utilities in the Work Areas

- The permittee shall be responsible for any damage to existing utilities, and any utility modifications or relocations within state right of way necessary, as determined by the Department or by the owner of the utility, shall be at the expense of the permittee and subject to the approval of the Department.
- All existing manholes and valve boxes shall be adjusted to be flush with finished grade.

D. Environmental

- If the activity to which this permit relates disturbs one acre or more of land, you must obtain a KPDES KYR10 permit.

Websites

<http://www.water.ky.gov/permitting/wastewaterpermitting/KPDES/storm/>

Inspectors for KPDES KYR10 at www.KEPSC.org

IV. RIGHT OF WAY RESTORATION

All disturbed portions of the right of way shall be restored to grass as per Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition). A satisfactory turf, as determined by the Department, shall be established by the permittee prior to release of indemnity. Sodding or seeding shall be as follows:

Lawn or High Maintenance Situation	70% Lawn Fescue (e.g., variety - Falcon) 30% Bluegrass or
	70% Lawn Rye (e.g., variety - Derby) 30% Bluegrass

Right of Way Lawn Maintenance Situation	70% KY 31 Fescue 30% Perennial Rye Grass or
	100% KY Fescue

- Two tons of clean straw mulch per acre of seeding.
- Prior to seeding, the ground shall be prepared in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- Substitutes for sod such as artificial turf, rocked mulch, or paved areas may be acceptable if they are aesthetically pleasing.
- All ditch-flow lines and all ditch-side slopes shall be sodded.
- Existing concrete right of way markers shall not be disturbed, but if damaged in any way, they shall be entirely replaced by the permittee, with new concrete markers to match the original markers, in accordance with Kentucky Department of Highways Standard Drawings. Markers that are entirely removed shall be re-established in the proper locations by the permittee and to the satisfaction of the Department.

Other right of way restoration requirements are as follows:

Right-Of-Way shall be restored to it's original condition.

V. DRAINAGE

- All pipe shall be laid in a straight alignment, to proper grades, and with all materials and methods of installation including bedding and joint seating in accordance with Department Standard Specifications for Road and Bridge Construction (latest edition). Pipe shall not be covered until inspected by the Department and express permission obtained to make backfill.
- All gutter lines at the base of new curbs shall be on continuous grades, and pockets of water along with curbs or in entrance areas or other paved areas within the right of way shall not be acceptable.
- All drainage structures and appurtenances (manholes, catch basins, curbing, inlet basins, etc.) shall conform to Department specifications and shall be constructed in accordance with the Department Standard Drawings. Type required:

Permit No. 02-2021-00114

VI. Paving

- No bituminous pavement shall be installed within the right of way between November 15 and April 1, nor when the temperature is below 40 degrees Farenheit, without the express consent of the Department. No bituminous pavement shall be installed when the underlying course is wet.
- Paving within the right of way shall be as follows:
 - Base (Type) _____ (Thickness) _____
 - Surface Base (Type) _____ (Thickness) _____
 - Finished Surface (Type) _____ (Thickness) _____
- Existing pavement and shoulder material shall be removed to accomodate the above paving specifications.
- The finished surface of all new pavement within the right of way shall be true to the required slope and grade, uniform in density and texture, free of irregularities, and equivalent in riding qualities to the adjacent highway pavement or as determined by the Department of Highways.
- All materials and methods of construction, including base and subgrade preparation, shall be in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- 24 hours notice to the Department is required prior to beginning paving operations.
Phone: _____ Name: _____
- To ensure proper surface drainage, the new pavement shall be flush with the edge of existing highway pavement and shall slope away from the existing edge of the pavement as specified in drawings.
- Existing edge of pavement shall be saw-cut to provide a straight and uniform joint for new pavement. An approved joint sealer, in accordance with Kentucky Department of Highways Standard Specifications (latest edition), shall be applied between new and existing pavements.

VII. SIDEWALKS SPECIFICATIONS *This dimension should be equal to the width of the sidewalk.

A. New Sidewalks

- Sidewalks shall be constructed of Class A concrete (3,500 p.s.i. test), shall be * _____ feet in width, 6 inches in thickness across the bituminous entrance, and 4 inches in thickness across the remaining sections.
- Sidewalks shall have tooled joints not less than 1 inch in depth at four foot intervals*, and 1/2 premolded expansion joints extending entirely through the sidewalk at intervals not to exceed 50 feet.
- All materials and methods of construction, including curing, shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).

B. Existing Sidewalks

- (Applicable if existing sidewalks are being relocated)** Use of the sidewalk shall not be blocked or obstructed, and a usable walkway shall be maintained across the construction area at all times.
- All damaged sections of the sidewalks shall be entirely replaced to match existing sections.

Permit No. 02-2021-00114

VIII. DENSE GRADED SHOULDERS

- Any existing dense-graded aggregate shoulders in the entire frontage within the construction area, which have been disturbed or damaged or on which dirt has been placed or mud has been deposited or tracked, shall be restored to original condition by removal of all contaminated material and replaced to proper grade with new dense-graded aggregate.
- All new aggregate shoulders as specified in the plan shall consist of 5 inches of compacted dense-graded aggregate, 2^{1/2} pounds per square yard of calcium chloride.
- All dense-graded aggregate shoulders shall slope away from the new edge of pavement at the rate of 3/4 inch per foot.

IX. CURBING

A. Bituminous Curbs

- Bituminous concrete curbs shall be given a paint coat of asphalt emulsion.
- The surface under the bituminous concrete curb shall be tacked with asphalt emulsion.
- All bituminous concrete curbs shall be constructed of a Class I bituminous concrete mixture as specified by official Department of Highways specifications.
- All bituminous curbs shall be rolled curb, with a minimum base width of 8 inches and a minimum height of _____ inches. The top of the curb shall be constructed in such a manner as to guarantee a uniform rolled effect throughout the entire run.

B. Concrete Curbs

- All curbs or curb and gutter shall be constructed of Class A concrete (3,500 p.s.i. test) and shall be uniform in height, width, and alignment, true to grade, and satisfactory in finish and appearance as determined by the Department. All materials and methods of construction, including curing, shall be in accordance with Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- All concrete curbs shall be 6 inches in width, extend _____ inches above finished grade and 12 inches below finished grade, with all visible edge rounded to 1/2 inch radii.
- All concrete curbs shall have expansion joints constructed at intervals of not more than 30 feet, and 1/2 inch premolded expansion joint material (cut to conform to the curb or to the curb and gutter section) shall be used in each expansion joint.
- The last _____ feet of all concrete curbs are to be tapered down to finished grade.

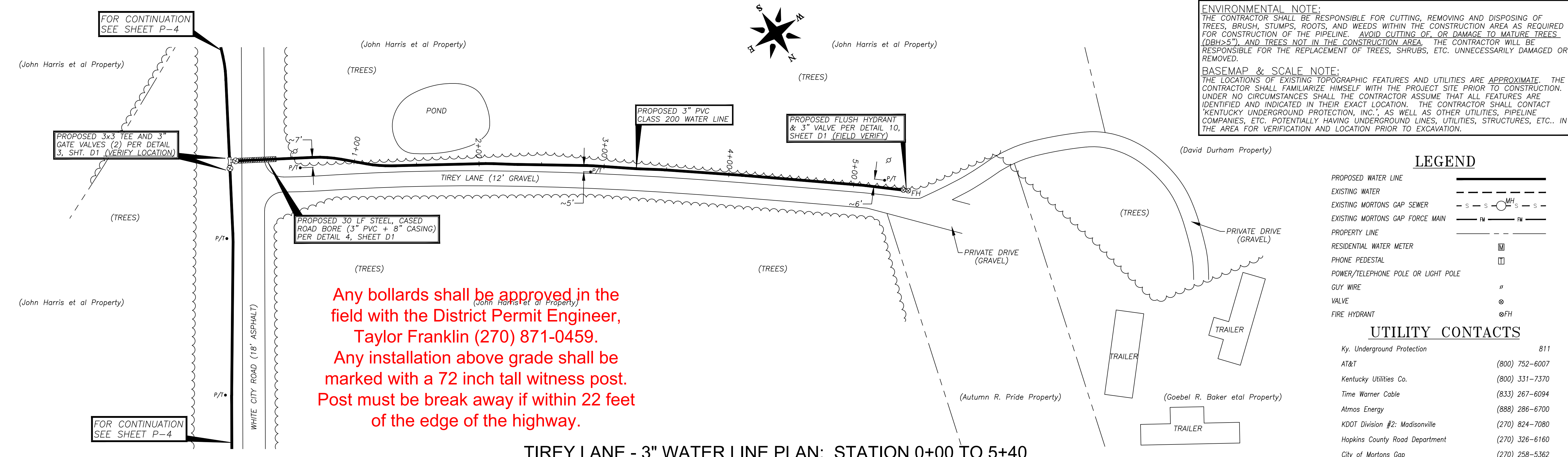
Permit No. 02-2021-00114

X. RIGHT-OF-WAY FENCE REPLACEMENT

- The replacement fence shall be a height of at least 48 inches and shall be of sufficient density to contain all animals (if applicable).
- The replacement fence shall be a minimum of 1 foot and a maximum of 2 feet outside the right-of-way line.
- The fence materials and design shall meet accepted industry standards and be treated as paintable.
- The permittee shall be required to maintain the fence in a high state of repair.
- The existing fence shall be removed by permittee and stored at the Department's maintenance storage yard for future reuse by the Department.
- The control of access shall not be diminished as a result of replacement of the fence.
- Miscellaneous:

NOTICE TO PERMITTEE

THE PERMITTEE AGREES THAT ALL WORK WITHIN THE EXISTING RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH THE PLANS AS APPROVED AND PERMITTED BY AN ENCROACHMENT PERMIT. ANY CHANGES OR VARIANCES MADE AT THE TIME OF CONSTRUCTION WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF HIGHWAYS SHALL BE REMOVED BY THE PERMITTEE AT NO EXPENSE TO THE DEPARTMENT OF HIGHWAYS AND SHALL BE REDONE BY THE PERMITTEE TO CONFORM WITH THE APPROVED PLANS.



ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. AVOID CUTTING OF OR DAMAGE TO MATURE TREES (DBH>6"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

BASEMAP & SCALE NOTE:
 THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ASSUME THAT ALL FEATURES ARE IDENTIFIED AND INDICATED IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL CONTACT 'KENTUCKY UNDERGROUND PROTECTION, INC.', AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC., IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.

LEGEND

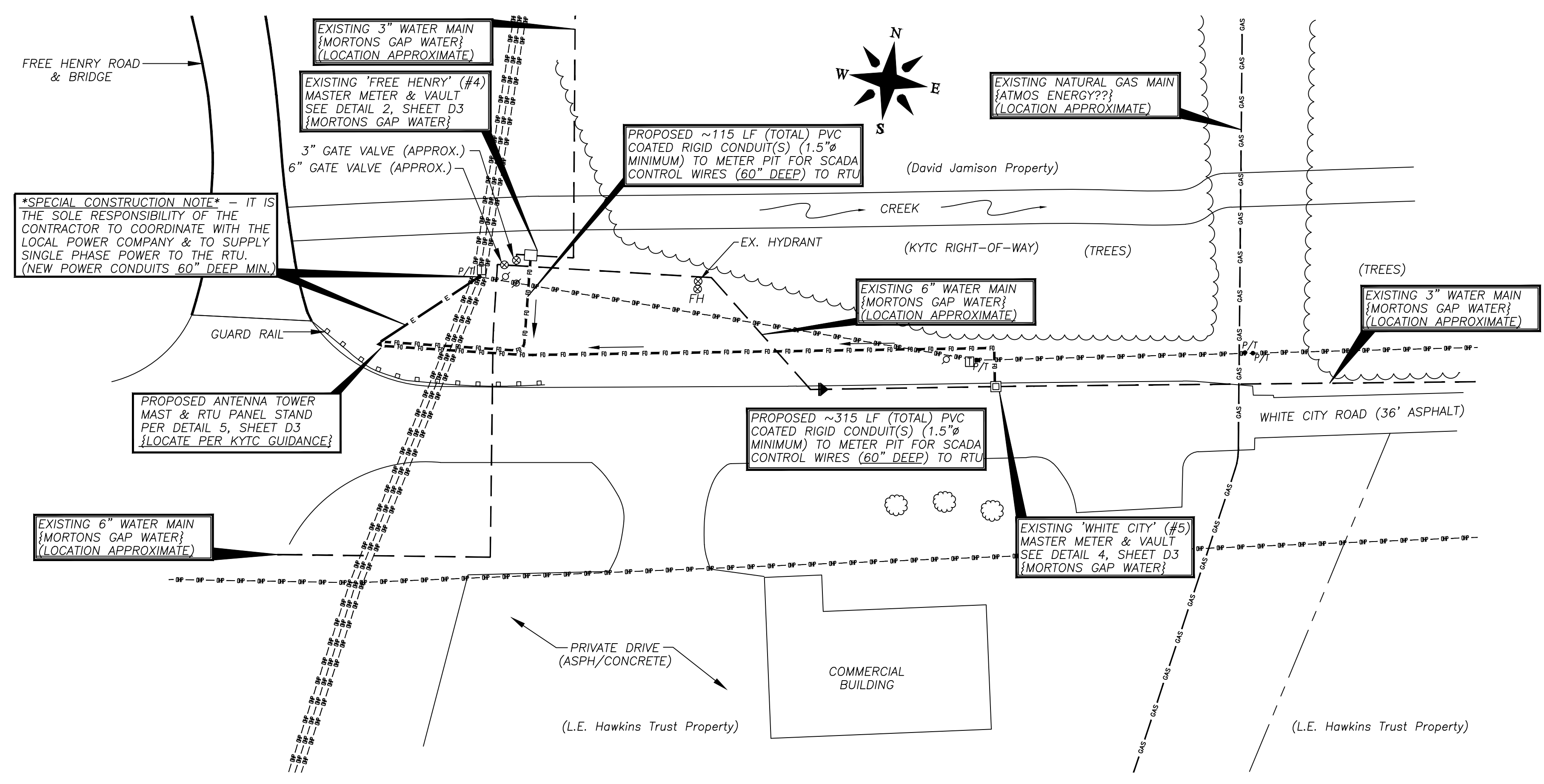
PROPOSED WATER LINE	---
EXISTING WATER	---
EXISTING MORTONS GAP SEWER	-S-S-O-MH-S-S-
EXISTING MORTONS GAP FORCE MAIN	-FM-FM-
PROPERTY LINE	---
RESIDENTIAL WATER METER	⊞
PHONE PEDESTAL	⊞
POWER/TELEPHONE POLE OR LIGHT POLE	⊞
GUY WIRE	—
VALVE	⊙
FIRE HYDRANT	⊙FH

UTILITY CONTACTS

Ky. Underground Protection	811
AT&T	(800) 752-6007
Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Morton's Gap	(270) 258-5362

Any bollards shall be approved in the field with the District Permit Engineer, Taylor Franklin (270) 871-0459. Any installation above grade shall be marked with a 72 inch tall witness post. Post must be break away if within 22 feet of the edge of the highway.

TIREY LANE - 3" WATER LINE PLAN: STATION 0+00 TO 5+40



GENERAL NOTES (SITES 4 & 5):

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STANDARD ELECTRICAL CODES, LATEST REVISION. ALL WIRING SHALL BE IN NEW CONDUITS.
- ALL WORK & VAULT PENETRATIONS SHALL BE COORDINATED WITH THE CITY OF MORTONS GAP PRIOR TO THE START OF WORK AT THIS SITE. ALL WALL CUTS OR WALL PENETRATIONS SHALL BE CAULKED AND WELL SEALED TO PREVENT MOISTURE ENTRY/DAMAGE. ANY REWORK OF THE INSTALLED EQUIPMENT, DUE TO FAILURE TO COORDINATE, SHALL BE AT NO EXPENSE TO THE OWNER.

SCOPE OF WORK NOTES (MORTONS GAP 'FREE HENRY' - SITE 4) MASTER METER (EXISTING):

- CORE INTO EXISTING PRECAST CONCRETE VAULT TO PROVIDE A NEW UNDERGROUND ENTRANCE POINT FOR SCADA AND/OR POWER CABLE(S).
- PROVIDE AND INSTALL NEW CONDUIT (AS SIZED ON THE SITE PLAN) AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT NEW RTU WITH VAULT COMPONENTS AS REQUIRED, INCLUDING NECESSARY TRENCHING.
- CONTRACTOR TO PROVIDE THE NECESSARY RETRO-FIT/MODIFICATION ON THE EXISTING 3" SENSUS OMNI WATER METER TO MAKE COMPATIBLE WITH AND TRANSMIT FLOW DATA TO THE SCADA SYSTEM. CONTRACTOR TO VERIFY SCALING OF EXISTING SENSUS REGISTER.
- PROVIDE ONE (1) NEW PRESSURE TRANSDUCER ON THE EXISTING WATER MAIN; "SUBMERSIBLE RATED"
 - PRESSURE TRANSDUCERS SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR.
 - INSTALL PIPE SADDLE AND ISOLATION VALVE AS NEEDED FOR PRESSURE MEASURING POINTS.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

SCOPE OF WORK NOTES (MORTONS GAP 'WHITE CITY' - SITE 5) MASTER METER (EXISTING):

- CORE INTO EXISTING PRECAST CONCRETE VAULT TO PROVIDE A NEW UNDERGROUND ENTRANCE POINT FOR SCADA AND/OR POWER CABLE(S).
- PROVIDE AND INSTALL NEW CONDUIT (AS SIZED ON THE SITE PLAN) AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT NEW RTU WITH VAULT COMPONENTS AS REQUIRED, INCLUDING NECESSARY TRENCHING.
- PROVIDE THE NECESSARY RETRO-FIT/MODIFICATION ON THE EXISTING 3" KAMSTRUP WATER METER TO MAKE COMPATIBLE WITH AND TRANSMIT FLOW DATA TO THE SCADA SYSTEM.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

SCOPE OF WORK NOTES (RTU SCADA PANEL):

- PROVIDE (1 EA.) SINGLE NEW 120VAC POWERED SCADA REMOTE TERMINAL UNIT "RTU" {SHARED FOR BOTH THE 'FREE HENRY' MASTER METER AND 'WHITE CITY' MASTER METER}. FIELD VERIFY THE ACTUAL LOCATION WITH THE UTILITY.
 - FULLY ASSEMBLED & HOUSED IN A NEMA 4 SS PAINTED WHITE ENCLOSURE.
 - INCLUDING: PLC, RADIO MODEM, POWER SUPPLIES, SURGE PROTECTION, INTERFACE TERMINALS AND ALL REQUIRED ANCILLARY DEVICES FOR A COMPLETE AND WORKING UNIT.
 - RTU TO INCLUDE ALLEN-BRADLEY MICRO850 PLATFORM PLC, LICENSED RADIO UNIT & REQUIRED ANCILLARY DEVICES FOR A COMPLETE & WORKING RTU. RTU TO BE UL508A LISTED.
- PROVIDE AND INSTALL NEW SS UNI-STRUT STRUCTURE FOR RTU ENCLOSURE MOUNTING.
- PROVIDE AND INSTALL (1 EA) NEW FREE-STANDING ALUMINUM RADIO COMMUNICATIONS TOWER WITH POSITIONING & HEIGHT DETERMINED BY SCADA INTEGRATOR'S RADIO PATH STUDY (MAXIMUM TOWER HEIGHT SHALL BE 20 FEET). INSTALLATION TO INCLUDE RADIO COMMUNICATIONS ANTENNA, COAXIAL CABLE, CONNECTORS, SURGE PROTECTOR, GROUNDING AND RELATED ANCILLARY DEVICES FOR A PROPERLY INSTALLED AND WORKING UNIT. (NOTE: IF RADIO PATH FADE MARGINS REQUIREMENTS CAN BE MET, THE ANTENNA/MAST MAY BE MOUNTED ON THE RTU MOUNTING STRUCTURE. THE ANTENNA MAST MUST BE SECURELY MOUNTED WITH 3 POINTS OF CONTACT. ANTENNA TO BE A MINIMUM OF 10 FEET FROM GROUND LEVEL.)
- PROVIDE AND INSTALL UP TO TWO (2) PIPE BOLLARDS FOR VAULT PROTECTION AND/OR RTU & TOWER PROTECTION. FIELD VERIFY LOCATIONS.
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE RTU AS REQUIRED.
- PROVIDE AND INSTALL (1 EA) NEW 100 AMP 240/120 VAC ELECTRICAL SERVICE AND HARDWARE, INCLUDING (1) MAIN BREAKER AND A MINIMUM OF 4 (EA.) 15AMP SINGLE POLE BREAKERS.
 - THE OWNER SHALL PROVIDE FOR ALL FEES WITH THE UTILITY COMPANY TO HAVE POWER INSTALLED TO THE SITE LOCATION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY COMPANY THRU INSTALLATION, INSTALLING THE SERVICE PANEL, TRENCHING UNDERGROUND CONDUITS AS REQUIRED, PLUS RELATED INSPECTION FEES AND CONDUIT/WIRING TO THE RTU AS REQUIRED.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND/OR CONTROL LOCAL FUNCTIONS AS REQUIRED FOR FLOW RATE, FLOW TOTALIZATION, SYSTEM PRESSURE, POWER STATUS, ETC.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

WHITE CITY ROAD & FREE HENRY FORD ROAD (SITE 4 & 5): MASTER METER UPGRADES

REVISIONS	
NO	DATE
FOR R/W REVIEW	02-15-21
BY	CWW

McGHEE ENGINEERING
 202 Ewing Street
 Guthrie, KY 42334
 (270) 483-9985

MORTONS GAP WATER & SEWER
 P.O. Box 367
 Morton's Gap, KY 42440
 (270) 258-5362

DES BY: CWW
 DWN BY: CWW
 SCALE: 1" = 40'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING

CHK BY: CWW
 APP BY: CWW

LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

City of Morton's Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Tirey Ln. Waterline Plan & Other Upgrades



February 15, 2021

Chris Wilcutt, P.E.
 Chris Wilcutt, P.E.

NOTICE OF COMPLETION OF ENCROACHMENT PERMIT WORK

PERMITTEE

Name: City of Mortons Gap
Contact Person: James Vandiver
Address: P.O. Box 367
City: Mortons Gap
State: Kentucky
Zip: 42440
Telephone: (270) 258-5362

PROJECT IDENTIFICATION

Permit Number: 02-2021-00114

I wish to notify the Department of Highways that the above mentioned permit work and any necessary right-of-way restoration have been completed and are ready for final inspection.

Permittee

Please return this form to the address below when work is completed and ready for final inspection.

Please Return to: Permit Engineer
Department of Highways, District 2 Office
1840 North Main Street
Madisonville, Kentucky 42431
(270) 824-7080
www.transportation.ky.gov/

LOCATION(S)			
Description	County - Route	Latitude	Longitude
City of Mortons Gap request to install SCADA equipment at MP 10.169 on KY 813 in Hopkins County.	Hopkins - KY 813	37.252934	-87.447080



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

Department of Highways, District 2 Office
1840 North Main Street
Madisonville, KY 42431-5003
270-824-7080

Andy Beshear
GOVERNOR

Jim Gray
SECRETARY

4/29/2021

James Vandiver
City of Mortons Gap
P.O. Box 367
Mortons Gap, KY 42440

Re: Hopkins County
US 41 – South Hopkinsville Road
New Waterline
Utility Permit #02-2021-00110

Dear Mr. Vandiver

The Department of Highways has approved your application for an encroachment permit. Please ensure a copy is given to the party responsible for completing the project and is kept at the job site at all times.

Please see that the work is done in strict conformity with the permit and any other applicable conditions (see Form TC 99-21 and any other attached documents, conditions, or specifications). The work should be completed no later than January 1st, 2022. When the permitted work and any necessary restoration have been completed, please notify this office by using the attached form which will serve as notification for final inspection.

If there are any questions regarding this permit, please do not hesitate to contact me at (270) 871-0459 or taylor.franklin@ky.gov.

Sincerely,

A handwritten signature in cursive script that reads "Taylor Franklin".

Taylor Franklin, P.E.
Permits Section
District Two

Attachments



APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: 02-2021-00110

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT City of Mortons Gap	ADDRESS PO Box 367	CITY Mortons Gap	
EMAIL clerk@mortonsgapky.com		STATE KY	ZIP 42440
CONTACT NAME 1 James Vandiver or Chris Phelps	EMAIL clerk@mortonsgapky.com	PHONE # 270-258-5362	CELL #
CONTACT NAME 2 (if applicable) Chris Wilcutt, PE - Design Engineer	EMAIL chris.wilcutt@mcgheeengineering.com	PHONE # 270-426-9143	CELL #

SECTION 2: PROPOSED WORK LOCATION

ADDRESS US Hwy 41	CITY Mortons Gap	STATE Kentucky	ZIP 42440
COUNTY Hopkins	ROUTE # 41	MILE POINT 8.45	LONGITUDE (X) -87.475942°
			LATITUDE (Y) 37.235580°

ADDITIONAL LOCATION INFORMATION:

Intersection of Morton Street & US Highway 41 plus Intersection of KY Highway 813 & Free Henry Ford Road

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

The City of Mortons Gap plans to undertake a small water system upgrade & replacement project along multiple city roadways in the city limits plus add a SCADA system in their water system. One of the waterline replacements will impact US Highway 41 near the intersection with West Morton Street. In this particular area, the City wishes to encroach (parallel) state right-of-way to replace and upgrade their existing waterline with a new connection and new 3' PVC piping. Another state encroachment will be at the intersection of KY Highway 813 and Free Henry Ford Road as the City wishes to install SCADA equipment, including a short antenna, plus an electrical service drop near an existing master meter vault, which is all located in state right-of-way. This Permit Form entails the City's plan to encroach these areas of US Highway 41 and KY Highway 813 to perform the work. A copy of the plans for the proposed encroachment location is attached to this application.

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.



SIGNATURE

February 23, 2021

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 from the date the applicant submits their application.



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.



To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007



ENCROACHMENT PERMIT

KYTC KEPT #: 02-2021-00110

Permittee: City of Mortons Gap

Permit Type / Subtype: Utilities / Water

Work Completion Date: 1/1/2022

INDEMNITIES		
Type	Amount Required	Tracking Number
Performance Bond	\$5,000.00	525948
Cash / Check	\$0.00	
Self-Insured	\$0.00	
Payment Bond	\$0.00	
Liability Insurance	\$0.00	

This permit has been: **APPROVED** **DENIED**

Taylor Franklin	D2 Permits	4/29/2021
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
Install approximately 160 feet of new waterline on the west side of US 41 at MP 8.45 in Hopkins County on the back side of the ditch.	Hopkins - US 41	37.235533	-87.476021



To Submit a Locate Request
 24 Hours a Day, Seven Days a Week:
 Call 811 or 800-752-6007



ENCROACHMENT PERMIT GENERAL NOTES & SPECIFICATIONS

Permit No. 02-2021-00110

I. SAFETY

A. General Provisions

- All signs and control of traffic shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways, latest edition, Part VI, and safety requirements shall comply with the Permits Manual.
- All work necessary in shoulder or ditch line areas of a state highway shall be scheduled to be promptly completed so that hazards adjacent to the traveled way are kept to an absolute minimum.
- No more than one (1) traveled-lane shall be blocked or obstructed during normal working hours. All signs and flaggers during lane closure shall conform to the Manual on Uniform Traffic Control Devices.
- When necessary to block one (1) traveled-lane of a state highway, the normal working hours shall be as directed by the Department. No lanes shall be blocked or obstructed during adverse weather conditions (rain, snow, fog, etc.) without specific permission from the Department. Working hours shall be between _____ and _____
- The traveled-way and shoulders shall be kept clear of mud and other construction debris at all times during construction of the permitted facility.
- No nonconstruction equipment or vehicles or office trailers shall be allowed on the right of way during working hours.
- The right of way shall be left free and clear of equipment, material, and vehicles during non-working hours.

B. Explosives

- No explosive devices or explosive material shall be used within state right of way without proper license and approval of the Kentucky Department of Mines and Minerals, Explosive Division.

C. Other Safety Requirements

II. UTILITIES * Applies to Fully Controlled Access Highways **ONLY**

- *All work necessary within the right of way shall be performed behind a temporary fence erected prior to a boring operation.
- *The temporary woven wire fence shall be removed immediately upon completion of work on the right of way, and the control of access immediately restored to original condition, in accordance with applicable Kentucky Department of Highways Standard Drawings.
- *All vents, valves, manholes, etc., shall be located outside of the right-of-way.
- *Encasement pipe shall extend from right-of-way line to right-of-way line and shall be one continuous run of pipe. The encasement pipe shall be welded at all joints.
- The boring pit and tail ditch shall extend past the existing toe of slope or bottom of ditch line and shall be a minimum of 42 inches deep.

Permit No. 02-2021-00110

II. UTILITIES (Continued)

- Encasement pipe shall conform to current standards for highway crossings in accordance with the Permits Manual.
- Parallel lines shall be constructed between back slope of ditch line and right-of-way line and shall have a minimum of 30-inch cover above top of pipe or conduit.
- All pavement cuts shall be restored per Kentucky Transportation Cabinet form TC 99-13.
- Aerial crossing of this utility line shall have a minimum clearance of _____ feet from the high point of the roadway to the low point of the line (calculated at the coefficient for expansion of 120 degrees Fahrenheit).
- The 30-foot clear zone requirement shall be met to the extent possible in accordance with the Permits Manual.
- Special requirements:

III. GENERAL

A. OSHA

- Kentucky Occupational Safety and Health Standards for the construction industry, which has the effect of law, states in part: (Page 52, 1926.651, Specific Excavation Requirements) "Prior to opening an excavation, effort shall be made to determine whether underground installations, (sewer, telephone, water, fuel, electric lines, etc.) will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation."

B. Archaeological

- Whenever materials of an archaeological nature are discovered during the course of construction work or maintenance operations, contact shall be made immediately with the Division of Environmental Analysis, which maintains an archaeologist on staff, or with the Office of the State Archaeologist located at the University of Kentucky. Following this consultation, further action shall be decided on a case-by-case basis by the State Highway Engineer or the Transportation Planning Engineer or their designated representative.

C. Utilities in the Work Areas

- The permittee shall be responsible for any damage to existing utilities, and any utility modifications or relocations within state right of way necessary, as determined by the Department or by the owner of the utility, shall be at the expense of the permittee and subject to the approval of the Department.
- All existing manholes and valve boxes shall be adjusted to be flush with finished grade.

D. Environmental

- If the activity to which this permit relates disturbs one acre or more of land, you must obtain a KPDES KYR10 permit.

Websites

<http://www.water.ky.gov/permitting/wastewaterpermitting/KPDES/storm/>

Inspectors for KPDES KYR10 at www.KEPSC.org

Permit No. 02-2021-00110

IV. RIGHT OF WAY RESTORATION

- All disturbed portions of the right of way shall be restored to grass as per Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition). A satisfactory turf, as determined by the Department, shall be established by the permittee prior to release of indemnity. Sodding or seeding shall be as follows:

Lawn or High Maintenance Situation	70% Lawn Fescue (e.g., variety - Falcon) 30% Bluegrass or
	70% Lawn Rye (e.g., variety - Derby) 30% Bluegrass
Right of Way Lawn Maintenance Situation	70% KY 31 Fescue 30% Perennial Rye Grass or
	100% KY Fescue

- Two tons of clean straw mulch per acre of seeding.

- Prior to seeding, the ground shall be prepared in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).

- Substitutes for sod such as artificial turf, rocked mulch, or paved areas may be acceptable if they are aesthetically pleasing.

- All ditch-flow lines and all ditch-side slopes shall be sodded.

- Existing concrete right of way markers shall not be disturbed, but if damaged in any way, they shall be entirely replaced by the permittee, with new concrete markers to match the original markers, in accordance with Kentucky Department of Highways Standard Drawings. Markers that are entirely removed shall be re-established in the proper locations by the permittee and to the satisfaction of the Department.

- Other right of way restoration requirements are as follows:

Right-Of-Way shall be restored to it's original condition.

V. DRAINAGE

- All pipe shall be laid in a straight alignment, to proper grades, and with all materials and methods of installation including bedding and joint seating in accordance with Department Standard Specifications for Road and Bridge Construction (latest edition). Pipe shall not be covered until inspected by the Department and express permission obtained to make backfill.

- All gutter lines at the base of new curbs shall be on continuous grades, and pockets of water along with curbs or in entrance areas or other paved areas within the right of way shall not be acceptable.

- All drainage structures and appurtenances (manholes, catch basins, curbing, inlet basins, etc.) shall conform to Department specifications and shall be constructed in accordance with the Department Standard Drawings. Type required:

Permit No. 02-2021-00110

VI. Paving

- No bituminous pavement shall be installed within the right of way between November 15 and April 1, nor when the temperature is below 40 degrees Farenheit, without the express consent of the Department. No bituminous pavement shall be installed when the underlying course is wet.
- Paving within the right of way shall be as follows:
 - Base (Type) _____ (Thickness) _____
 - Surface Base (Type) _____ (Thickness) _____
 - Finished Surface (Type) _____ (Thickness) _____
- Existing pavement and shoulder material shall be removed to accomodate the above paving specifications.
- The finished surface of all new pavement within the right of way shall be true to the required slope and grade, uniform in density and texture, free of irregularities, and equivalent in riding qualities to the adjacent highway pavement or as determined by the Department of Highways.
- All materials and methods of construction, including base and subgrade preparation, shall be in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- 24 hours notice to the Department is required prior to beginning paving operations.
Phone: _____ Name: _____
- To ensure proper surface drainage, the new pavement shall be flush with the edge of existing highway pavement and shall slope away from the existing edge of the pavement as specified in drawings.
- Existing edge of pavement shall be saw-cut to provide a straight and uniform joint for new pavement. An approved joint sealer, in accordance with Kentucky Department of Highways Standard Specifications (latest edition), shall be applied between new and existing pavements.

VII. SIDEWALKS SPECIFICATIONS *This dimension should be equal to the width of the sidewalk.

A. New Sidewalks

- Sidewalks shall be constructed of Class A concrete (3,500 p.s.i. test), shall be *_____ feet in width, 6 inches in thickness across the bituminous entrance, and 4 inches in thickness across the remaining sections.
- Sidewalks shall have tooled joints not less than 1 inch in depth at four foot intervals*, and 1/2 premolded expansion joints extending entirely through the sidewalk at intervals not to exceed 50 feet.
- All materials and methods of construction, including curing, shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).

B. Existing Sidewalks

- (Applicable if existing sidewalks are being relocated)** Use of the sidewalk shall not be blocked or obstructed, and a usable walkway shall be maintained across the construction area at all times.
- All damaged sections of the sidewalks shall be entirely replaced to match existing sections.

Permit No. 02-2021-00110

VIII. DENSE GRADED SHOULDERS

- Any existing dense-graded aggregate shoulders in the entire frontage within the construction area, which have been disturbed or damaged or on which dirt has been placed or mud has been deposited or tracked, shall be restored to original condition by removal of all contaminated material and replaced to proper grade with new dense-graded aggregate.
- All new aggregate shoulders as specified in the plan shall consist of 5 inches of compacted dense-graded aggregate, 2^{1/2} pounds per square yard of calcium chloride.
- All dense-graded aggregate shoulders shall slope away from the new edge of pavement at the rate of 3/4 inch per foot.

IX. CURBING

A. Bituminous Curbs

- Bituminous concrete curbs shall be given a paint coat of asphalt emulsion.
- The surface under the bituminous concrete curb shall be tacked with asphalt emulsion.
- All bituminous concrete curbs shall be constructed of a Class I bituminous concrete mixture as specified by official Department of Highways specifications.
- All bituminous curbs shall be rolled curb, with a minimum base width of 8 inches and a minimum height of _____ inches. The top of the curb shall be constructed in such a manner as to guarantee a uniform rolled effect throughout the entire run.

B. Concrete Curbs

- All curbs or curb and gutter shall be constructed of Class A concrete (3,500 p.s.i. test) and shall be uniform in height, width, and alignment, true to grade, and satisfactory in finish and appearance as determined by the Department. All materials and methods of construction, including curing, shall be in accordance with Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- All concrete curbs shall be 6 inches in width, extend _____ inches above finished grade and 12 inches below finished grade, with all visible edge rounded to 1/2 inch radii.
- All concrete curbs shall have expansion joints constructed at intervals of not more than 30 feet, and 1/2 inch premolded expansion joint material (cut to conform to the curb or to the curb and gutter section) shall be used in each expansion joint.
- The last _____ feet of all concrete curbs are to be tapered down to finished grade.

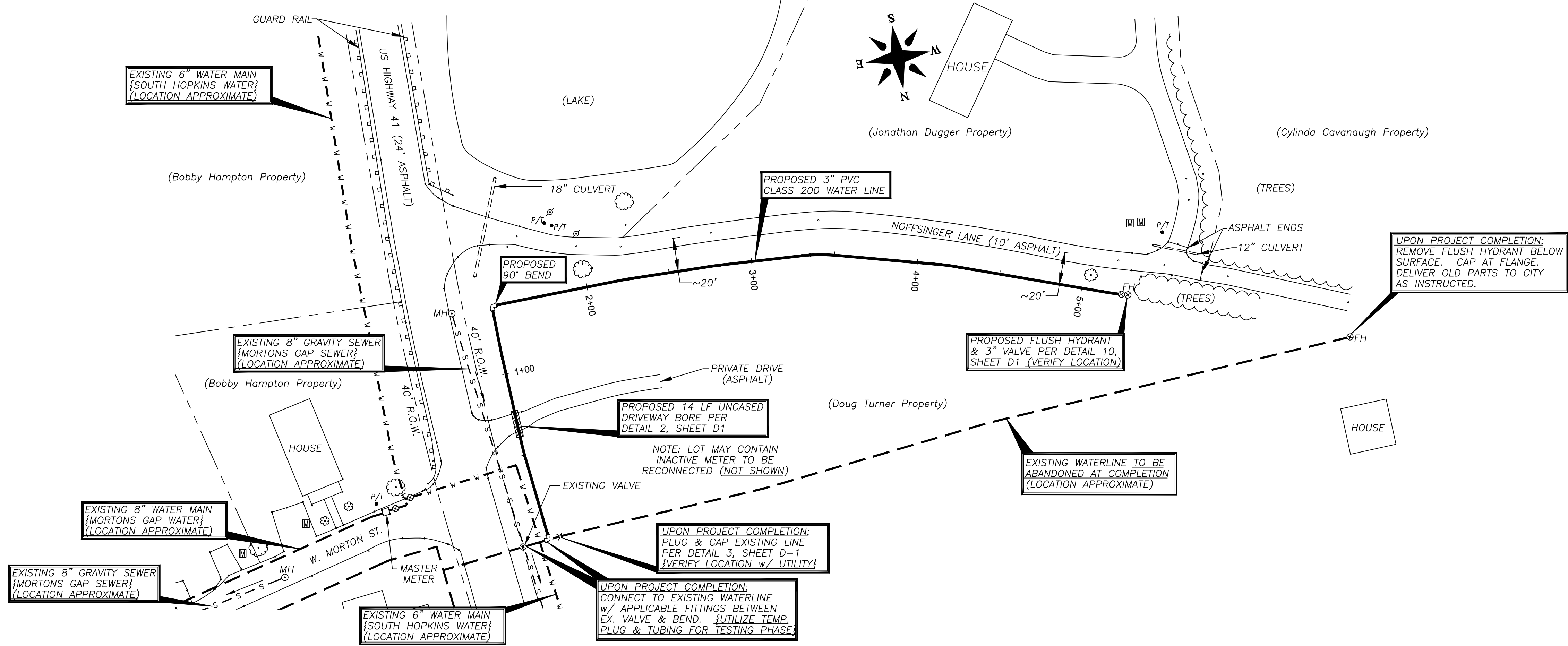
Permit No. 02-2021-00110

X. RIGHT-OF-WAY FENCE REPLACEMENT

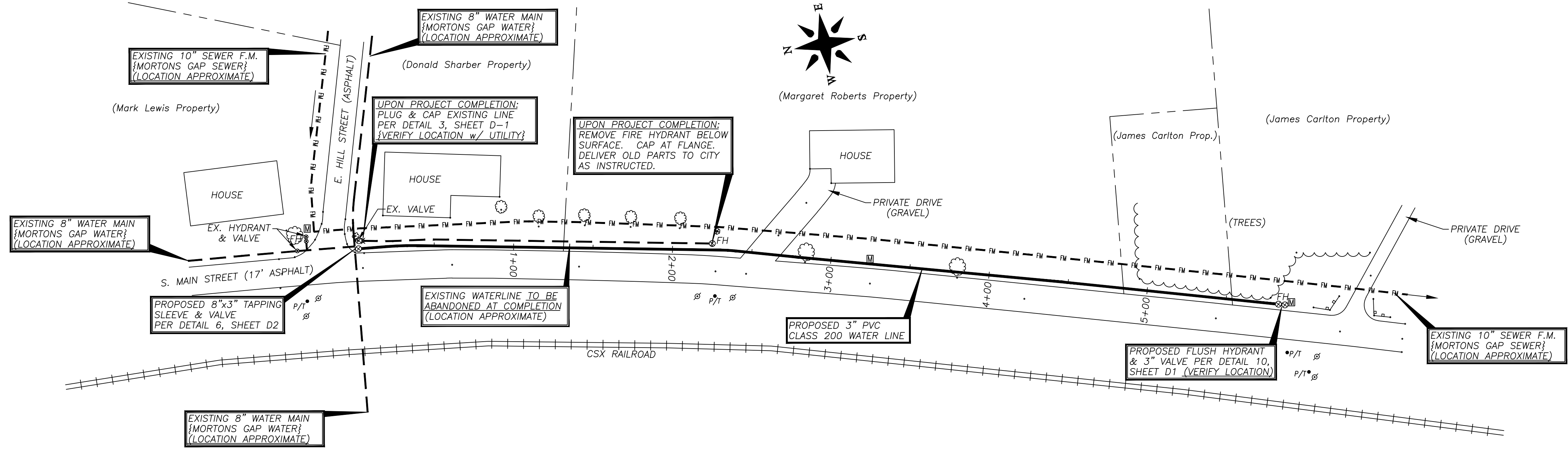
- The replacement fence shall be a height of at least 48 inches and shall be of sufficient density to contain all animals (if applicable).
- The replacement fence shall be a minimum of 1 foot and a maximum of 2 feet outside the right-of-way line.
- The fence materials and design shall meet accepted industry standards and be treated as paintable.
- The permittee shall be required to maintain the fence in a high state of repair.
- The existing fence shall be removed by permittee and stored at the Department's maintenance storage yard for future reuse by the Department.
- The control of access shall not be diminished as a result of replacement of the fence.
- Miscellaneous:

NOTICE TO PERMITTEE

THE PERMITTEE AGREES THAT ALL WORK WITHIN THE EXISTING RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH THE PLANS AS APPROVED AND PERMITTED BY AN ENCROACHMENT PERMIT. ANY CHANGES OR VARIANCES MADE AT THE TIME OF CONSTRUCTION WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF HIGHWAYS SHALL BE REMOVED BY THE PERMITTEE AT NO EXPENSE TO THE DEPARTMENT OF HIGHWAYS AND SHALL BE REDONE BY THE PERMITTEE TO CONFORM WITH THE APPROVED PLANS.



NOFFSINGER LANE - 3" WATER LINE PLAN: STATION 0+00 TO 5+30



S. MAIN STREET - 3" WATER LINE PLAN: STATION 0+00 TO 5+85

GENERAL NOTES:

1. THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN AND ORDERLY AT ALL TIMES. ALL TRASH AND DEBRIS SHALL BE PICKED UP AND REMOVED FROM THE JOB SITE AT THE END OF EACH DAY.
2. DRIVEWAYS OR OTHER ACCESSWAYS REQUIRING EXCAVATION SHALL BE BACKFILLED COMPLETELY WITH GRAVEL AND SHALL BE COMPLETED WITHIN ONE WORKING DAY. IN NO EVENT SHALL SUCH AREAS REMAIN IMPASSABLE OVERNIGHT.
3. CONTRACTOR SHALL COORDINATE WORK ON PRIVATE PROPERTY WITH THE PROPERTY OWNER. DISTURBANCE OF EXISTING FENCES SHALL BE HELD TO A MINIMUM, AND ANY FENCE DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL CONTACT KY. UNDERGROUND PROTECTION, INC. AT (811), AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.
5. THE UTILITY/CITY SHALL BE RESPONSIBLE FOR OBTAINING AND RECORDING ALL EASEMENTS PRIOR TO CONSTRUCTION ON ANY PRIVATE PROPERTIES. CONTRACTOR SHALL VERIFY EASEMENTS AND RIGHT OF ENTRY BEFORE BEGINNING CONSTRUCTION.
6. PRIOR TO OPEN CUTTING AFFECTED CITY STREETS OR STATE ROADWAYS, NOTIFY PROPER AUTHORITIES AS LISTED IN TECHNICAL SPEC 01-100.
7. SCALE IS SHOWN FOR CONVENIENCE ONLY. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS FOR CONSTRUCTION.

WATER NOTES:

1. WATER PIPE SHALL AWWA C-900 PVC & FITTINGS DUCTILE IRON IN ACCORDANCE WITH AWWA C-151/C-110.
2. GATE VALVES SHALL CONFORM TO AWWA C509 AND SHALL HAVE MECHANICAL OR PUSH-ON JOINT ENDS. VALVES SHALL BE RATED FOR 200 PSI WORKING PRESSURE.
3. FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110. CONCRETE FOR THRUST BLOCKING SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2,500-PSI.
4. DETECTOR WIRE SHALL BE 12 GAUGE SOLID COPPER INSULATED WIRE. ATTACH WIRE TO THE TOP OF THE PIPE WITH DUCT TAPE.
5. THE INSTALLED LINE SHALL BE FLUSHED THOROUGHLY, FILLED WITH WATER AND PRESSURIZED TO A DESIGNATED LIMIT FOR 4 HOURS. ANY LEAKAGE OBSERVED SHALL BE REPAIRED AND THE TEST REPEATED UNTIL THE ENGINEER DETERMINES THAT THE LINE IS ACCEPTABLE.
6. PRIOR TO BEING PLACED IN SERVICE, THE LINE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. THE CONTRACTOR SHALL PERFORM BACTERIOLOGICAL TESTING OF THE DISINFECTED LINE AND DELIVER TEST RESULTS INDICATING ACCEPTABLE DISINFECTION TO THE UTILITY.
7. IF DRINKING WATER AND SANITARY OR COMBINED SEWER LINES COME WITHIN TEN FEET OF EACH OTHER HORIZONTALLY, THE WATER LINE SHALL, WHERE PRACTICABLE, BE PLACED AT LEAST TWO FEET HORIZONTALLY AND EIGHTEEN INCHES VERTICALLY AWAY FROM THE SANITARY OR COMBINED SEWER LINE (MEASURED FROM THE OUTSIDE OF THE PIPES) IN SEPARATE TRENCHES OR ON UNDISTURBED EARTH SHELVES WITH THE WATERLINE BEING PLACED ABOVE THE SEWER LINE, WHERE WITHIN 18" VERTICALLY OR 24" HORIZONTALLY, REFER TO DETAIL 9, SHEET D2.

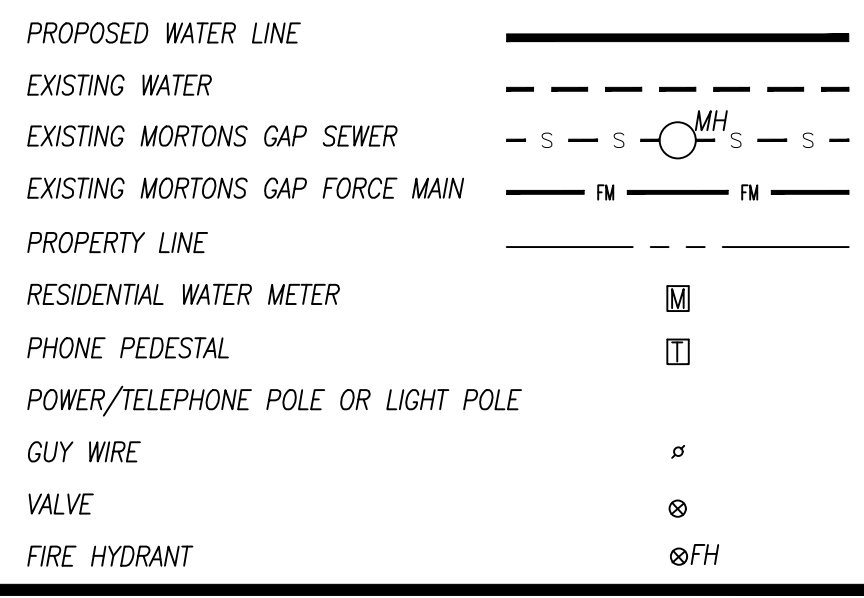
ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. AVOID CUTTING OF, OR DAMAGE TO MATURE TREES (DBH>5"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

BASEMAP & SCALE NOTE:
 THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ASSUME THAT ALL FEATURES ARE IDENTIFIED AND INDICATED IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL CONTACT "KENTUCKY UNDERGROUND PROTECTION, INC.", AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC.. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.

UTILITY CONTACTS

Ky. Underground Protection	811
AT&T	(800) 752-6007
Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND



NO.	REVISION	DATE	BY
1	FOR KDCW REVIEW	02-15-21	CWW
REVISIONS			

MCGHEE ENGINEERING
 202 Ewing Street
 Guthrie, KY 42334
 (270) 483-9985

MORTONS GAP WATER & SEWER
 P.O. Box 367
 Mortons Gap, KY 42440
 (270) 258-5362

FIRM: McGhee
 DES BY: CWW
 DWN BY: CWW
 SCALE: 1" = 40'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING

CHK BY: CWW
 APP BY: CWW

LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Noffsinger Ln. & S. Main St. Waterlines



February 15, 2021

Chris Wilcutt, P.E.

DRAWING NO. SHEET P-1

NOTICE OF COMPLETION OF ENCROACHMENT PERMIT WORK

PERMITTEE

Name: City of Mortons Gap
Contact Person: James Vandiver
Address: P.O. Box 367
City: Mortons Gap
State: Kentucky
Zip: 42440
Telephone: (270) 258-5362

PROJECT IDENTIFICATION

Permit Number: 02-2021-00110

I wish to notify the Department of Highways that the above mentioned permit work and any necessary right-of-way restoration have been completed and are ready for final inspection.

Permittee

Please return this form to the address below when work is completed and ready for final inspection.

Please Return to: Permit Engineer
Department of Highways, District 2 Office
1840 North Main Street
Madisonville, Kentucky 42431
(270) 824-7080
www.transportation.ky.gov/

LOCATION(S)			
Description	County - Route	Latitude	Longitude
Install approximately 160 feet of new waterline on the west side of US 41 at MP 8.45 in Hopkins County on the back side of the ditch.	Hopkins - US 41	37.235533	-87.476021

ANDY BESHEAR
GOVERNOR



REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

STREAM CONSTRUCTION PERMIT

For Construction In Or Along A Stream

Issued to: **Mortons Gap Water Works**
Address: **P.O. Box 367**
Mortons Gap, KY 42440

Permit effective date: **April 29, 2021**
Permit expires on: **April 29, 2022**

Permit No.: **30594**

Agency Interest: **33926**
Activity ID: **APE20210001**

In accordance with KRS 151.250 and KRS 151.260, the Energy and Environment Cabinet approves the application dated **February 19, 2021** for **construction of approximately 6,200 linear feet of waterline including four (4) sub-fluvial crossings of unnamed drainage ditches installed by open cut method and one (1) sub-fluvial crossing of an unnamed tributary to Flat Creek installed by open cut method, with coordinates 37.254494, -87.436417, near the community of Mortons Gap in Hopkins County.**

There shall be no deviation from the plans and specifications submitted and hereby approved unless the proposed change shall first have been submitted to and approved in writing by the Cabinet. This approval is subject to the attached limitations. **Please read these limitations carefully!** If you are unable to adhere to these limitations for any reason, please contact this office prior to construction.

This permit is valid from the standpoint of stream obstruction only. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. Specifically if the project involves work in a stream, such as bank stabilization, dredging, relocation, or in designated wetlands, a 401 Water Quality Certification from the Division of Water will be required.

This permit is nontransferable and all construction must be completed by the expiration date noted above. Year by year extensions may be requested subject to the requirements of 401KAR 4:060 Section 3 (5) (a) and (b). A request for extension, including the Agency Interest and permit numbers listed above and statement that the scope of the project has not changed can be emailed to DOWFloodplain@ky.gov.

Any violation of the Water Resources Act of 1966 as amended is subject to penalties as set forth in KRS 151.990.

If you have any questions regarding this permit, please contact me at 502-782-6891.

Sincerely,

A handwritten signature in black ink, appearing to be "RB" or "Ross Bishop", enclosed in a circle.

Ross Bishop, P.E.
Floodplain Management Section
Water Resources Branch
Division of Water

c: Madisonville Regional Office
Cynthia Young, Hopkins County Floodplain Coordinator
Chris Wilcutt, P.E., McGhee Engineering
File



KentuckyUnbridledSpirit.com

An Equal

FINAL CONSTRUCTION REPORT

NAME: Mortons Gap Water Works

PERMIT NO: 30594

AI NO: 33926 Activity ID: APE20210001

Has all work on this project been completed according to the plans and specifications on file with the Division of Water?

Yes: _____

No: _____ **If no, explain. You may include attachments if necessary.**

eMail Instructions

- Copy and paste the Final construction Report text above and your responses into a blank eMail or
- Enter your name, permit number, AI #, activity # and your project completion date/explanation if not complete into a blank eMail.
- Email to DOWFloodplain@ky.gov with subject line of "FCR"

Mailing Instructions

- Fold the top edge of this page to the top edge of this box.
- Fold the bottom edge of the page up to meet the top fold and tape shut.
- Fill out return address portion
- Affix a stamp and mail.

Place
Stamp
Here

**Floodplain Management Section
Division of Water
300 Sower Boulevard
Frankfort, KY 40601**

Stream Construction Permit

Mortons Gap Water Dept

Facility Requirements

Permit Number: 30594

Activity ID No.:APE20210001

Page 1 of 3

STRC0000000002 (AI 33926 - Mortons Gap Water Dept) construction of approximately 6,200 linear feet of waterline including four (4) sub-fluvial crossings of unnamed drainage ditches installed by open cut method and one (1) sub-fluvial crossing of an unnamed tributary to Flat Creek installed by open cut method, with coordinates 37.254494, -87.436417, near the community of Mortons Gap in Hopkins County:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Mortons Gap Water Works must submit final construction report within 90 days after completion of construction. Mortons Gap Water Works must notify in writing that the project has been completed in accordance with the approved plans and specifications. A Final Construction Report Form is enclosed. [401 KAR 4:060 Section 6]

Narrative Requirements:

Condition No.	Condition
T-1	The issuance of this permit by the cabinet does not convey any property rights of any kind or any exclusive privilege. [KRS 151.250 & 401 KAR 4:060]
T-2	This permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of the proposed construction. The applicant is liable for any damage resulting from the construction, operation, or maintenance of this project. This permit has been issued under the provisions of KRS Chapter 151.250 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. [KRS 151.250]
T-3	A copy of this permit must be available at the construction site. [KRS 151.250]
T-4	Any work performed by or for Mortons Gap Water Works that does not fully conform to the submitted application or drawings and the limitations set forth in this permit, is subject to partial or total removal and enforcement actions pursuant to KRS 151.280 as directed by the Kentucky Department for Environmental Protection. [KRS 151.280]
T-5	Any design changes or amendments to the approved plans must be submitted to the Division of Water and approved in writing prior to implementation. [KRS 151.250]
T-6	Since Hopkins County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Mortons Gap Water Works must contact the local permitting agency for final approval of the construction for compliance with the requirements of the local floodplain ordinance. [401 KAR 4:060 Section 9(c)]

Stream Construction Permit

Mortons Gap Water Dept

Facility Requirements

Permit Number: 30594

Activity ID No.:APE20210001

Page 2 of 3

STRC0000000002 (AI 33926 - Mortons Gap Water Dept) construction of approximately 6,200 linear feet of waterline including four (4) sub-fluvial crossings of unnamed drainage ditches installed by open cut method and one (1) sub-fluvial crossing of an unnamed tributary to Flat Creek installed by open cut method, with coordinates 37.254494, -87.436417, near the community of Mortons Gap in Hopkins County:

Narrative Requirements:

Condition No.	Condition
T-7	The permittee must obtain a Water Quality Certification (or a determination that none is required) through the Division of Water, Water Quality Branch before beginning construction. Contact the Water Quality Certification Supervisor at (502) 564-3410. [KRS 224.16-050 & Clean Water Act Section 401]
T-8	Erosion prevention measures, sediment control measures, and other site management practices shall be designed, installed, and maintained in an effective operating condition to prevent migration of sediment off site. [KRS 224.70-110]
T-9	To avoid secondary adverse impacts, all materials used shall be stable and inert, free from pollutants and floatable objects, and shall meet all appropriate engineering standards. (Inert here means materials that are not chemically reactive and that will not rot or decompose, such as soil, rock, broken concrete or similar materials.). [401 KAR 4:060 Section 7]
T-10	All areas disturbed for pipeline installation within the base floodplain shall be restored as closely as possible to their original ground surface contours upon completion of construction. [401 KAR 4:060]
T-11	All debris and excess material shall be removed for disposal outside of the base floodplain. [401 KAR 4:060]
T-12	Upon completion of construction all disturbed areas shall be seeded and mulched or otherwise stabilized to prevent erosion. [401 KAR 4:060]
T-13	The entry of mobile equipment into the stream channel shall be limited as much as reasonably possible to minimize degradation of the waters of the Commonwealth. [401 KAR 4:060]
T-14	Construction other than as authorized by this permit shall require written approval from the Division of Water. [401 KAR 4:060]
T-15	The existing stream flow shall be maintained at all times during construction using standard flow diversion or pump around methods. Cofferdams or other structures placed in the stream shall be removed immediately if adverse flooding conditions result or if a flooding event is imminent. [401 KAR 4:060 Section 4]

Stream Construction Permit

Mortons Gap Water Dept

Facility Requirements

Permit Number: 30594

Activity ID No.:APE20210001

STRC0000000002 (AI 33926 - Mortons Gap Water Dept) construction of approximately 6,200 linear feet of waterline including four (4) sub-fluvial crossings of unnamed drainage ditches installed by open cut method and one (1) sub-fluvial crossing of an unnamed tributary to Flat Creek installed by open cut method, with coordinates 37.254494, -87.436417, near the community of Mortons Gap in Hopkins County:

Narrative Requirements:

Condition No.	Condition
T-16	Sub-fluvial crossings must meet the following criteria whichever is applicable: (1) During the construction of the crossing, no material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc., unless prior approval has been obtained from the cabinet. (2) The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside of the flood plain unless the applicant has received prior approval from the cabinet to fill within the flood plain. (3) For subfluvial crossings of erodible channels, there shall be at least thirty (30) inches clear to the top of the pipe or conduit at all points. (4) For subfluvial crossings of nonerodible channels, there shall be at least six (6) inches of clear cover above the top of the pipe or conduit at all points, and the pipe or conduit shall be encased on all sides by at least six (6) inches of concrete. (5) The weight of a pipe and its contents during normal operating conditions at all points must exceed that of an equal volume of water, or the applicant must provide the division with sufficient information to show that the pipe and joints have sufficient strength. [401 KAR 4:050 Section 2]



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR PL
LOUISVILLE, KY 40202

March 25, 2021

Regulatory Division
South Branch
ID No. LRL-2021-191-jwr

City of Mortons Gap
c/o: Mr. Chris Phelps
P.O. Box 367
Mortons Gap, Kentucky 42440

Dear Mr. Phelps:

This is in response to your request for authorization to discharge fill material into “Waters of the United States” in association with the proposed replacement and upgrading activities to existing water utility infrastructure located in White Plains, Hopkins County, Kentucky (37.254520°N and -87.436403°W). Proposed activities would consist of water line replacement and upgrades, valve additions, hydrant replacements, and a line extension along White City Road. Installation activities would result in a total of 0.008 acre(s) of temporary impacts to aquatic resources that include one (1) perennial tributary and two (2) intermittent tributaries due to the open-cut trenching installation method of the proposed PVC water line. All impacts are proposed as temporary and would be returned to pre-construction contours upon completion. The information supplied by you 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 includes a discharge dredged or fill material into waters of the United States associated with the construction, maintenance, repair, and removal of utility lines for water and other substances. The project is authorized under the provisions of 33 CFR 330 Nationwide Permit (NWP) No. 58, Utility Line Activities for Water and Other Substances, as published in the Federal Register January 13, 2021. Under the provisions of this authorization you must comply with the enclosed Terms and General Conditions for NWP No. 58.

This project complies with the enclosed General Water Quality Certification (WQC) and Conditions for NWP No. 58 issued by the Kentucky Division of Water (KDOW) on December 18, 2020. You may proceed with the project without further contact or verification from us.

This verification is valid until March 14, 2026. 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 502-315-2643 or jason.w.rhoades@usace.army.mil. Any correspondence on this matter should refer to our ID Number LRL-2021-191-jwr.

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Rhoades', with a stylized flourish at the end.

Jason Rhoades
Regulatory Biologist, South Branch
Regulatory Division

Compliance Certification:

Permit Number: LRL-2021-191-jwr

**Name of Permittee: City of Mortons Gap
P.O. Box 367
Mortons Gap, Kentucky 42440**

Date of Issuance: March 25, 2021

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



ANDY BESHEAR
GOVERNOR

REBECCA W. GOODMAN
SECRETARY

**ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permit (NWP) 2021

NWP 12 – Oil or Natural Gas Pipeline Activities
NWP 57 – Electrical Utility Line and Telecommunications Activities
NWP 58 – Utility Line Activities for Water and Other Substances

This General Certification is issued **December 18, 2020** in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this General Certification and all General Certifications of Nationwide Permits (NWP), the term 'surface water' is defined pursuant to 401 KAR Chapter 10, Section 1(72): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the Commonwealth.

As required by 40 CFR Part 121 – State Certification of Activities Requiring a Federal License or Permit, all conditions include a statement explaining why the condition is necessary to assure that any discharge authorized under the general permit will comply with water quality requirements and a citation to federal, state, or tribal law that authorizes the condition. The statements and citations are included with each condition. The statements are written entirely at the end of the certification under the section *Statements of Necessity*.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

The Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 306 and 307 of the CWA, will not be violated for the activities covered by the above listed Nationwide Permits, provided that the conditions in

General Certification--Nationwide Permit 12, 57, and 58

Page 2

this General Certification are met. Activities that do not meet the conditions of this General Certification require an Individual Section 401 Water Quality Certification.

1. Activities occurring within surface waters assessed by the Kentucky Division of Water as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(1), Section 1(2), & Section 1(3); and 401 KAR 10:031, Section 4(2) & Section 8]
2. Activities impacting surface waters assessed by the Kentucky Division of Water as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat* are not authorized under this General Certification and require an Individual Certification. [Statement B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

*These include waters impaired by the parameter 'habitat assessment', 'combined biota/habitat bioassessment' or any parameter from the parameter group 'habitat alterations, and/or waters where the parameter identified as a cause of impairment has a source from the source group 'habitat impacts'.

3. Activities impacting surface waters assessed by the Kentucky Division of Water as full support for warm water or cold water aquatic habitat are not authorized under this General Certification and require an Individual Certification. [Statements A and B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]
4. The activity will not occur within surface waters identified as perpetually-protected mitigation sites (e.g., deed restriction or conservation easement). [Statement C and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3); and 40 C.F.R. 230.97]
5. Activities with cumulative temporary and permanent impacts greater than 1/2 acre of wetland or 300 linear feet of surface waters are not authorized under this General Certification and require an Individual Certification. This General Certification shall not apply to projects where multiple Nationwide Permits are issued for individual crossings which are part of a single, larger utility projects. Cumulative impacts include utility line crossings, permanent or temporary access roads, headwalls, associated bank stabilization areas, substations, pole or tower foundations, maintenance corridor, and staging areas. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
6. For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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7. Stream impacts under Conditions 5 and 6 of this certification are defined as the length of bank disturbed. For utility line crossings and roads, only one bank length is used in calculation of the totals. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
8. This General Certification is limited to the crossing of surface waters by utility lines. This certification does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
9. Stream relocation, realignment, straightening, and/or widening are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
10. Any crossings must be constructed in a manner that does not impede natural water flow. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
11. Blasting of stream channels, even under dry conditions, is not allowed under this General Certification and require and Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
12. Utility lines trenched parallel to the stream shall be located at least 50 feet from an intermittent or perennial stream, measured from the top of the stream bank. Construction within the 50 foot buffer may be authorized if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
13. Utility line stream crossings shall be constructed by methods that maintain flow and allow for dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to re-entering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the excavation shall not be allowed to enter the flowing portion of the stream. [Statement A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
14. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or stream dimension, pattern or profile. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
15. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. [Statement A and citations KRS 224.70-110, 401 KAR

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10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

16. Clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification. [Statement A and citations 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
17. Surface water impacts covered under this General Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KAWQP). [Statements A and F and citations KRS 224.71-145(1), 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
18. The use of creek rock for bank stabilization; grouted rip-rap; unformed, poured grout; unformed, poured concrete; poured asphalt; or asphalt pieces is not authorized under this General Certification and requires an Individual Certification. Poured concrete or grout will be authorized under this General Certification when contained by tightly sealed forms or cells. Equipment shall not discharge waste washwater into surface waters at any time without adequate wastewater treatments. [Statement A and citations 401 KAR 10:030, Section 1(3)(b) & 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
19. New stormwater detention/ retention basins constructed in surface waters or modifications to stormwater detention/ retention basins resulting in the reduction in reach or that cause impairment of flow of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
20. Erosion and sedimentation pollution control plans and Best Management Practices (BMPs) must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
21. Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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22. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering surface waters. [Statements A and D and citations. [KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
23. Removal of riparian vegetation shall be limited to that necessary for equipment access. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
24. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
25. Heavy equipment (e.g. bulldozers, backhoes, and draglines), if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
26. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
27. If domestic water supply intakes are located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done prior to construction. [Statement E and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
28. Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling (800) 928-2380. [Statement A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
29. The Kentucky Division of Water requires submission of a formal application for any federal applicant that is not required to submit a Preconstruction Notification that would typically be required of any non-federal applicant. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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30. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project that has been determined to likely have a significant adverse effect upon water quality or degrade surface waters so that existing uses of the water body or downstream waters are precluded. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

31. If the final issued General Permit for Nationwide Permit # 12, 57, or 58 changes significantly, the Division of Water may opt to deny certification for this permit. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

Statements of Necessity:

- A. This condition is necessary to protect waters categorized under the anti-degradation policy to protect the designated and existing uses and to maintain the associated water quality criteria necessary to protect these water resources.
- B. This condition is necessary to protect existing uses and the level of water quality necessary to protect those existing uses shall be assured in impaired water.
- C. This condition is necessary for long-term protection of compensatory mitigation sites.
- D. This condition is necessary to provide for the prevention, abatement, and control of all water pollution and to conserve water resources for legitimate uses, safeguard from pollution the uncontaminated waters, prevent the creation of any new pollution, and abate any existing pollution.
- E. This condition is necessary to protect domestic water supply use.
- F. This condition is necessary to evaluate, develop, and improve best-management practices in conservation plans, compliance plans, and forest stewardship management plans; establish statewide and regional agriculture water quality plans; and otherwise promote soil and water conservation activities that protect surface waters from the adverse impacts of agriculture operations within the Commonwealth.

Violation of Kentucky state water quality standards may result in civil penalties and remediation actions.

For assistance contact the Kentucky Division of Water, Water Quality Certification Section by email (401WQC@ky.gov) or by phone (502)-564-3410.



2021 Nationwide Permit Summary

US Army Corps
of Engineers
Louisville District ®

Issued: March 15, 2021

Expires: March 14, 2026

No. 58. Utility Line Activities for Water and Other Substances

(NWP Final Rule, 86 FR 2744)

Activities required for the construction, maintenance, repair, and removal of utility lines for water and other substances, excluding oil, natural gas, products derived from oil or natural gas, and electricity. Oil or natural gas pipeline activities or electric utility line and telecommunications activities may be authorized by NWPs 12 or 57, respectively. This NWP also authorizes associated utility line 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 for water and other substances, 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 that is not oil, natural gas, or petrochemicals. Examples of activities authorized by this NWP include utility lines that convey water, sewage, stormwater, wastewater, brine, irrigation water, and industrial products that are not petrochemicals. 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 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 of dredged or fill material into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for above-ground utility lines: This NWP authorizes the construction or maintenance of foundations for above-ground utility lines in all waters of the United States, provided the foundations are the minimum size necessary.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including 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 of dredged or fill material 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 of dredged or fill material, 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: (1) a section 10 permit is required; or (2) the discharge will result in the loss of greater than 1/10-acre of waters of the United States. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: Where the utility line is constructed, installed, or maintained 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: 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 4: 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 the General Bridge Act of 1946. 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 5: 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 6: For 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)(4) 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).

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification

and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. 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 or her 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. If a bottomless culvert cannot be used, then the crossing should be designed

and constructed to minimize adverse effects to aquatic life movements.

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 NWP 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 Structures and Fills. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. 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 NWP 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. Permittees 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 or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

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 designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). 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 to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, 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 species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include

the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. 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 pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) 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 that the proposed activity will have “no effect” on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference 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 the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an 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 FWS 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 coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA 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 pre-construction notification 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 FWS 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 that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are

necessary or appropriate to reduce adverse effects 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) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places 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 (see 33 CFR 330.4(g)(1)). 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 NWP 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 commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or 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 effects 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, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so 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. 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 permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they 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 a 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 United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 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 by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines 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 environmental effects of the proposed activity are no more than minimal, and provides an activity-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 only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-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 environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-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 only 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. If restoring riparian areas involves planting vegetation, only native species should be planted. 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 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 environment 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.

(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)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(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 (see 33 CFR 332.4(c)(1)(ii)).

(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 NWP activity 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 no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or 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 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 or federal, 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. (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority 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)). If the permittee cannot comply with all of the conditions of

a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. 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 U.S. EPA in its CWA 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 authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot 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.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due

to the NWP 39 and 46 activities cannot exceed 1 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 activity 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 activity 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 review by, or 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 and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (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. The request must specify the

information needed 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 are in the vicinity of the activity, 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 Act (see 33 CFR 330.4(g)) has been completed. 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) (i) 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.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not

change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity 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 and intermittent 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 or 3/100-acre of stream bed 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 species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize

the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require 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. For NWP activities that require pre-construction notification, 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 NWP activity that requires permission from, or review by, 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, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification:* The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. 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 activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) 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 (iii) 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 in tidal waters or the ordinary high water mark in the Great Lakes.

(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, site-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 that 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 pre-construction notifications to expedite agency coordination.

2021 District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they

individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of

waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences 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. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the

NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

2021 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).

2021 Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource

function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other

phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWP, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources

through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of

ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the

purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities:

Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a "water of the United States." If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

CONSTRUCTION PLANS

for the

WATER SYSTEM REHABILITATION & UPGRADE PROJECT

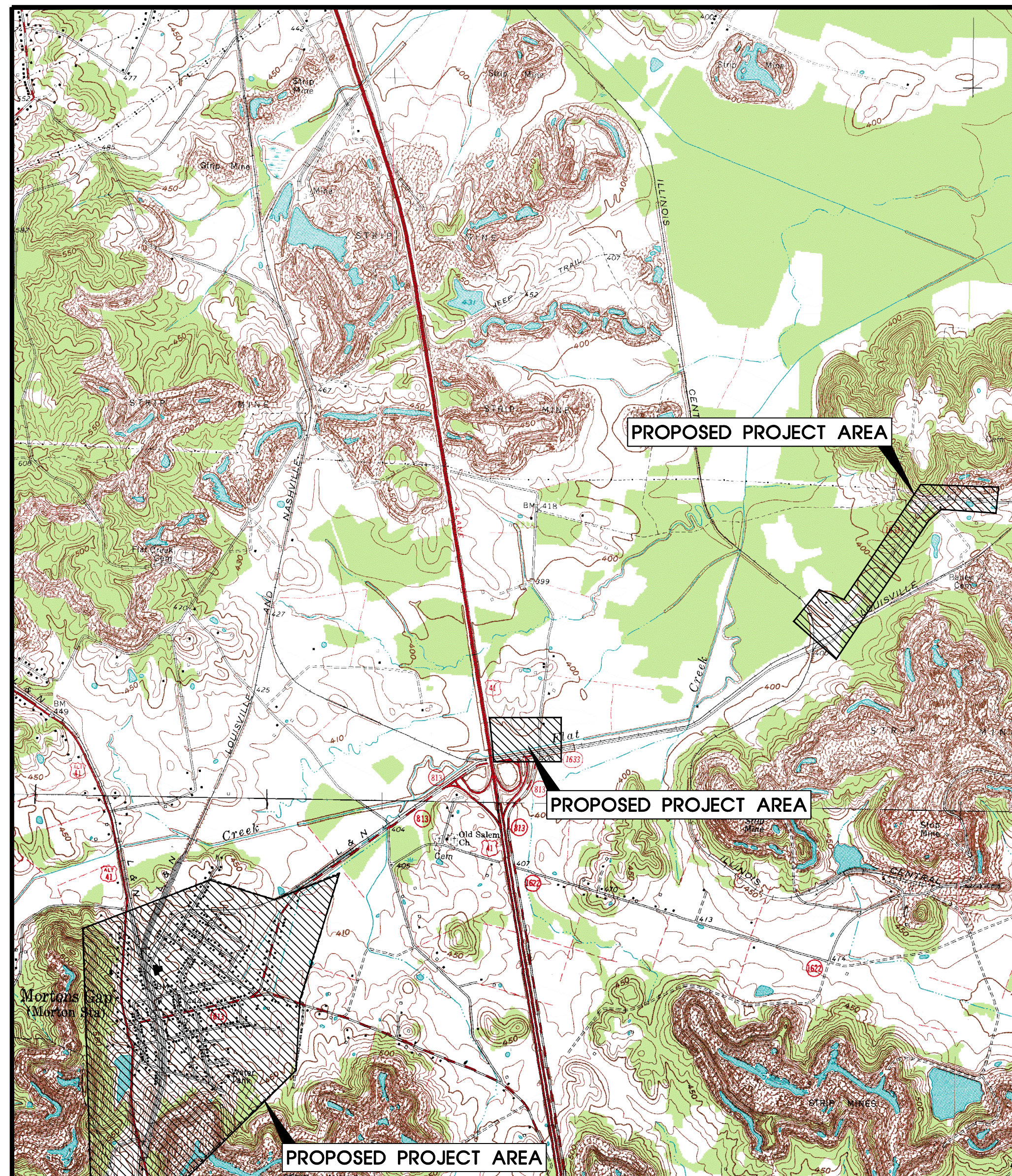
Water Contract #3 - Miscellaneous System-wide Improvements

by the

City of Mortons Gap, Kentucky

Hopkins County, Kentucky

VICINITY MAP



SHEET INDEX

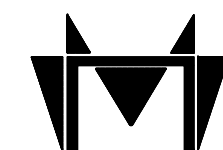
Mayor & City Council

Chris Phelps
Sandra Dupree
Tammy Vandiver
JoBeth Appleby
Wendy Smith
Roger Faulk
Nancy Faulk

Mayor
Councilmember
Councilmember
Councilmember
Councilmember
Councilmember

Guthrie, Kentucky
P.O. Box 125
Guthrie, Kentucky 42234
(270) 483-2511

Engineer



McGhee Engineering, Inc.
202 Ewing St, Box 267
Guthrie, Kentucky 42234
(270) 483-9985

No	Revision	Date	By
1	FOR KDOV REVIEW	02-15-21	CWW

REVISIONS

February 2021

PROJECT INFORMATION

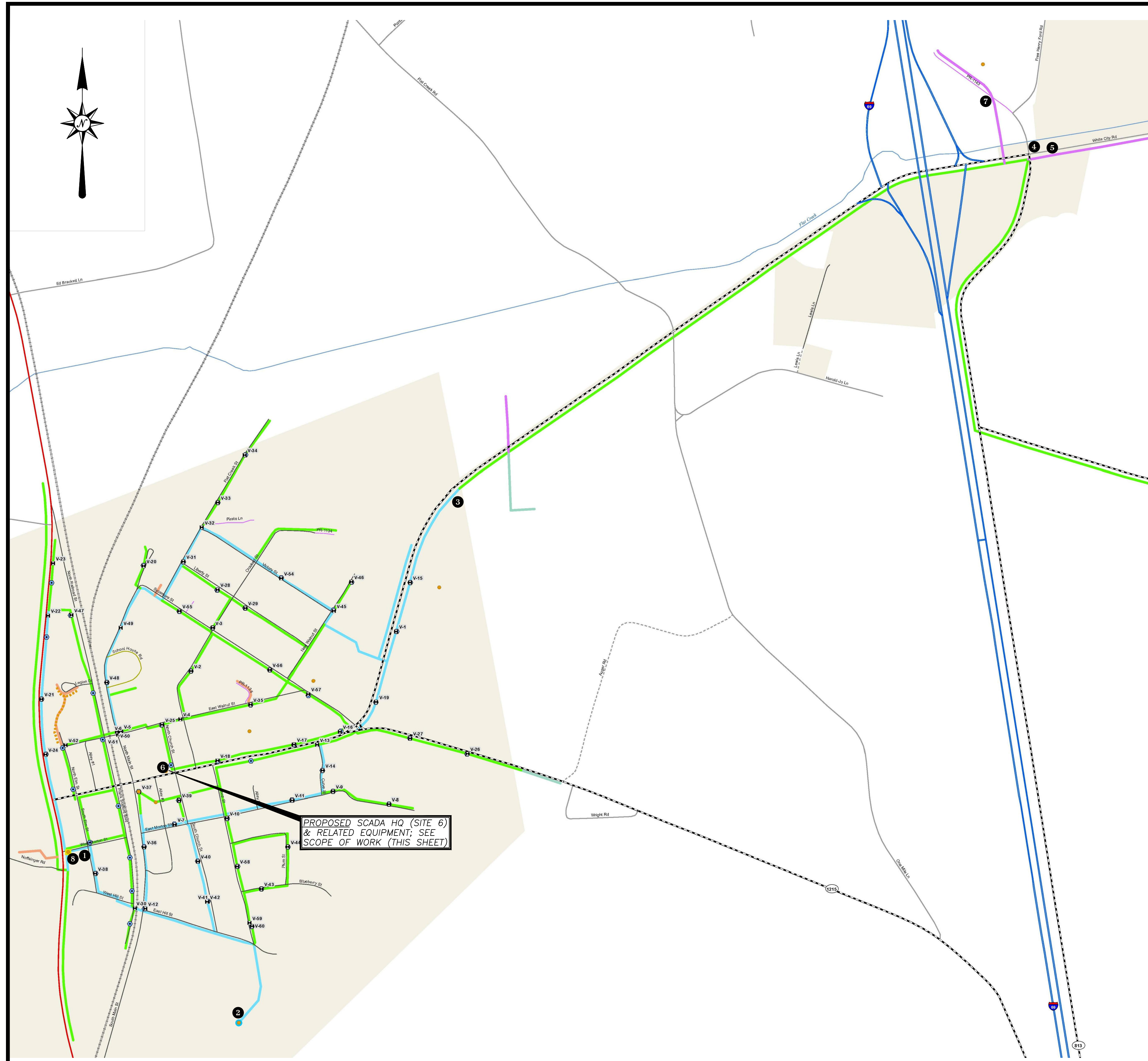
- T-1 Title Sheet
- T-2 SCADA Locations & General Info

WATER LINE PLANS

- P-1 Noffsinger Lane & S. Main Street Waterline Replacement Plans
- P-2 N. Elm Street Waterline & White City Road Creek Crossing Replacement Plans
- P-3 Truck Stop/Hotel Service Line & Church to Shop Street Waterline Plans
- P-4 White City Road Waterline Extension Plan
- P-5 White City Road Waterline Extension Plan
- P-6 Tirey Lane Waterline Extension & 'Free Henry' Master Meter (SCADA) Site Plans
- P-7 'W. Morton/S. Elm' Valve Vault & 'Tank Site' Valve Vault Site Plans (SCADA)
- P-8 'E. Cross Street' Master Meter (SCADA) Site Plan & 'City Hall' SCADA Scope
- P-9 Valve Additions & Hydrant Replacements Location Map

WATER LINE DETAILS

- D-1 Standard Water Line Details
- D-2 Standard Water Line Details
- D-3 SCADA Vault Plans & Details
- D-4 SCADA Vault Plans & Details



- GENERAL NOTES (SITE 6 - 'CITY HALL'):**
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STANDARD ELECTRICAL CODES, LATEST REVISION. ALL WIRING SHALL BE IN NEW CONDUITS.
 - ALL WORK & BUILDING PENETRATIONS SHALL BE COORDINATED WITH THE CITY OF MORTONS GAP PRIOR TO THE START OF WORK AT THIS SITE. ALL WALL CUTS OR WALL PENETRATIONS SHALL BE CAULKED AND WELL SEALED TO PREVENT MOISTURE ENTRY/DAMAGE. ABSOLUTELY NO ROOF PENETRATIONS. ANY REWORK OF THE INSTALLED EQUIPMENT, DUE TO FAILURE TO COORDINATE, SHALL BE AT NO EXPENSE TO THE OWNER.
- SCOPE OF WORK NOTES:**
- PROVIDE (1 EA.) NEW SCADA WORKSTATION COMPUTER (DELL BUSINESS CLASS SCADA PC OR APPROVED EQUAL).
 - PROVIDE (1 EA.) 27 INCH LED-BACKLIT LCD MONITOR
 - PROVIDE (1 EA.) NEW 1500VA UPS WITH AVR FOR SERVER WORKSTATION COMPUTER.
 - PROVIDE (1 EA.) NEW EXTERNAL HARD DRIVE WITH AUTO BACKUP SOFTWARE.
 - PROVIDE (1 EA.) NEW COLOR PRINTER FOR SCADA COMPUTER USE.
 - PROVIDE (1 EA.) ROCKWELL CONNECTED COMPONENTS WORKBENCH-DEVELOPER EDITION.
 - PROVIDE RTU PLC/CONTROLLER INTEGRATION/DEVELOPMENT FOR A WORKING SYSTEM.
 - INCLUDE 10 CHANNEL ALARM UNIT FOR OFFSITE NOTIFICATION OF CRITICAL ALARMS VIA TEXT OR EMAIL ALERT. INCLUDE ONE-YEAR SUBSCRIPTION SERVICE.
 - PROVIDE (1 EA.) NEWEST VERSION OF ROCKWELL FACTORY TALK VIEW SCADA RUNTIME SOFTWARE AND ROCKWELL FACTORY TALK VIEW STUDIO SOFTWARE ON NEW SCADA PC.
 - PROVIDE & INSTALL (1 EA.) NEW RADIO ANTENNA. LOCATE THE NEW FREE-STANDING, TILT-UP 30 FOOT ALUMINUM TOWER NEAR THE EXISTING STANDBY GENERATOR (REAR, LEFT CORNER OF CITY PROPERTY). FIELD VERIFY LOCATION WITH CITY PERSONNEL. INCLUDE RADIO COMMUNICATIONS ANTENNA, COAXIAL CABLE, CONNECTORS, SURGE PROTECTOR, GROUNDING AND RELATED ANCILLARY DEVICES FOR A PROPERLY INSTALLED AND WORKING UNIT.
 - PROVIDE (1 EA.) NEW WALL MOUNT SCADA MASTER TERMINAL UNIT "MTU".
 - FULLY ASSEMBLED HOUSED IN A NEMA 12 ENCLOSURE.
 - MTU TO INCLUDE ALLEN-BRADLEY MICRO850 PLC, LICENSED RADIO UNIT AND REQUIRED ANCILLARY DEVICES FOR A COMPLETE AND WORKING MTU.
 - MTU TO BE UL508A LISTED
 - INSTALL CAT6 CABLE FROM MTU TO SCADA PC (LOCATED IN THE SAME ROOM OR CEILING ACCESS AREA). MTU ENCLOSURE TO BE LOCATED IN THE FILE ROOM, ADJACENT TO THE CITY COUNCIL CHAMBERS.
 - MTU TO INCLUDE INTEGRAL ONE EACH 10-INCH COLOR OPERATOR INTERFACE TERMINAL (OIT). OIT SHALL BE BE ALLEN BRADLEY PANELVIEW 7, PANELVIEW 800 OR PRE-APPROVED EQUAL.
 - PROVIDE SCADA PC INTEGRATION AND DEVELOPMENT FOR HMI/SCADA SOFTWARE FOR A WORKING SYSTEM. HMI TO PROVIDE: MONITORING & CONTROL FUNCTIONS FROM GRAPHICAL INTERFACE FOR ALL REMOTE RTU SITES; LOCAL HMI ALARMS; AND REAL-TIME AND HISTORICAL TRENDDING FOR ANALOG DATA POINTS.
 - PROVIDE INTEROFFICE LAN HARDWARE AND INSTALLATION AS REQUIRED TO CONNECT ALL SCADA COMPUTERS AND MTU VIA ETHERNET IP.
 - CONTRACTOR SHALL PROVIDE FOR THE APPLICATION AND COORDINATION OF A NEW VHF OR UHF FCC LICENSED RADIO FREQUENCY FOR UP TO FIVE (5) FIXED TELEMETRY SITES (4 RTUs + 1 MTU). PLACED IN THE NAME OF THE OWNER. THE LICENSE SHALL ACCOMMODATE APPROPRIATE RADIO POWER OUTPUT, GAIN AND ANTENNA HEIGHTS TO ACCOMMODATE ADEQUATE SYSTEM WIDE COVERAGE AREA WITH A MINIMUM FADE MARGIN OF 25dB. THE LICENSE SHALL BE EFFECTIVE FOR 10 YEARS FROM THE DATE OF FREQUENCY ASSIGNMENT APPROVAL BY THE FCC. THE MASTER UNIT AND ALL REMOTE SITES IMPLEMENTED UNDER THIS PROJECT SHALL BE INCLUDED. ALL FEES AND ADMINISTRATION SHALL BE PROVIDED BY THE CONTRACTOR. A ONE YEAR CONSTRUCTION NOTICE FEE FOR ALL SITES SHALL BE INCLUDED.
 - THE BIDDER/CONTRACTOR SHALL PERFORM A COMPUTER-GENERATED RADIO PATH ANALYSIS PRIOR TO THE BID. THE PATH ANALYSIS SHALL INCLUDE ALL PROPOSED SITES USING ACTUAL SITE COORDINATES AND ELEVATIONS. ON SITE PHYSICAL RADIO PATH TESTING WITH RADIO EQUIPMENT SIMILAR TO THE EQUIPMENT SPECIFIED IN THE CONTRACT DOCUMENTS MAY BE USED IN LIEU OF A COMPUTER-GENERATED RF PATH STUDY. THE PATH STUDY METHOD AND RESULTS MUST BE PROVIDED WITH THE BID DOCUMENTS & PROVIDE PROJECTED FADE MARGINS FOR ALL RF PATH LINKS BETWEEN SITES.
 - REMOTE ACCESS TO (1 EA.) WATER OFFICE SCADA COMPUTER AND ALL HMI SCREENS FOR MONITORING AND CONTROL SHALL BE AVAILABLE REMOTELY VIA THE INTERNET BY THE OWNER. REMOTE ACCESS SHALL UTILIZE THE OWNERS EXISTING WATER OFFICE INTERNET CONNECTION AND A SECURE REMOTE CONNECTION USING ANY STANDARD INTERNET BROWSER CONNECTED PERSONAL COMPUTER, ANDROID OR IPHONE DEVICE. THE REMOTE CONNECTION SOFTWARE SHALL UTILIZE A SECURE CONNECTION VIA SSL/TLS SECURITY AUTHENTICATION. AUDITING AND LOGGING OF USER CONNECTIONS SHALL BE INTEGRAL TO THE REMOTE ACCESS SOFTWARE. THE REMOTE ACCESS SOFTWARE SHALL ALLOW ONE ACTIVE USER CONNECTION PER SESSION. UPON LOGIN TO THE SCADA PC VIA THE REMOTE CONNECTIONS SOFTWARE, THE USER MUST ALSO HAVE TO LOG IN USING A WINDOWS USERNAME AND PASSWORD. THE SYSTEMS INTEGRATOR SHALL SETUP THE REMOTE CONNECTION AND WINDOWS LOGIN CREDENTIALS USING GOOD INDUSTRY PRACTICES FOR SECURE CONNECTIONS. A ONE-YEAR SUBSCRIPTION TO THE REMOTE ACCESS SOFTWARE SHALL BE INCLUDED IN THE BID. THE REMOTE CONNECTION SOFTWARE/SERVICE SHALL BE LOGMEIN.COM PRO OR APPROVED EQUAL.
 - PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE FEATURES. AVOID CUTTING OF, OR DAMAGE TO MATURE TREES (DBH>5"), AND TREES NOT IN THE CONSTRUCTION AREA. MATURE TREES MAY ONLY BE REMOVED DURING THE PERIOD BETWEEN OCTOBER 15TH AND MARCH 31ST, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

BASEMAP & SCALE NOTE:
 THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ASSUME THAT ALL FEATURES ARE IDENTIFIED AND INDICATED IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL CONTACT 'KENTUCKY UNDERGROUND PROTECTION, INC.', AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC.. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.

GENERAL NOTES:

- PIPE SHALL BE CLASS 350 DUCTILE IRON PIPE WITH RESTRAINED FITTINGS.
- GATE VALVES SHALL CONFORM TO AWWA C509 AND SHALL HAVE MECHANICAL OR PUSH-ON JOINT ENDS. VALVES SHALL BE RATED FOR 200 PSI WORKING PRESSURE.
- FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110. CONCRETE FOR THRUST BLOCKING SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
- DETECTOR WIRE SHALL BE 12 GAUGE SOLID COPPER INSULATED WIRE. ATTACH WIRE TO THE TOP OF THE PIPE WITH DUCT TAPE.
- THE INSTALLED LINE SHALL BE FLUSHED THOROUGHLY, FILLED WITH WATER AND PRESSURIZED TO 200 PSIG FOR 4 HOURS. ANY LEAKAGE OBSERVED SHALL BE REPAIRED AND THE TEST REPEATED UNTIL THE ENGINEER DETERMINES THAT THE LINE IS ACCEPTABLE.
- PRIOR TO BEING PLACED IN SERVICE, THE LINE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. THE CONTRACTOR SHALL PERFORM BACTERIOLOGICAL TESTING OF THE DISINFECTED LINE AND DELIVER TEST RESULTS INDICATING ACCEPTABLE DISINFECTION TO THE WATER UTILITY.
- THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN AND ORDERLY AT ALL TIMES. ALL TRASH AND DEBRIS SHALL BE PICKED UP AND REMOVED FROM THE JOB SITE AT THE END OF EACH DAY.
- CONTRACTOR SHALL COORDINATE WORK ON PRIVATE PROPERTY WITH THE PROPERTY OWNER, DISTURBANCE OF EXISTING FENCES SHALL BE HELD TO A MINIMUM, AND ANY FENCE DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL CONTACT KY. UNDERGROUND PROTECTION, INC. AT (811), AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.
- THE WATER UTILITY SHALL BE RESPONSIBLE FOR OBTAINING AND RECORDING NEW EASEMENTS PRIOR TO CONSTRUCTION ON ANY PRIVATE PROPERTIES. CONTRACTOR SHALL VERIFY EASEMENTS AND RIGHT OF ENTRY BEFORE BEGINNING CONSTRUCTION.
- CONTRACTOR TO FIELD VERIFY EXISTING PIPING LAYOUT AND SIZES PRIOR TO CONSTRUCTION.
- ALL DISTURBED AREAS CREATED BY REMOVAL OF EQUIPMENT OR INSTALLATION OF NEW EQUIPMENT SHALL BE PATCHED OR GRADED & SEEDED TO MATCH CONDITIONS PRIOR TO CONSTRUCTION.

UTILITY CONTACTS

Ky. Underground Protection	811
AT&T	(800) 752-6007
Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

MORTONS GAP MASTER METER SITES & POINTS OF REFERENCE

Map ID	MASTER METER NAME	LOCATION BY ROADWAY	LATITUDE	LONGITUDE	Meter Type & Brand	Provide New Meter? Y/N	Provide New RTU? Y/N	New Precast Vault Req'd? Y/N	Power Source & Notes
1	Master Control Valve & Meter	113 S. Elm Street @ Morton Street	37.235689°N	87.475354°W	6" Mag (ABB)	Y	Y (#1)	Y	New AC Service Req'd for RTU
2	Mortons Gap Tank Meter	Tank near Hill Street	37.231569°N	87.470618°W	8" Mag (ABB)	Y	Y (#2)	N	Hard Wired to Ex. Tank Service
3	East Cross Street @ Lift Station	258 White City Road	37.243870°N	87.464522°W	6" Turbo (Sensus)	Y	Y (#3)	Y	Hard Wired to Ex. Pump Service
4	Free Henry Ford Road Meter	Intersection of Free Henry & White City	37.253236°N	87.446662°W	3" Turbo (Sensus)	N	Y (#4)	N	New AC Service Req'd for RTU
5	White City Road Meter	Intersection of Free Henry & White City	37.253166°N	87.445851°W	3" E-Mag (Kamstrup)	N	N	N	In tandem with #4 RTU; hard wired

OTHER POINTS OF REFERENCE

Map ID	METER NAME	LOCATION BY ROADWAY	LATITUDE	LONGITUDE
1	City Hall - (New MTU)	131 Cross Street	37.237662°N	87.472920°W
2	Truck Stop Master Meter	95 Free Henry Ford Road	37.254131°N	87.448369°W
3	South Hopkins Master Meter	102 Morton Street @ Hopkinsville Rd.	37.235580°N	87.475942°W

NO.	REVISION	DATE	BY
1	FOR RDOV REVIEW	02-15-21	CWV
2			

McGHEE ENGINEERING
 202 Ewing Street
 Guthrie, KY 42234
 (270) 483-9885

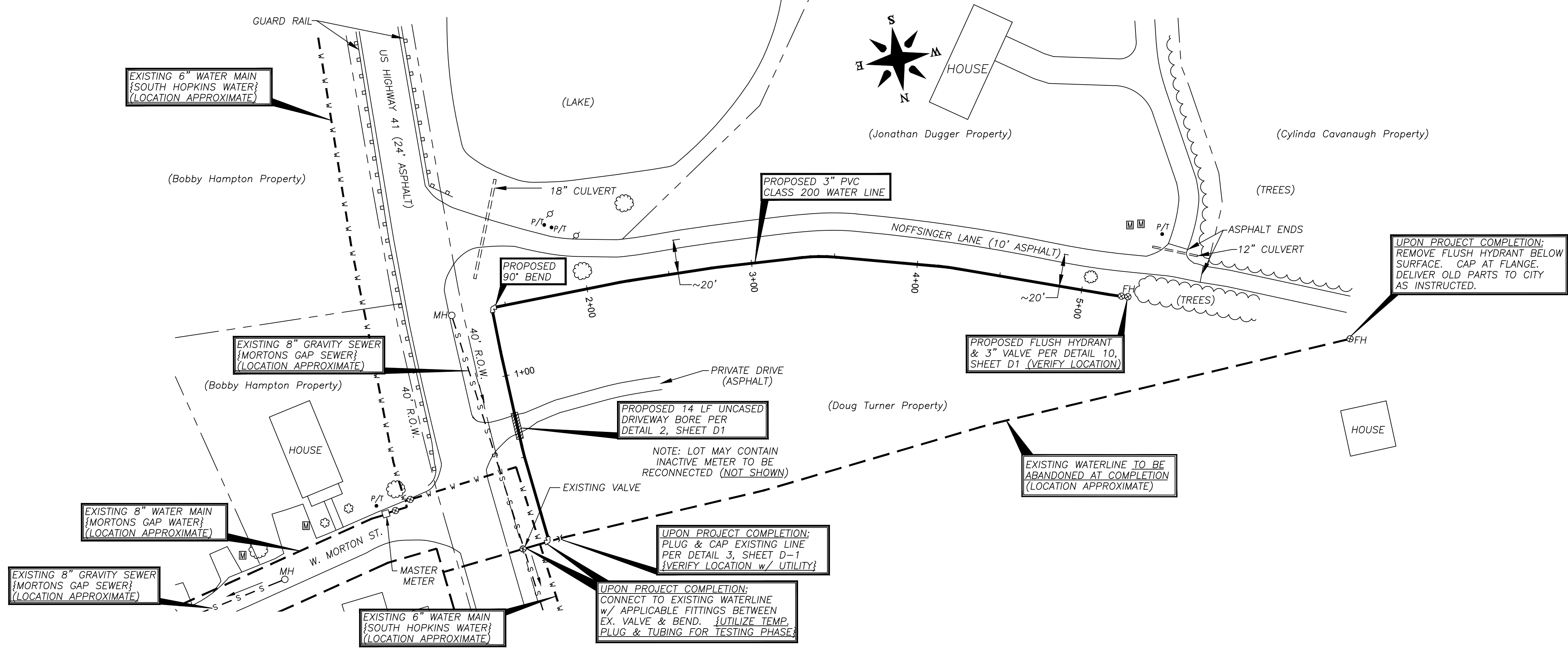
MORTONS GAP WATER & SEWER
 P.O. Box 367
 Mortons Gap, KY 42440
 (270) 258-5362

FIRM: McGhee
 DES BY: CWV
 DWN BY: CWV
 SCALE: NONE
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING
 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

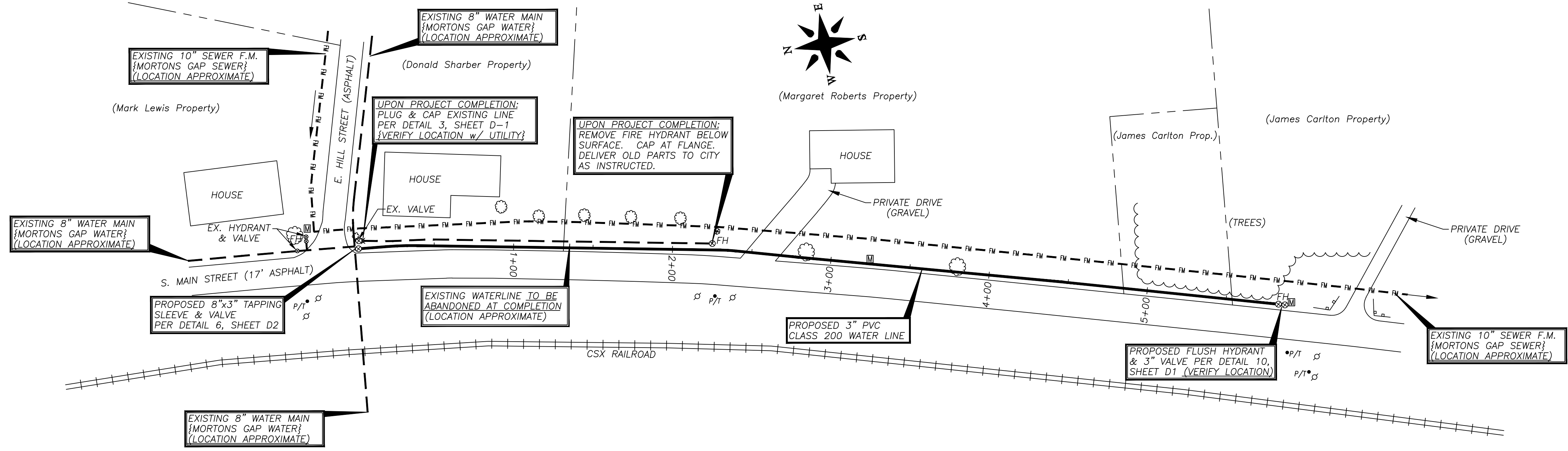
City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 SCADA Site Locations & General Info



February 15, 2021
 Chris Wilcutt, P.E.
 Chris Wilcutt, P.E.



NOFFSINGER LANE - 3" WATER LINE PLAN: STATION 0+00 TO 5+30



S. MAIN STREET - 3" WATER LINE PLAN: STATION 0+00 TO 5+85

GENERAL NOTES:

1. THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN AND ORDERLY AT ALL TIMES. ALL TRASH AND DEBRIS SHALL BE PICKED UP AND REMOVED FROM THE JOB SITE AT THE END OF EACH DAY.
2. DRIVEWAYS OR OTHER ACCESSWAYS REQUIRING EXCAVATION SHALL BE BACKFILLED COMPLETELY WITH GRAVEL AND SHALL BE COMPLETED WITHIN ONE WORKING DAY. IN NO EVENT SHALL SUCH AREAS REMAIN IMPASSABLE OVERNIGHT.
3. CONTRACTOR SHALL COORDINATE WORK ON PRIVATE PROPERTY WITH THE PROPERTY OWNER. DISTURBANCE OF EXISTING FENCES SHALL BE HELD TO A MINIMUM, AND ANY FENCE DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR SHALL CONTACT KY. UNDERGROUND PROTECTION, INC. AT (811), AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.
5. THE UTILITY/CITY SHALL BE RESPONSIBLE FOR OBTAINING AND RECORDING ALL EASEMENTS PRIOR TO CONSTRUCTION ON ANY PRIVATE PROPERTIES. CONTRACTOR SHALL VERIFY EASEMENTS AND RIGHT OF ENTRY BEFORE BEGINNING CONSTRUCTION.
6. PRIOR TO OPEN CUTTING AFFECTED CITY STREETS OR STATE ROADWAYS, NOTIFY PROPER AUTHORITIES AS LISTED IN TECHNICAL SPEC 01-100.
7. SCALE IS SHOWN FOR CONVENIENCE ONLY. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS FOR CONSTRUCTION.

WATER NOTES:

1. WATER PIPE SHALL AWWA C-900 PVC & FITTINGS DUCTILE IRON IN ACCORDANCE WITH AWWA C-151/C-110.
2. GATE VALVES SHALL CONFORM TO AWWA C509 AND SHALL HAVE MECHANICAL OR PUSH-ON JOINT ENDS. VALVES SHALL BE RATED FOR 200 PSI WORKING PRESSURE.
3. FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110. CONCRETE FOR THRUST BLOCKING SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2,500-PSI.
4. DETECTOR WIRE SHALL BE 12 GAUGE SOLID COPPER INSULATED WIRE. ATTACH WIRE TO THE TOP OF THE PIPE WITH DUCT TAPE.
5. THE INSTALLED LINE SHALL BE FLUSHED THOROUGHLY, FILLED WITH WATER AND PRESSURIZED TO A DESIGNATED LIMIT FOR 4 HOURS. ANY LEAKAGE OBSERVED SHALL BE REPAIRED AND THE TEST REPEATED UNTIL THE ENGINEER DETERMINES THAT THE LINE IS ACCEPTABLE.
6. PRIOR TO BEING PLACED IN SERVICE, THE LINE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. THE CONTRACTOR SHALL PERFORM BACTERIOLOGICAL TESTING OF THE DISINFECTED LINE AND DELIVER TEST RESULTS INDICATING ACCEPTABLE DISINFECTION TO THE UTILITY.
7. IF DRINKING WATER AND SANITARY OR COMBINED SEWER LINES COME WITHIN TEN FEET OF EACH OTHER HORIZONTALLY, THE WATER LINE SHALL, WHERE PRACTICABLE, BE PLACED AT LEAST TWO FEET HORIZONTALLY AND EIGHTEEN INCHES VERTICALLY AWAY FROM THE SANITARY OR COMBINED SEWER LINE (MEASURED FROM THE OUTSIDE OF THE PIPES) IN SEPARATE TRENCHES OR ON UNDISTURBED EARTH SHELVES WITH THE WATERLINE BEING PLACED ABOVE THE SEWER LINE, WHERE WITHIN 18" VERTICALLY OR 24" HORIZONTALLY, REFER TO DETAIL 9, SHEET D2.

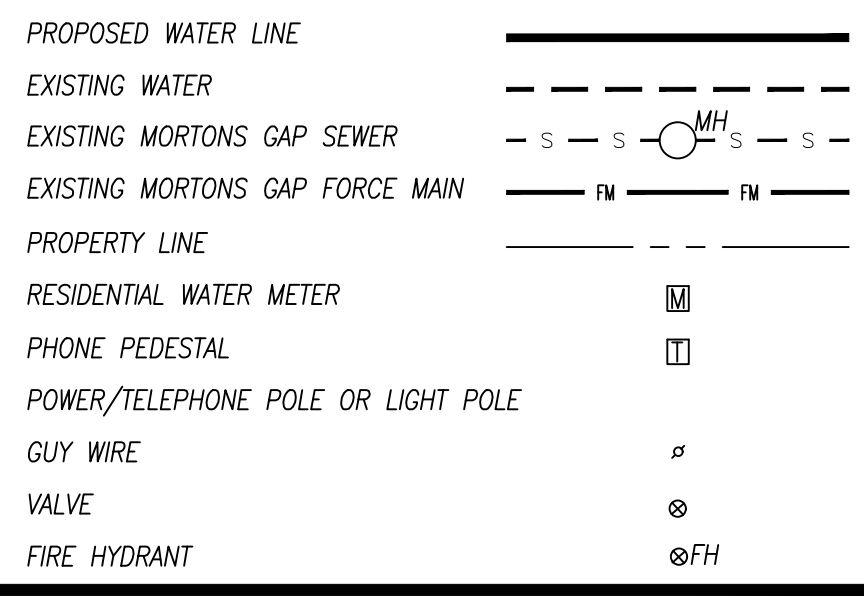
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UTILITY CONTACTS

Ky. Underground Protection	811
AT&T	(800) 752-6007
Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND



NO.	REVISION	DATE	BY
1	FOR KDCW REVIEW	02-15-21	CWW
REVISIONS			

MCGHEE ENGINEERING
 202 Ewing Street
 Guthrie, KY 42334
 (270) 483-9985

MORTONS GAP WATER & SEWER
 P.O. Box 367
 Mortons Gap, KY 42440
 (270) 258-5362

FIRM: McGhee
 DES BY: CWW
 DWN BY: CWW
 SCALE: 1" = 40'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING

CHK BY: CWW
 APP BY: CWW

LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

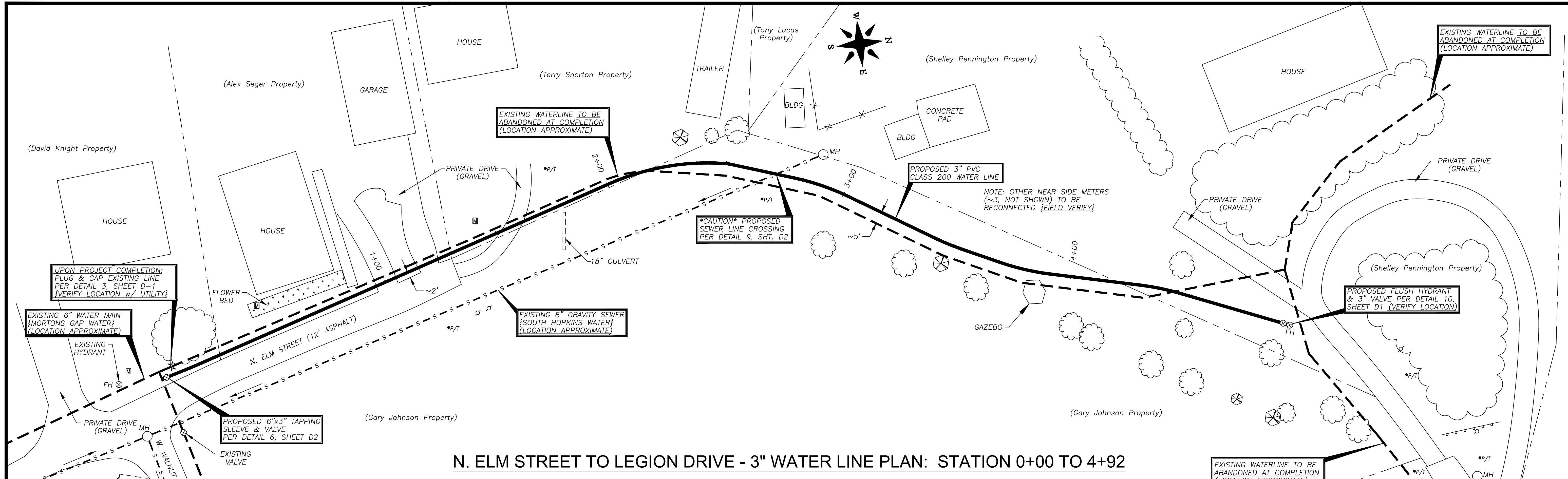
City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Noffsinger Ln. & S. Main St. Waterlines



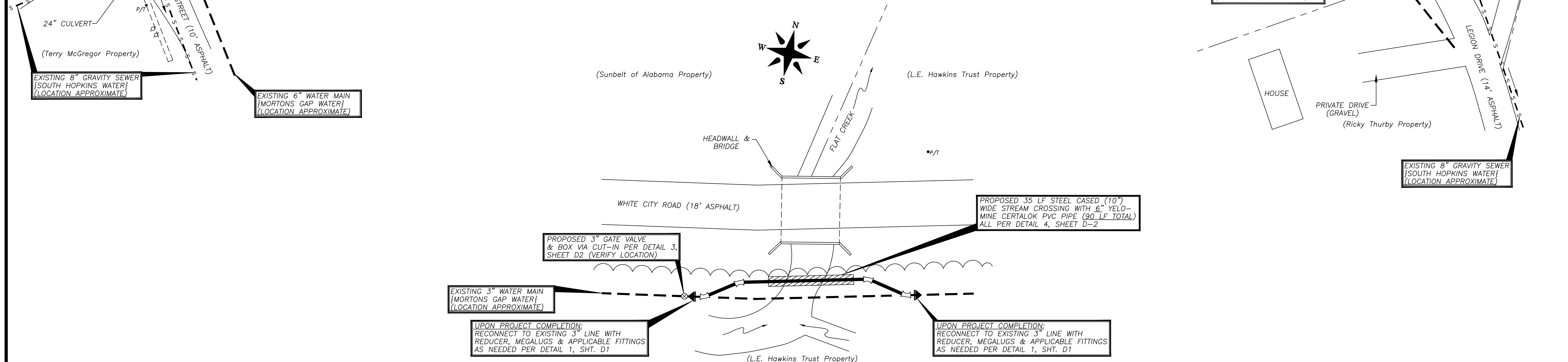
February 15, 2021

Chris Wilcutt, P.E.

DRAWING NO. SHEET P-1



N. ELM STREET TO LEGION DRIVE - 3" WATER LINE PLAN: STATION 0+00 TO 4+92



WHITE CITY ROAD - 3" CREEK CROSSING REPLACEMENT

ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. AVOID CUTTING OF, OR DAMAGE TO MATURE TREES (DBH>5"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

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Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND

PROPOSED WATER LINE	---
EXISTING WATER	---
EXISTING MORTONS GAP SEWER	- - - - - MH - - - - -
EXISTING MORTONS GAP FORCE MAIN	— FW — FW —
PROPERTY LINE	---
RESIDENTIAL WATER METER	⊞
PHONE PEDESTAL	⊞
POWER/TELEPHONE POLE OR LIGHT POLE	⊞
GUY WIRE	—
VALVE	⊙
FIRE HYDRANT	⊙FH

NO.	REVISION	DATE	BY
1	FOR RDCW REVIEW	02-15-21	CWW
REVISIONS			

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MORTONS GAP WATER & SEWER
 202 Ewing Street
 Guthrie, KY 42334
 (270) 483-9985

P.O. Box 367
 Mortons Gap, KY 42440
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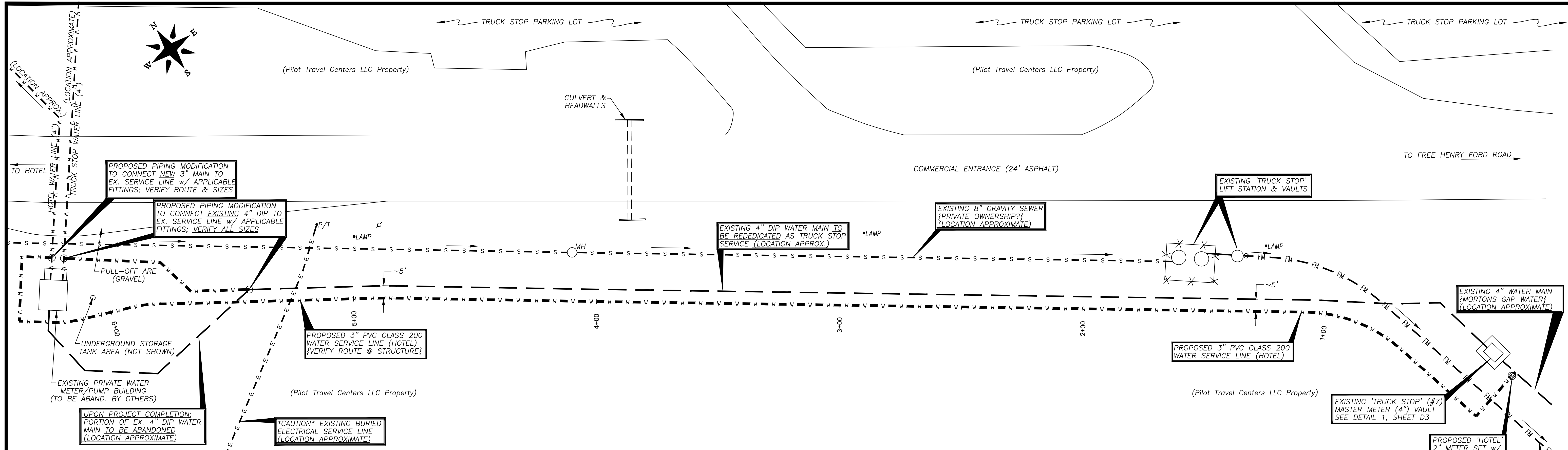
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City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Elm to Legion & White City Road Creek

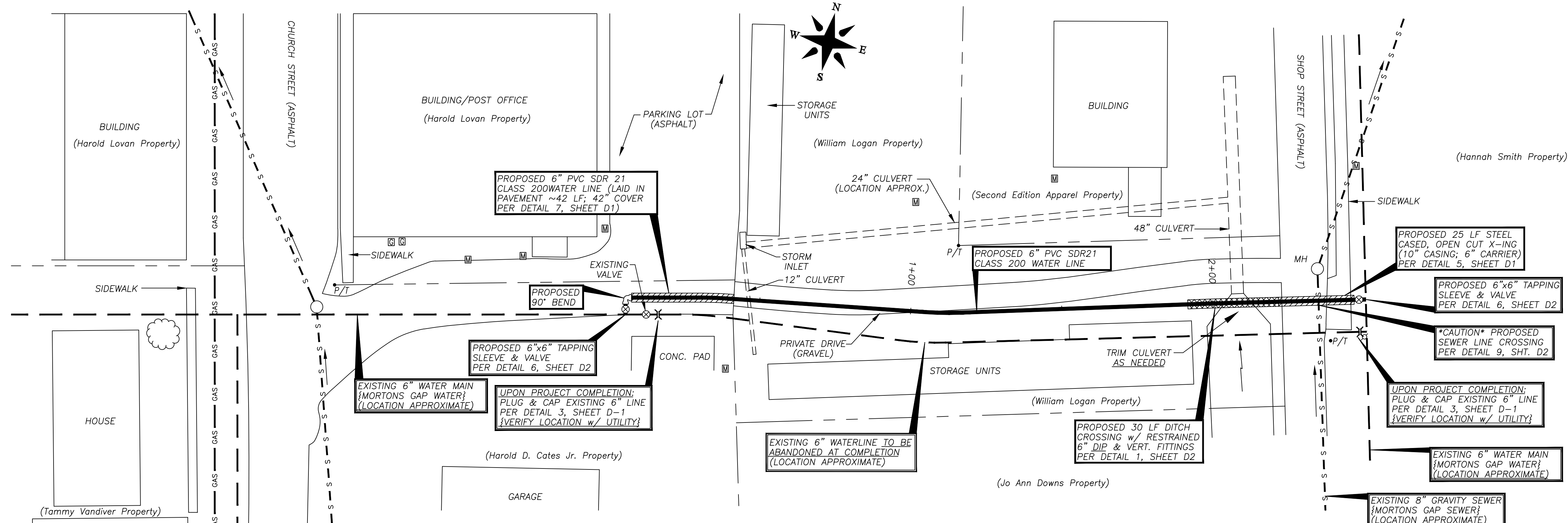


February 15, 2021

Chris Wilcutt
 21665
 Chris Wilcutt, P.E.



TRUCK STOP & HOTEL SERVICE MODIFICATIONS - WATER SERVICE LINE PLAN: STATION 0+00 TO 6+80



CHURCH STREET TO SHOP STREET - 6" WATER LINE PLAN: STATION 0+00 TO 2+60

ENVIRONMENTAL NOTE:
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Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND

PROPOSED WATER LINE	---
EXISTING WATER	---
EXISTING MORTONS GAP SEWER	---
EXISTING MORTONS GAP FORCE MAIN	---
PROPERTY LINE	---
RESIDENTIAL WATER METER	⊞
PHONE PEDESTAL	⊞
POWER/TELEPHONE POLE OR LIGHT POLE	⊞
GUY WIRE	⊞
VALVE	⊞
FIRE HYDRANT	⊞FH

NO.	REVISION	DATE	BY
1	FOR RDCW REVIEW	02-15-21	CWW
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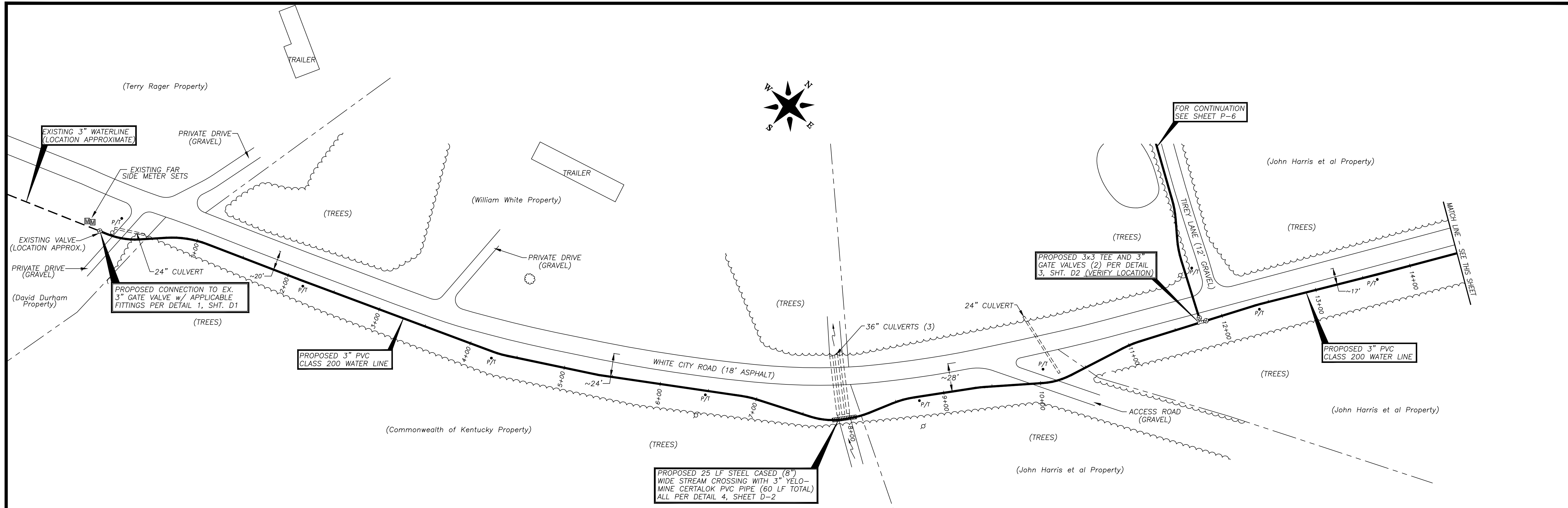
McGHEE ENGINEERING
 MORTONS GAP WATER & SEWER
 202 Ewing Street
 Guthrie, KY 42234
 (270) 483-9985

FIRM: McGhee
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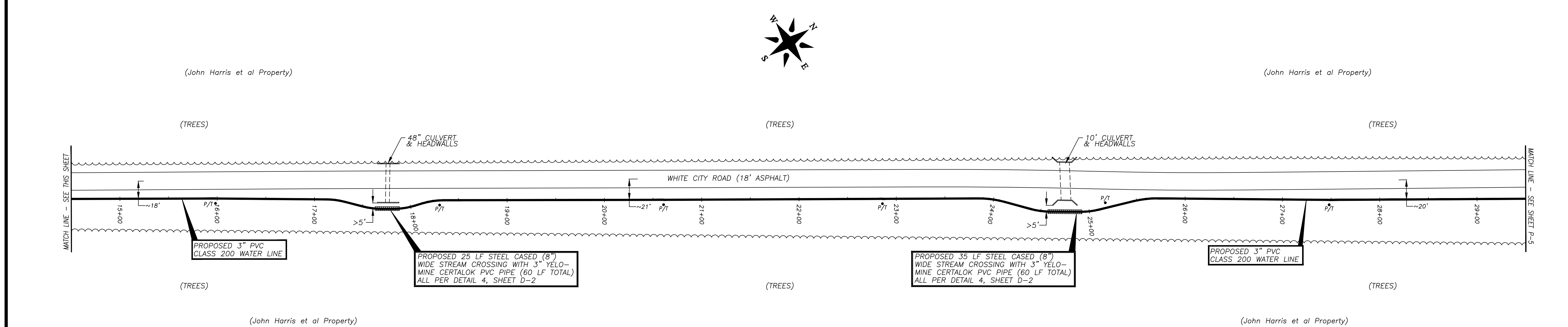
City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Church to Shop Street & Truck Stop Update



February 15, 2021
 Chris Whitcutt
 Chris Whitcutt, P.E.
 DRAWING NO.
 SHEET P-3



WHITE CITY ROAD - 3" WATER LINE PLAN: STATION 0+00 TO 14+50



WHITE CITY ROAD - 3" WATER LINE PLAN: STATION 14+50 TO 29+50

ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. AVOID CUTTING OF, OR DAMAGE TO MATURE TREES (DBH>5"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

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Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Morton's Gap	(270) 258-5362

LEGEND

PROPOSED WATER LINE	---
EXISTING WATER	---
EXISTING MORTONS GAP SEWER	---MH---
EXISTING MORTONS GAP FORCE MAIN	---FM---
PROPERTY LINE	---
RESIDENTIAL WATER METER	WM
PHONE PEDESTAL	□
POWER/TELEPHONE POLE OR LIGHT POLE	⊞
GUY WIRE	≡
VALVE	⊙
FIRE HYDRANT	⊙FH

FOR KOCW REVIEW	02-15-21	CWV
Revision	Date	By
NO		
REVISIONS		

McGHEE ENGINEERING
 202 Ewing Street
 Guthrie, KY 42334
 (270) 483-9985

MORTONS GAP WATER & SEWER
 P.O. Box 387
 Morton's Gap, KY 42440
 (270) 258-5362

FIRM: McGhee
 DES BY: CWV
 DWN BY: CWV
 SCALE: 1" = 50'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING

CHK BY: CWV
 APP BY: CWV

LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

City of Morton's Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 White City Road Waterline Plan



February 15, 2021

Chris Wilcutt, P.E.
 Chris Wilcutt, P.E.

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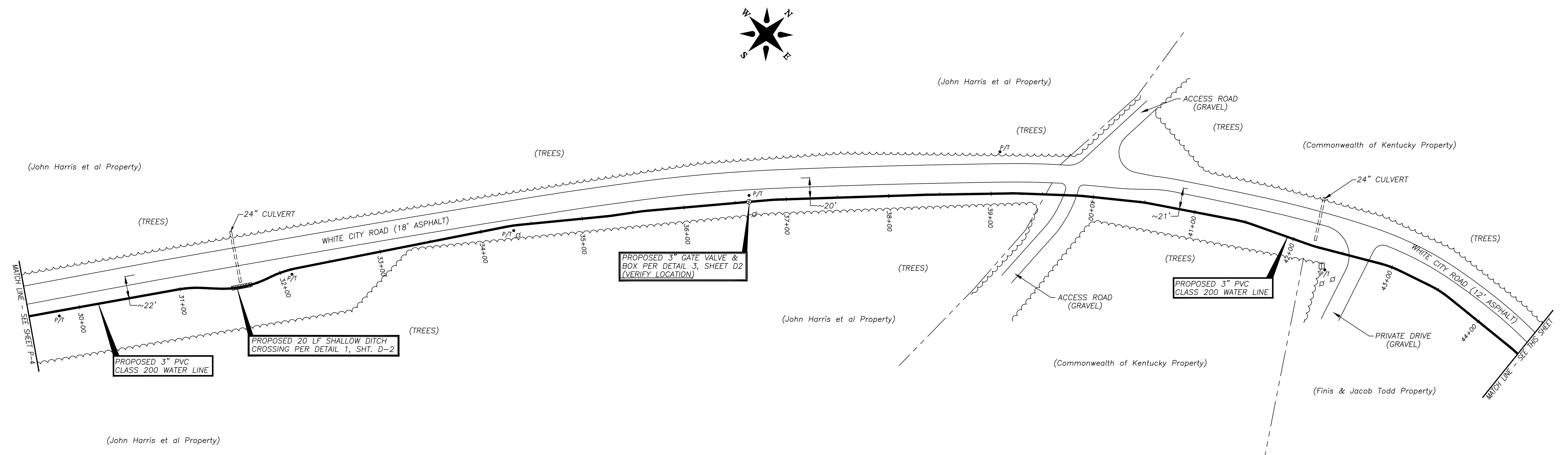
City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
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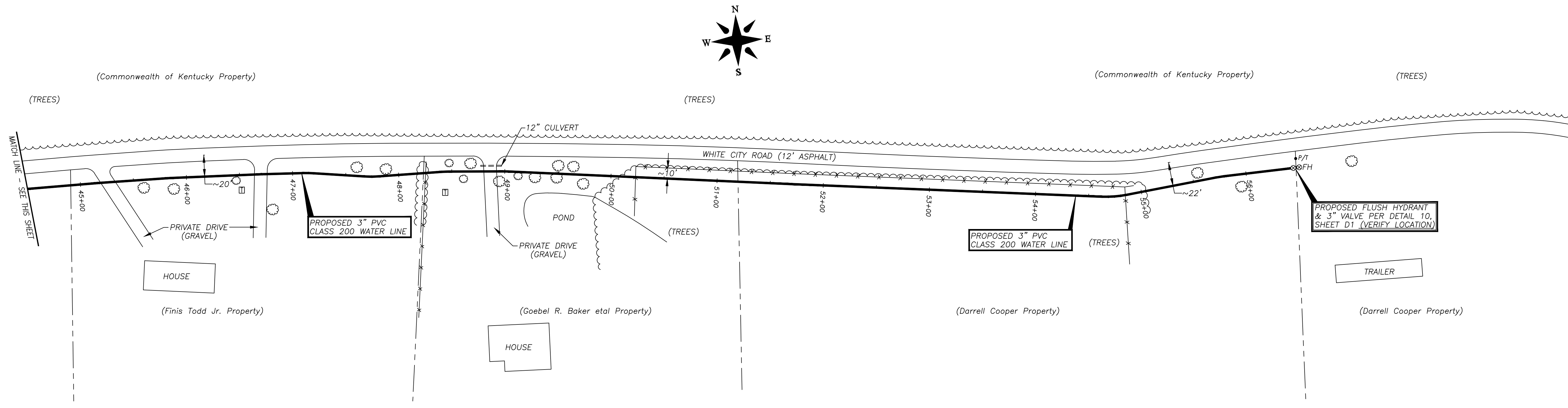
February 15, 2021

Chris Wilcutt, P.E.
 Chris Wilcutt, P.E.

DRAWING NO.
 SHEET P-5



WHITE CITY ROAD - 3" WATER LINE PLAN: STATION 29+50 TO 44+50



WHITE CITY ROAD - 3" WATER LINE PLAN: STATION 44+50 TO 56+50

ENVIRONMENTAL NOTE:
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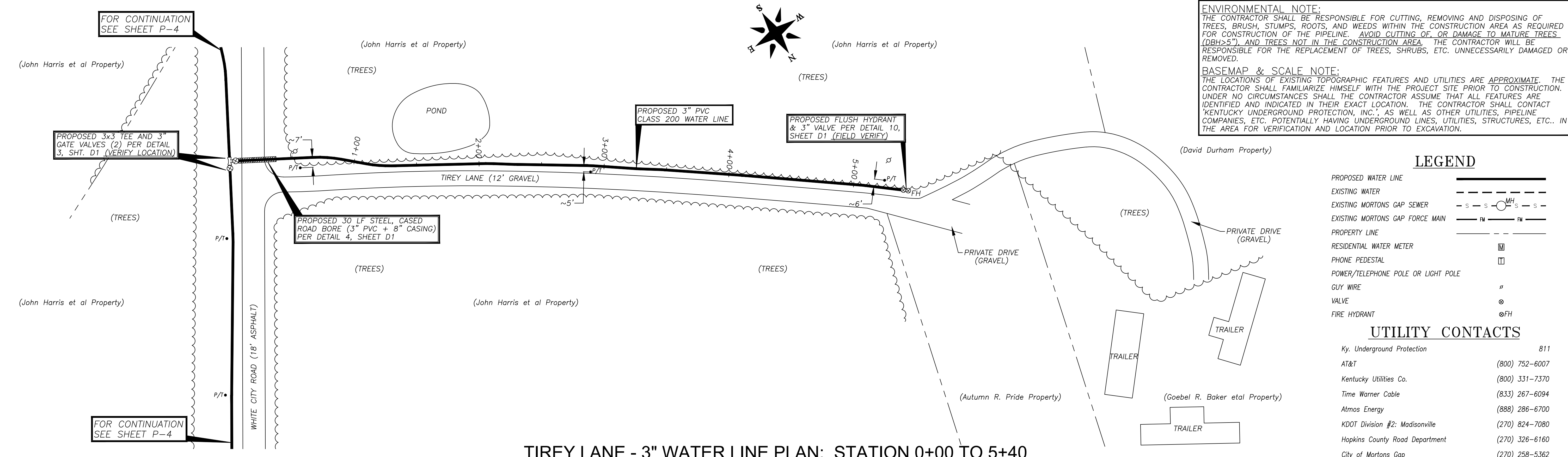
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UTILITY CONTACTS

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Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND

PROPOSED WATER LINE	---
EXISTING WATER	---
EXISTING MORTONS GAP SEWER	---MH---
EXISTING MORTONS GAP FORCE MAIN	---FM---
PROPERTY LINE	---
RESIDENTIAL WATER METER	WM
PHONE PEDESTAL	☐
POWER/TELEPHONE POLE OR LIGHT POLE	⊕
GUY WIRE	≡
VALVE	⊙
FIRE HYDRANT	⊙FH



TIREY LANE - 3" WATER LINE PLAN: STATION 0+00 TO 5+40

ENVIRONMENTAL NOTE:
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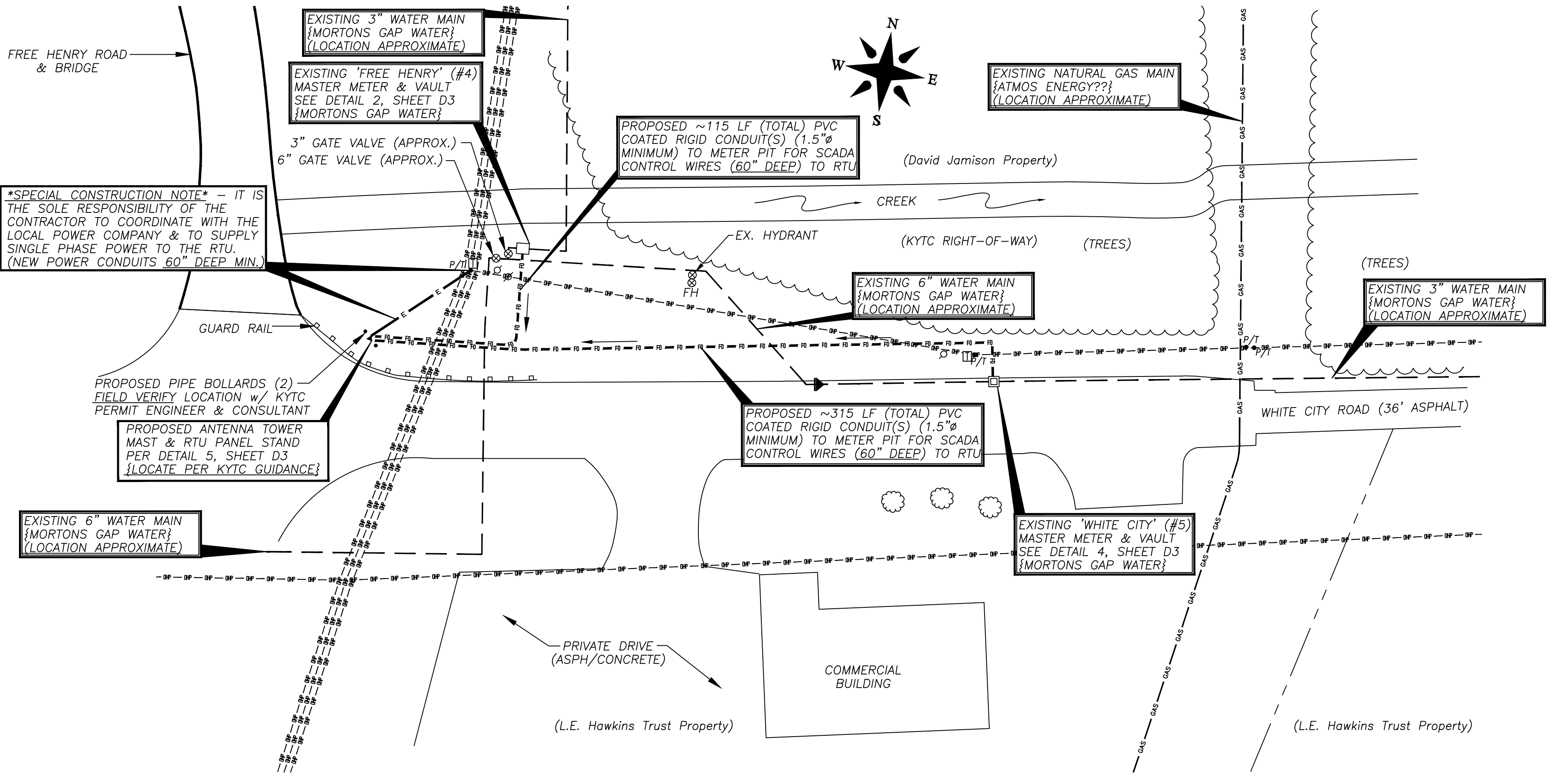
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LEGEND

PROPOSED WATER LINE	---
EXISTING WATER	---
EXISTING MORTONS GAP SEWER	-S-S-O-MH-S-S-
EXISTING MORTONS GAP FORCE MAIN	-FM-FM-
PROPERTY LINE	---
RESIDENTIAL WATER METER	⊞
PHONE PEDESTAL	⊞
POWER/TELEPHONE POLE OR LIGHT POLE	⊞
GUY WIRE	---
VALVE	⊙
FIRE HYDRANT	⊙FH

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WHITE CITY ROAD & FREE HENRY FORD ROAD (SITE 4 & 5): MASTER METER UPGRADES

GENERAL NOTES (SITES 4 & 5):

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STANDARD ELECTRICAL CODES, LATEST REVISION. ALL WIRING SHALL BE IN NEW CONDUITS.
- ALL WORK & VAULT PENETRATIONS SHALL BE COORDINATED WITH THE CITY OF MORTONS GAP PRIOR TO THE START OF WORK AT THIS SITE. ALL WALL CUTS OR WALL PENETRATIONS SHALL BE CAULKED AND WELL SEALED TO PREVENT MOISTURE ENTRY/DAMAGE. ANY REWORK OF THE INSTALLED EQUIPMENT, DUE TO FAILURE TO COORDINATE, SHALL BE AT NO EXPENSE TO THE OWNER.

SCOPE OF WORK NOTES (MORTONS GAP 'FREE HENRY' - SITE 4) MASTER METER (EXISTING):

- CORE INTO EXISTING PRECAST CONCRETE VAULT TO PROVIDE A NEW UNDERGROUND ENTRANCE POINT FOR SCADA AND/OR POWER CABLE(S).
- PROVIDE AND INSTALL NEW CONDUIT (AS SIZED ON THE SITE PLAN) AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT NEW RTU WITH VAULT COMPONENTS AS REQUIRED, INCLUDING NECESSARY TRENCHING.
- CONTRACTOR TO PROVIDE THE NECESSARY RETRO-FIT/MODIFICATION ON THE EXISTING 3" SENSUS OMNI WATER METER TO MAKE COMPATIBLE WITH AND TRANSMIT FLOW DATA TO THE SCADA SYSTEM. PROVIDE ENCODER OUTPUT TO SCADA RTU. ENCODER SIGNAL CONDITIONER TO BE PROVIDED WITH RTU. CONTRACTOR TO VERIFY SCALING OF EXISTING SENSUS REGISTER.
- PROVIDE ONE (1) NEW PRESSURE TRANSDUCER ON THE EXISTING WATER MAIN; "SUBMERSIBLE RATED"
 - PRESSURE TRANSDUCERS SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR.
 - INSTALL PIPE SADDLE AND ISOLATION VALVE AS NEEDED FOR PRESSURE MEASURING POINTS.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

SCOPE OF WORK NOTES (MORTONS GAP 'WHITE CITY' - SITE 5) MASTER METER (EXISTING):

- CORE INTO EXISTING PRECAST CONCRETE VAULT TO PROVIDE A NEW UNDERGROUND ENTRANCE POINT FOR SCADA AND/OR POWER CABLE(S).
- PROVIDE AND INSTALL NEW CONDUIT (AS SIZED ON THE SITE PLAN) AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT NEW RTU WITH VAULT COMPONENTS AS REQUIRED, INCLUDING NECESSARY TRENCHING.
- PROVIDE THE NECESSARY RETRO-FIT/MODIFICATION ON THE EXISTING 3" KAMSTRUP WATER METER TO MAKE COMPATIBLE WITH AND TRANSMIT FLOW DATA TO THE SCADA SYSTEM. PROVIDE ENCODER OUTPUT TO SCADA RTU. ENCODER SIGNAL CONDITIONER TO BE PROVIDED WITH RTU.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

SCOPE OF WORK NOTES (RTU SCADA PANEL):

- PROVIDE (1 EA.) SINGLE NEW 120VAC POWERED SCADA REMOTE TERMINAL UNIT "RTU" {SHARED FOR BOTH THE 'FREE HENRY' MASTER METER AND 'WHITE CITY' MASTER METER}. FIELD VERIFY THE ACTUAL LOCATION WITH THE UTILITY.
 - FULLY ASSEMBLED & HOUSED IN A NEMA 4 SS PAINTED WHITE ENCLOSURE.
 - INCLUDING: PLC, RADIO MODEM, POWER SUPPLIES, SURGE PROTECTION, INTERFACE TERMINALS AND ALL REQUIRED ANCILLARY DEVICES FOR A COMPLETE AND WORKING UNIT.
 - RTU TO INCLUDE ALLEN-BRADLEY MICRO850 PLATFORM PLC, LICENSED RADIO UNIT & REQUIRED ANCILLARY DEVICES FOR A COMPLETE & WORKING RTU. RTU TO BE UL508A LISTED.
- PROVIDE AND INSTALL NEW SS UNI-STRUT STRUCTURE FOR RTU ENCLOSURE MOUNTING.
- PROVIDE AND INSTALL (1 EA) NEW FREE-STANDING ALUMINUM RADIO COMMUNICATIONS TOWER WITH POSITIONING & HEIGHT DETERMINED BY SCADA INTEGRATOR'S RADIO PATH STUDY (MAXIMUM TOWER HEIGHT SHALL BE 20 FEET). INSTALLATION TO INCLUDE RADIO COMMUNICATIONS ANTENNA, COAXIAL CABLE, CONNECTORS, SURGE PROTECTOR, GROUNDING AND RELATED ANCILLARY DEVICES FOR A PROPERLY INSTALLED AND WORKING UNIT. (NOTE: IF RADIO PATH FADE MARGINS REQUIREMENTS CAN BE MET, THE ANTENNA/MAST MAY BE MOUNTED ON THE RTU MOUNTING STRUCTURE. THE ANTENNA MAST MUST BE SECURELY MOUNTED WITH 3 POINTS OF CONTACT. ANTENNA TO BE A MINIMUM OF 10 FEET FROM GROUND LEVEL.)
- PROVIDE AND INSTALL UP TO TWO (2) PIPE BOLLARDS FOR VAULT PROTECTION AND/OR RTU & TOWER PROTECTION. FIELD VERIFY LOCATIONS.
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE RTU AS REQUIRED.
- PROVIDE AND INSTALL (1 EA) NEW 100 AMP 240/120 VAC ELECTRICAL SERVICE AND HARDWARE, INCLUDING (1) MAIN BREAKER AND A MINIMUM OF 4 (EA.) 15AMP SINGLE POLE BREAKERS.
 - THE OWNER SHALL PROVIDE FOR ALL FEES WITH THE UTILITY COMPANY TO HAVE POWER INSTALLED TO THE SITE LOCATION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY COMPANY THRU INSTALLATION, INSTALLING THE SERVICE PANEL, TRENCHING UNDERGROUND CONDUITS AS REQUIRED, PLUS RELATED INSPECTION FEES AND CONDUIT/WIRING TO THE RTU AS REQUIRED.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND/OR CONTROL LOCAL FUNCTIONS AS REQUIRED FOR FLOW RATE, FLOW TOTALIZATION, SYSTEM PRESSURE, POWER STATUS, ETC.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

REVISIONS	
NO.	DATE
1	02-15-21
2	CWW
3	BY

McGHEE ENGINEERING
 MORTONS GAP WATER & SEWER

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 Guthrie, KY 42334
 (270) 483-9985

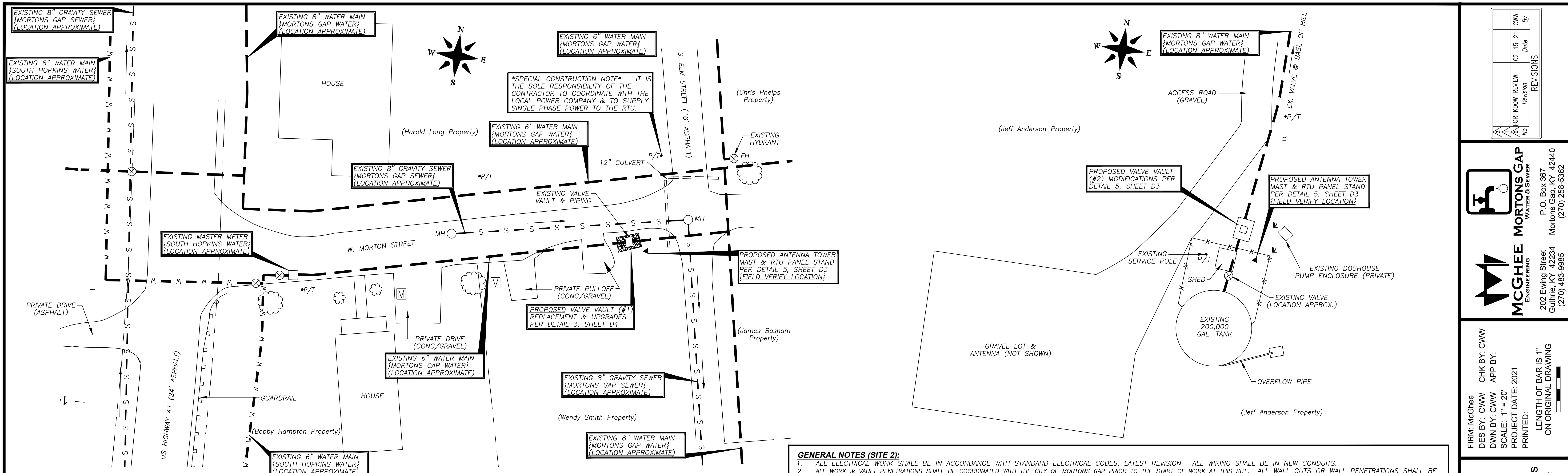
DES BY: CWW CHK BY: CWW
 DWN BY: CWW APP BY:
 SCALE: 1" = 40'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING

City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Tirey Ln. Waterline Plan & Other Upgrades



February 15, 2021

Chris Wilcutt, P.E.
 Chris Wilcutt, P.E.



GENERAL NOTES (SITE 1):

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STANDARD ELECTRICAL CODES, LATEST REVISION. ALL WIRING SHALL BE IN NEW CONDUITS.
- ALL WORK & VAULT PENETRATIONS SHALL BE COORDINATED WITH THE CITY OF MORTONS GAP PRIOR TO THE START OF WORK AT THIS SITE. ALL WALL CUTS OR WALL PENETRATIONS SHALL BE CAULKED AND WELL SEALED TO PREVENT MOISTURE ENTRY/DAMAGE. ANY REWORK OF THE INSTALLED EQUIPMENT, DUE TO FAILURE TO COORDINATE, SHALL BE AT NO EXPENSE TO THE OWNER.

SCOPE OF WORK NOTES (W. MORTON & S. ELM STREET CORNER - SITE 1) - REPLACED CONTROL VALVE VAULT:

- PROVIDE (1 EA.) AND INSTALL NEW PREFABRICATED CONCRETE MASTER METER & CONTROL VALVE VAULT, INCLUDING ALL PIPING, VALVES & OTHER ACCESSORIES AS SPECIFIED IN THE CONTRACT DOCUMENTS. SEE DETAIL 3, SHEET D4. CONTRACTOR SHALL GRADE THE AREAS AROUND THE VAULT FOR PROPER DRAINAGE AND EASY MAINTENANCE.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF THE EXISTING VALVE VAULT, INCLUDING ALL COMPONENTS.
- PROVIDE (2 EA.) NEW SYSTEM PRESSURE TRANSDUCERS "SUBMERSIBLE RATED"
 - PRESSURE TRANSDUCERS SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR
 - INSTALL PIPE SADDLES AND ISOLATION VALVES AS NEEDED FOR PRESSURE MEASURING POINT.
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT WITH RTU, AS REQUIRED.
- PROVIDE AND INSTALL UP TO SIX (6) PIPE BOLLARDS (NOT SHOWN) FOR VAULT PROTECTION AND/OR RTU & TOWER PROTECTION. FIELD VERIFY LOCATIONS.
- PROVIDE (1 EA.) NEW 6-INCH ELECTROMAGNETIC FLOW METER (ABB WATERMASTER MAGNETIC FLOW METER OR APPROVED EQUAL)
 - PROVIDE AND INSTALL NEW FLOW METER. METER SHALL INCLUDE A SUBMERSIBLE RATED FLOW HEAD WITH REMOTE MOUNT DIGITAL DISPLAY WITH INTERNAL POWERED 4 TO 20 MA OUTPUT TO SCADA. PROVIDE A MINIMUM OF 60 LF OF FACTORY CABLE WITH METER.
 - FLOW METER SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR FOR THE 4-20MA CURRENT LOOP AT OR NEAR THE METER ELECTRONIC REGISTER.
 - REMOTE FLOW TRANSMITTER TO BE HOUSED IN A SECONDARY NEMA 4 SS ENCLOSURE OR MOUNTED IN THE NEW RTU ENCLOSURE.
- PROVIDE (1 EA.) ELECTRICALLY OPERATED CONTROL VALVE (CLA-VAL 131 SERIES OR APPROVED EQUAL)
 - 120VAC OPERATING VOLTAGE
 - SIZE: 6 INCH; 150 LB FLANGED PIPE CONNECTION
 - OBJECTIVES: A) OPEN/CLOSE VALVE BASED ON TANK LEVEL READING FROM SCADA; B) FUNCTION AS PRV IN POWER FAILURE; & C) ALLOW FOR VALVE OPENING OR CLOSURE OVERRIDE VIA USER CONTROL FROM SCADA.
 - MANUAL OVERRIDE FUNCTION WITH DRY CONTACT.
 - EQUIPPED WITH LIMIT SWITCH (CLA-VAL X-105L2W LIMIT SWITCH OR APPROVED EQUAL). THE VALVE SHALL ALSO INCLUDE THE VC-22D ELECTRONIC VALVE CONTROLLER AND THE X117 SERIES VALVE POSITION TRANSMITTER
 - CONTROL VALVE EQUIPPED WITH CHECK FEATURE OPTION
 - PROVIDE SECONDARY VALVE CONTROLLER (CLA-VAL VC-22D) AND POSITION FEEDBACK IF NEEDED FOR REMOTE VALVE POSITION CONTROL FROM SCADA.

SCOPE OF WORK NOTES (RTU SCADA PANEL):

- PROVIDE (1 EA.) SINGLE & NEW 120VAC POWERED SCADA REMOTE TERMINAL UNIT "RTU". FIELD VERIFY THE ACTUAL LOCATION WITH THE UTILITY.
 - FULLY ASSEMBLED & HOUSED IN A NEMA 4 SS PAINTED WHITE ENCLOSURE.
 - INCLUDING: PLC, RADIO MODEM, POWER SUPPLIES, SURGE PROTECTION, INTERFACE TERMINALS AND ALL REQUIRED ANCILLARY DEVICES FOR A COMPLETE AND WORKING UNIT.
 - RTU TO INCLUDE ALLEN-BRADLEY MICRO850 PLATFORM PLC, LICENSED RADIO UNIT & REQUIRED ANCILLARY DEVICES FOR A COMPLETE & WORKING RTU. RTU TO BE UL508A LISTED.
 - RTU SHALL INCLUDE PROVISIONS TO MONITOR THE CITY'S WATER STORAGE TANK AND AUTOMATICALLY CONTROL THE LOCAL TANK FILL CONTROL VALVE TO MAINTAIN DESIRED STORAGE TANK LEVEL.
 - RTU SHALL INCLUDE A LOCAL HAND-OFF-AUTO SWITCH AND INTERPOSING RELAY FOR MANUAL AND PLC VALVE CONTROL
- PROVIDE AND INSTALL NEW SS UNI-STRUT STRUCTURE FOR RTU ENCLOSURE MOUNTING.
- PROVIDE AND INSTALL (1 EA.) NEW FREE-STANDING ALUMINUM RADIO COMMUNICATIONS TOWER WITH POSITIONING & HEIGHT DETERMINED BY SCADA INTEGRATOR'S RADIO PATH STUDY (MAXIMUM TOWER HEIGHT SHALL BE 20 FEET). INSTALLATION TO INCLUDE RADIO COMMUNICATIONS ANTENNA, COAXIAL CABLE, CONNECTORS, SURGE PROTECTOR, GROUNDING AND RELATED ANCILLARY DEVICES FOR A PROPERLY INSTALLED AND WORKING UNIT. (NOTE: IF RADIO PATH FADE MARGINS REQUIREMENTS CAN BE MET, THE ANTENNA/MAST MAY BE MOUNTED ON THE RTU MOUNTING STRUCTURE. THE ANTENNA MAST MUST BE SECURELY MOUNTED WITH 3 POINTS OF CONTACT. ANTENNA TO BE A MINIMUM OF 10 FEET FROM GROUND LEVEL.)
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE RTU AS REQUIRED.
- PROVIDE AND INSTALL (1 EA.) NEW 100 AMP 240/120 VAC ELECTRICAL SERVICE AND HARDWARE, INCLUDING (1) MAIN BREAKER AND A MINIMUM OF 4 (EA.) 15AMP SINGLE POLE BREAKERS.
 - THE OWNER SHALL PROVIDE FOR ALL FEES WITH THE UTILITY COMPANY TO HAVE POWER INSTALLED TO THE SITE LOCATION.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE UTILITY COMPANY THRU INSTALLATION, INSTALLING THE SERVICE PANEL, TRENCHING UNDERGROUND CONDUITS AS REQUIRED, PLUS RELATED INSPECTION FEES AND CONDUIT/WIRING TO THE RTU AS REQUIRED.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND/OR CONTROL LOCAL FUNCTIONS AS REQUIRED FOR WATER AND POSSIBLY, IF ADDED, SEWER UTILITIES.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

GENERAL NOTES (SITE 2):

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STANDARD ELECTRICAL CODES, LATEST REVISION. ALL WIRING SHALL BE IN NEW CONDUITS.
- ALL WORK & VAULT PENETRATIONS SHALL BE COORDINATED WITH THE CITY OF MORTONS GAP PRIOR TO THE START OF WORK AT THIS SITE. ALL WALL CUTS OR WALL PENETRATIONS SHALL BE CAULKED AND WELL SEALED TO PREVENT MOISTURE ENTRY/DAMAGE. ANY REWORK OF THE INSTALLED EQUIPMENT, DUE TO FAILURE TO COORDINATE, SHALL BE AT NO EXPENSE TO THE OWNER.

SCOPE OF WORK NOTES (MORTONS GAP TANK - SITE 2) - MASTER METER VAULT (NEW METER):

- CORE INTO EXISTING PRECAST CONCRETE VAULT TO PROVIDE A NEW UNDERGROUND ENTRANCE POINT FOR SCADA AND/OR POWER CABLE(S).
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT VAULT COMPONENTS WITH RTU AS REQUIRED.
- MODIFY PIPING WITHIN THE EXISTING CONCRETE VAULT BY REMOVING THE EXISTING ALTITUDE VALVE TO MAKE ROOM FOR PROPOSED NEW 8" ELECTROMAGNETIC METER AS SPECIFIED IN THE CONTRACT DOCUMENTS. DISPOSE OF REMOVED MATERIALS.
- PROVIDE (1 EA.) NEW 8-INCH ELECTROMAGNETIC FLOW METER (ABB WATERMASTER MAGNETIC FLOW METER OR APPROVED EQUAL)
 - PROVIDE AND INSTALL NEW FLOW METER. METER SHALL INCLUDE A SUBMERSIBLE RATED FLOW HEAD WITH REMOTE MOUNT DIGITAL DISPLAY WITH INTERNAL POWERED 4 TO 20 MA OUTPUT TO SCADA. PROVIDE A MINIMUM OF 60 LF OF FACTORY CABLE WITH METER.
 - FLOW METER SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR FOR THE 4-20MA CURRENT LOOP AT OR NEAR THE METER ELECTRONIC REGISTER.
 - REMOTE FLOW TRANSMITTER TO BE HOUSED IN A SECONDARY NEMA 4 SS ENCLOSURE OR MOUNTED IN THE NEW RTU ENCLOSURE.
- PROVIDE ONE (1) NEW PRESSURE TRANSDUCER (WITH INTEGRAL DIGITAL DISPLAY) ON THE EXISTING WATER MAIN; "SUBMERSIBLE RATED"
 - PRESSURE TRANSDUCERS SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR.
 - INSTALL PIPE SADDLE AND ISOLATION VALVE AS NEEDED FOR PRESSURE MEASURING POINTS.
- PROVIDE NEW DRESSER COUPLINGS & DIP SPOOL AS NEEDED TO ACCOMMODATE METER PLACEMENT IN EXISTING PIPE RUN.
- PROVIDE AND INSTALL (1 EA.) NEW TANK LEVEL PRESSURE GAUGE WITH FEET OF WATER ENGINEERING UNITS, 4 INCH DIAL, 1/2% ACCURACY. ALL RELATED CONNECTING PIPE FITTINGS TO BE BRASS OR STAINLESS STEEL.

SCOPE OF WORK NOTES (MORTONS GAP TANK):

- PROVIDE (1 EA.) SINGLE NEW 120VAC POWERED SCADA REMOTE TERMINAL UNIT "RTU". FIELD VERIFY THE ACTUAL LOCATION WITH THE UTILITY.
 - FULLY ASSEMBLED & HOUSED IN A NEMA 4 SS PAINTED WHITE ENCLOSURE.
 - INCLUDING: PLC, RADIO MODEM, POWER SUPPLIES, SURGE PROTECTION, INTERFACE TERMINALS AND ALL REQUIRED ANCILLARY DEVICES FOR A COMPLETE AND WORKING UNIT.
 - RTU TO INCLUDE ALLEN-BRADLEY MICRO850 PLATFORM PLC, LICENSED RADIO UNIT & REQUIRED ANCILLARY DEVICES FOR A COMPLETE & WORKING RTU. RTU TO BE UL508A LISTED.
- PROVIDE AND INSTALL NEW SS UNI-STRUT STRUCTURE FOR RTU ENCLOSURE MOUNTING.
- PROVIDE AND INSTALL (1 EA.) NEW FREE-STANDING ALUMINUM RADIO COMMUNICATIONS TOWER WITH POSITIONING & HEIGHT DETERMINED BY SCADA INTEGRATOR'S RADIO PATH STUDY (MAXIMUM TOWER HEIGHT SHALL BE 20 FEET). INSTALLATION TO INCLUDE RADIO COMMUNICATIONS ANTENNA, COAXIAL CABLE, CONNECTORS, SURGE PROTECTOR, GROUNDING AND RELATED ANCILLARY DEVICES FOR A PROPERLY INSTALLED AND WORKING UNIT. (NOTE: IF RADIO PATH FADE MARGINS REQUIREMENTS CAN BE MET, THE ANTENNA/MAST MAY BE MOUNTED ON THE RTU MOUNTING STRUCTURE. THE ANTENNA MAST MUST BE SECURELY MOUNTED WITH 3 POINTS OF CONTACT. ANTENNA TO BE A MINIMUM OF 10 FEET FROM GROUND LEVEL.)
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE RTU AS REQUIRED.
- UTILIZE EXISTING 120 VAC ELECTRICAL SERVICE SERVING THE TANK SITE (CITY ACCOUNT). REPAIR OR REPLACE ANY EXISTING CONDUIT OR WIRING AS NEEDED TO ASSURE THERE ARE NO EXPOSED WIRING OR OPEN CONDUIT JOINTS FROM THE POWER PANEL. PROVIDE ALL NECESSARY CONDUITS, TRENCHING, WIRING AND DISCONNECT NEEDED TO ENERGIZE AND CONNECT THE RTU TO THE POWER SOURCE. CONTRACTOR SHALL SITE VERIFY ITEMS NEEDED & PROVIDE FOR INSPECTION/PERMIT.
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE NEW RTU AS REQUIRED.
- NEW CONDUCTOR CABLE FROM THE EXISTING VALVE VAULT TO THE NEW RTU LOCATION IS TO BE INSTALLED. NEW CABLE WOULD BE INSTALLED IN A 1.5" DIAMETER (MIN.) CONDUIT, AND THE CABLE WOULD BE AS FOLLOWS: INSTRUMENTATION CABLE, TYPE PLTC , TYPE ITC, 300V, 8 TWISTED PAIRS, 18 AWG, PVC CONDUCTOR INSULATION MATERIAL, BLACK AND WHITE NUMBERED PAIRS, OVERALL SHIELDED, PVC JACKET.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND CONTROL LOCAL FUNCTIONS AS REQUIRED FOR TANK LEVEL MEASUREMENT, FLOW RATE, FLOW TOTALIZATION, TANK FILL VALVE CONTROL, POWER STATUS.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

TANK SITE (SITE 2) - EXISTING VALVE VAULT MODIFICATION PLAN

UTILITY CONTACTS

Ky. Underground Protection	811
AT&T	(800) 752-6007
Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND

EXISTING WATER	---
EXISTING MORTONS GAP SEWER	- S - S - S - S - S - S -
EXISTING SOUTH HOPKINS WATER	- W - W - W - W - W - W -
PROPERTY LINE	---
RESIDENTIAL WATER METER	⊞
PHONE PEDESTAL	⊞
POWER/TELEPHONE POLE OR LIGHT POLE	⊞
GUY WIRE	σ
VALVE	⊙
FIRE HYDRANT	⊙FH

W. MORTON & S. ELM STREET (SITE 1) - VALVE VAULT REPLACEMENT

NO.	REVISIONS
1	FOR RCDW REVIEW
2	02-15-21
	By
	Date

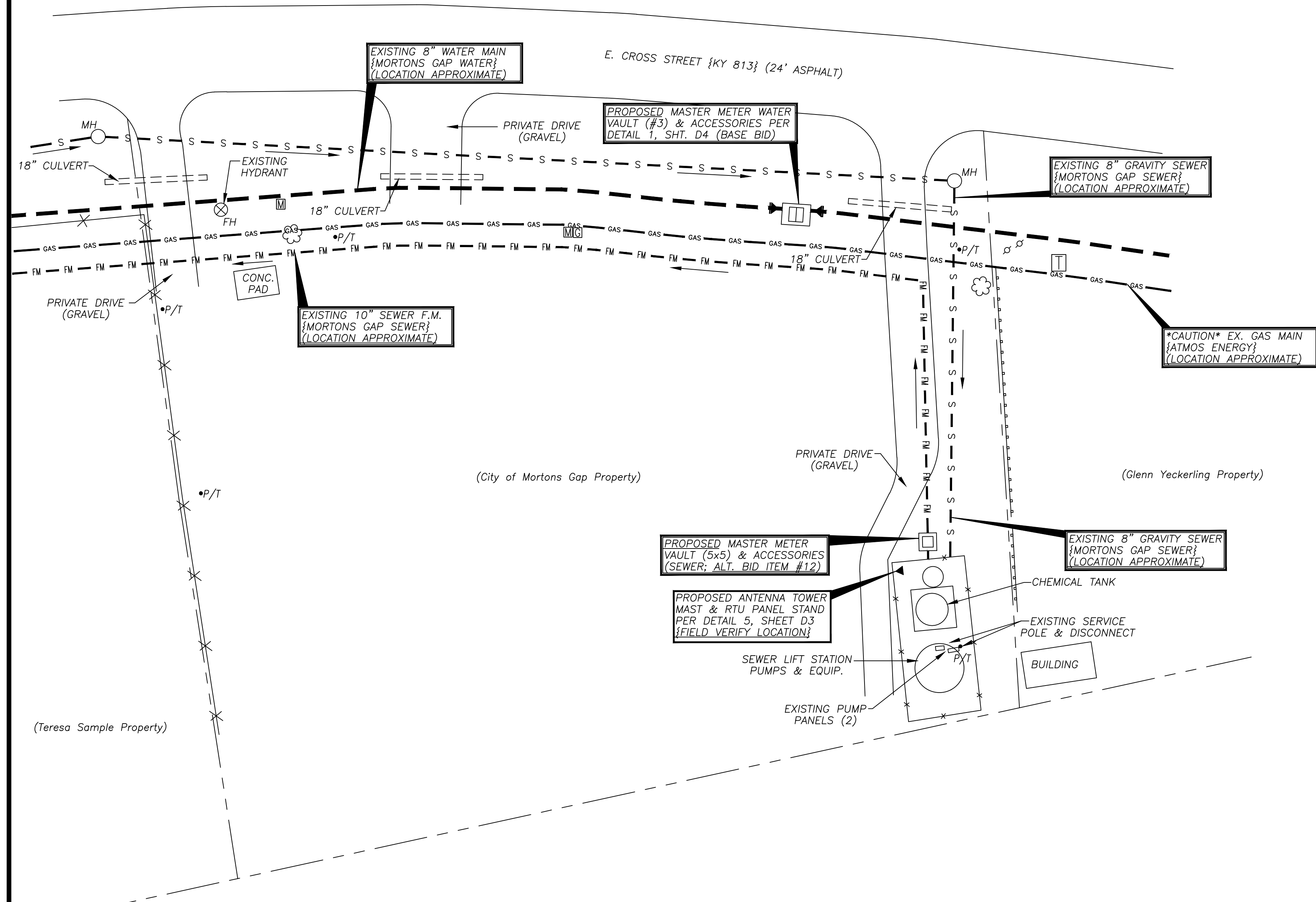
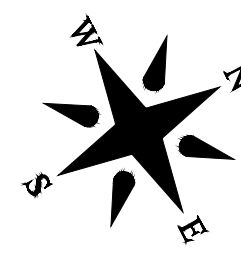
McGHEE ENGINEERING
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 P.O. Box 367
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 (270) 258-5362

FIRM: McGhee
 DES BY: CWV
 DWN BY: CWV
 SCALE: 1" = 20'
 PROJECT DATE: 2021
 PRINTED: []
 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Tank Site and Morton/Elm Vault Plans



February 15, 2021
 Chris Whitcutt, P.E.
 DRAWING NO. []
 SHEET P-7



E. CROSS STREET @ LIFT STATION (SITE 3) - NEW MASTER METER VAULT

GENERAL NOTES (SITE 3):

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH STANDARD ELECTRICAL CODES, LATEST REVISION. ALL WIRING SHALL BE IN NEW CONDUITS.
- ALL WORK & BUILDING PENETRATIONS SHALL BE COORDINATED WITH THE CITY OF MORTONS GAP PRIOR TO THE START OF WORK AT THIS SITE. ALL WALL CUTS OR WALL PENETRATIONS SHALL BE CAULKED AND WELL SEALED TO PREVENT MOISTURE ENTRY/DAMAGE. ANY REWORK OF THE INSTALLED EQUIPMENT, DUE TO FAILURE TO COORDINATE, SHALL BE AT NO EXPENSE TO THE OWNER.

SCOPE OF WORK NOTES (MORTONS GAP - SEWER LIFT STATION) (OPTIONAL: SUPPLEMENTAL BID ITEM #12):

- PROVIDE (1 EA.) NEW 10-INCH ELECTROMAGNETIC FLOW METER (ABB WATERMASTER MAGNETIC FLOW METER OR APPROVED EQUAL)
 - PROVIDE AND INSTALL NEW FLOW METER. METER SHALL INCLUDE A SUBMERSIBLE RATED FLOW HEAD WITH REMOTE MOUNT DIGITAL DISPLAY WITH INTERNAL POWERED 4 TO 20 MA OUTPUT TO SCADA.
 - FLOW METER SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR FOR THE 4-20MA CURRENT LOOP AT OR NEAR THE METER ELECTRONIC REGISTER.
- PROVIDE (1 EA.) AND INSTALL NEW PREFABRICATED CONCRETE MASTER METER VAULT (5'x5') WITH ALUMINUM SINGLE HATCH (36"x36") TO HOUSE THE METER & OTHER ACCESSORIES. FIELD VERIFY PLACEMENT WITH OWNER.
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE NEW RTU AS REQUIRED.
- PROVIDE NEW CONDUIT AND SIGNAL CABLE AS REQUIRED TO CONNECT WITH OTHER EXISTING LIFT STATION EQUIPMENT & CONTROLS.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND CONTROL LOCAL FUNCTIONS AS REQUIRED FOR FLOW RATE, FLOW TOTALIZATION, PUMP RUN TIMES, PUMP STATUS, WET WELL LEVELS, POWER STATUS AND OTHER I/O POINTS AS LISTED.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

SCOPE OF WORK NOTES (MORTONS GAP - E. CROSS STREET MASTER METER (NEW)):

- PROVIDE (1 EA.) AND INSTALL NEW PREFABRICATED CONCRETE MASTER METER VAULT, PIPING, VALVES & OTHER ACCESSORIES AS SPECIFIED IN THE CONTRACT DOCUMENTS. SEE DETAIL 1, SHEET D4.
- PROVIDE (1 EA.) NEW SYSTEM PRESSURE TRANSDUCER "SUBMERSIBLE RATED"
 - PRESSURE TRANSDUCER SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR
 - INSTALL PIPE SADDLE AND ISOLATION VALVE AS NEEDED FOR PRESSURE MEASURING POINT.
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO CONNECT WITH RTU, AS REQUIRED.
- PROVIDE (1 EA.) NEW 4-INCH TURBO FLOW METER (SENSUS OMNI SERIES w/ STRAINER OR APPROVED EQUAL)
 - PROVIDE AND INSTALL NEW FLOW METER. METER SHALL INCLUDE A SUBMERSIBLE RATED DIRECT MOUNT DIGITAL DISPLAY WITH ENCODER OUTPUT TO SCADA. ENCODER SIGNAL CONDITIONER TO BE PROVIDED WITH RTU.
 - FLOW METER SHALL INCLUDE INTEGRAL OR LOCAL SURGE PROTECTOR FOR THE 4-20MA CURRENT LOOP AT OR NEAR THE METER ELECTRONIC REGISTER.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND CONTROL LOCAL FUNCTIONS AS REQUIRED FOR FLOW RATE, FLOW TOTALIZATION, SYSTEM PRESSURE, FLOW AND PRESSURE I/O POINTS AS LISTED.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.
- PROVIDE AND INSTALL UP TO FOUR (4) PIPE BOLLARDS (NOT SHOWN) FOR VAULT PROTECTION AND/OR RTU & TOWER PROTECTION. FIELD VERIFY LOCATIONS.

SCOPE OF WORK NOTES (RTU SCADA PANEL):

- PROVIDE (1 EA.) SINGLE NEW 120VAC POWERED SCADA REMOTE TERMINAL UNIT "RTU". FIELD VERIFY THE ACTUAL LOCATION WITH THE UTILITY.
 - FULLY ASSEMBLED & HOUSED IN A NEMA 4 SS PAINTED WHITE ENCLOSURE.
 - INCLUDING: PLC, RADIO MODEM, POWER SUPPLIES, SURGE PROTECTION, INTERFACE TERMINALS AND ALL REQUIRED ANCILLARY DEVICES FOR A COMPLETE AND WORKING UNIT.
 - RTU TO INCLUDE ALLEN-BRADLEY MICRO850 PLATFORM PLC, LICENSED RADIO UNIT & REQUIRED ANCILLARY DEVICES FOR A COMPLETE & WORKING RTU. RTU TO BE UL508A LISTED.
- PROVIDE AND INSTALL NEW SS UNI-STRUT STRUCTURE FOR RTU ENCLOSURE MOUNTING.
- PROVIDE AND INSTALL (1 EA) NEW FREE-STANDING ALUMINUM RADIO COMMUNICATIONS TOWER WITH POSITIONING & HEIGHT DETERMINED BY SCADA INTEGRATOR'S RADIO PATH STUDY (MAXIMUM TOWER HEIGHT SHALL BE 20 FEET). INSTALLATION TO INCLUDE RADIO COMMUNICATIONS ANTENNA, COAXIAL CABLE, CONNECTORS, SURGE PROTECTOR, GROUNDING AND RELATED ANCILLARY DEVICES FOR A PROPERLY INSTALLED AND WORKING UNIT. (NOTE: IF RADIO PATH FADE MARGINS REQUIREMENTS CAN BE MET, THE ANTENNA/MAST MAY BE MOUNTED ON THE RTU MOUNTING STRUCTURE. THE ANTENNA MAST MUST BE SECURELY MOUNTED WITH 3 POINTS OF CONTACT. ANTENNA TO BE A MINIMUM OF 10 FEET FROM GROUND LEVEL.)
- PROVIDE AND INSTALL NEW CONDUIT AT UNDERGROUND ENTRANCE OR EXIT POINTS TO THE RTU AS REQUIRED.
- UTILIZE EXISTING ELECTRICAL SERVICE SERVING THE LIFT STATION SITE (CITY ACCOUNT). REPAIR OR REPLACE ANY EXISTING CONDUIT OR WIRING AS NEEDED TO ASSURE THERE ARE NO EXPOSED WIRING OR OPEN CONDUIT JOINTS FROM THE POWER PANEL. PROVIDE ALL NECESSARY CONDUITS, TRENCHING, WIRING AND DISCONNECT NEEDED TO ENERGIZE AND CONNECT THE RTU AND/OR THE VAULT METER TO THE POWER SOURCE AND/OR RTU PANEL. CONTRACTOR SHALL SITE VERIFY ITEMS NEEDED & PROVIDE FOR INSPECTION/PERMIT.
- PROVIDE SYSTEMS INTEGRATION AND DEVELOPMENT FOR A FULLY FUNCTIONAL RTU TO MONITOR AND/OR CONTROL LOCAL FUNCTIONS AS REQUIRED FOR WATER AND POSSIBLY, IF ADDED, SEWER UTILITIES.
- PROVIDE RELATED ELECTRICAL HARDWARE AND SERVICES FOR EQUIPMENT INSTALLATION AS REQUIRED.

NO.	REVISION	DATE	BY
1	FOR RCDW REVIEW	02-15-21	CWW
2	REVISIONS		

McGHEE ENGINEERING
 MORTONS GAP WATER & SEWER
 P.O. Box 367
 Mortons Gap, KY 42440
 (270) 256-5362

FIRM: McGhee
 DES BY: CWW
 DWN BY: CWW
 SCALE: 1" = 20'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING
 LENGTH OF BAR IS 1"

City of Mortons Gap, Kentucky
 WATER SYSTEM REHAB.
 & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 East Cross Street Master Meter Plan



February 15, 2021
 Chris Wilcutt
 Chris Wilcutt, P.E.

ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. AVOID CUTTING OF OR DAMAGE TO MATURE TREES (DBH>5"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

BASEMAP & SCALE NOTE:
 THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR ASSUME THAT ALL FEATURES ARE IDENTIFIED AND INDICATED IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL CONTACT "KENTUCKY UNDERGROUND PROTECTION, INC.", AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC.. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.

UTILITY CONTACTS

Ky. Underground Protection	811
AT&T	(800) 752-6007
Kentucky Utilities Co.	(800) 331-7370
Time Warner Cable	(833) 267-6094
Atmos Energy	(888) 286-6700
KDOT Division #2: Madisonville	(270) 824-7080
Hopkins County Road Department	(270) 326-6160
City of Mortons Gap	(270) 258-5362

LEGEND

PROPOSED WATER LINE	
EXISTING WATER	
EXISTING MORTONS GAP SEWER	
EXISTING SOUTH HOPKINS WATER	
PROPERTY LINE	
RESIDENTIAL WATER METER	
PHONE PEDESTAL	
POWER/TELEPHONE POLE OR LIGHT POLE	
GUY WIRE	
VALVE	
FIRE HYDRANT	



HYD. REPLACEMENT/RELOCATION USING EX. VALVE			PROPOSED VALVE ADDITIONS (CUT-IN METHOD)		
ITEM	LOCATION (FIELD VERIFY w/ OWNER)	VALVE SIZE	ITEM	LOCATION (FIELD VERIFY w/ OWNER)	VALVE SIZE
A	136 Hopkinsville Road (US 41) (Replace Hyd)	6"	1	School House Road @ N. Main Street	6"
B	116 Hopkinsville Road (US 41) (Replace Hyd)	6"	2	Sycamore Street @ Flat Creek Street	6"
C	111 Hopkinsville Road (US 41) (Replace Hyd)	6"	3	Flat Creek Street @ Sycamore Street	8"
D	124 Plum Street (Replace Hydrant)	6"	4	Crooked Street @ Sycamore Street	6"
E	107 Curve Street (Replace Hydrant)	6"	5	Sycamore Street @ Crooked Street	6"
F	2110 White Plains Road (Not shown on map) (Relocate Ex. Hydrant out of Ditch, ~5' spool)	6"	6	Victory Street @ Flat Creek Street	8"
			7	Victory Street @ Crooked Street	8"
			8	Crooked Street @ Victory Street	6"
			9	Liberty Street @ Crooked Street	6"
			10	Victory Street @ New Walnut Street	8"
			11	New Walnut Street @ x-country line	8"
			12	Cross Street @ Shop Street	6"
			13	E. Morton Street @ Shop Street	8"

NEW HYDRANT ADDITION VIA LINE SIZE x 6" TAP		
ITEM	LOCATION (FIELD VERIFY w/ OWNER)	LINE SIZE
G	School House Drive (Verify Location w/ Owner (Near 132 N. Main Street))	6"
H	330 Trabue Road (Not Shown on map)	6"
I	858 Trabue Road (Not Shown on map)	6"

REVISIONS		
No.	Revision	Date
02-15-21	CWV	By

McGHEE ENGINEERING
MORTONS GAP WATER & SEWER
 P.O. Box 367
 Morton's Gap, KY 42440
 (270) 258-5362

FIRM: McGhee
 DES BY: CWV
 DWN BY: CWV
 SCALE: 1"=200'
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING
 LENGTH OF BAR IS 1"

City of Morton's Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 Valve Additions & Hydrant Replacements



February 15, 2021
 Chris Wilcutt
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LEGEND

EXISTING 2-INCH WATERLINE	
EXISTING 4-INCH WATERLINE	
EXISTING 6-INCH WATERLINE	
EXISTING 8-INCH WATERLINE	
PROPOSED VALVE TO BE ADDED VIA 'CUT-IN' METHOD	
PROPOSED HYDRANT TO BE REPLACED w/ Ex. VALVE	
PROPOSED HYDRANT TO BE ADDED VIA TAP METHOD	

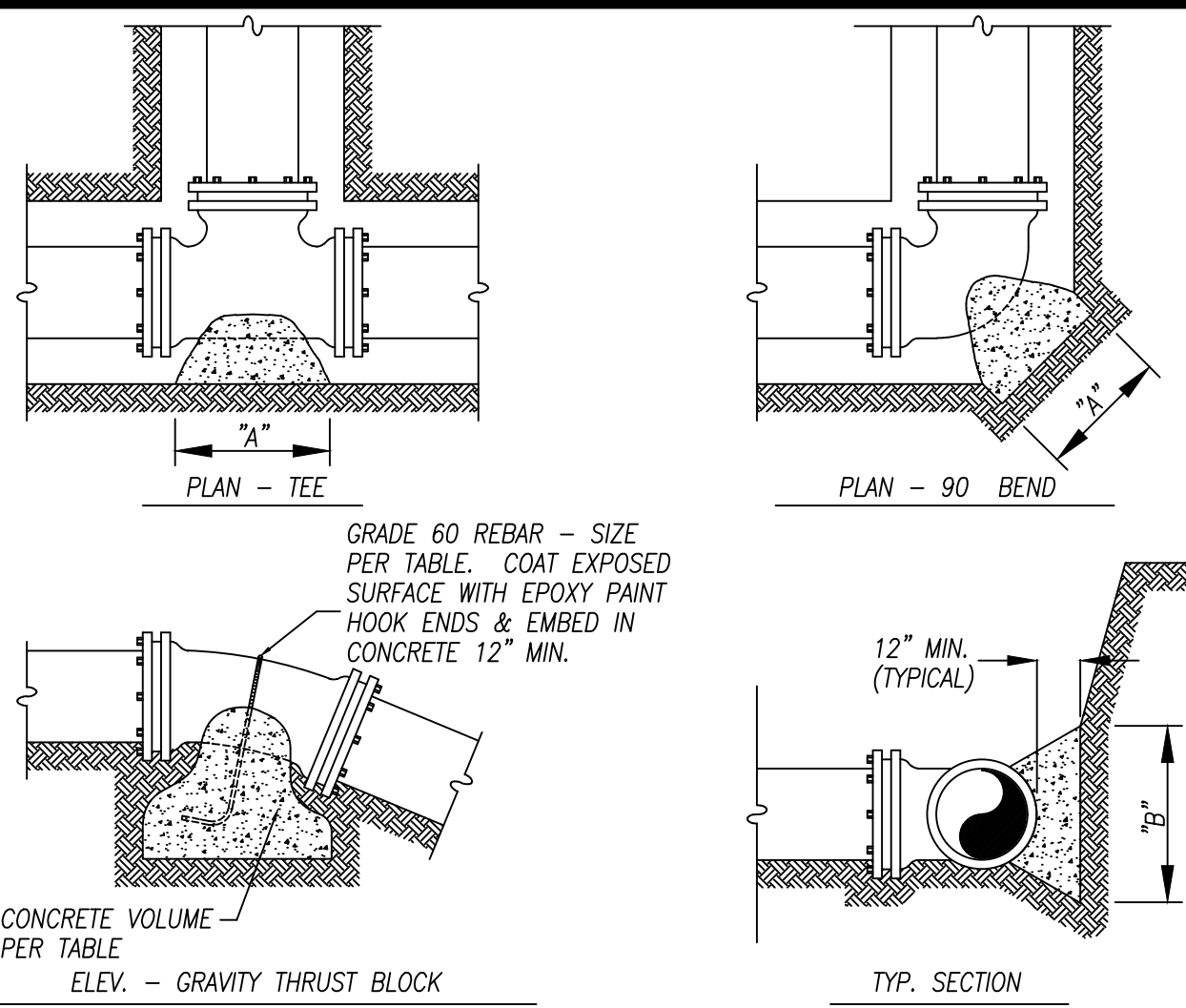
UTILITY CONTACTS

Ky. Underground Protection	811
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City of Morton's Gap	(270) 258-5362

- ### GENERAL NOTES:
- THE CONTRACTOR SHALL KEEP THE WORK AREA CLEAN AND ORDERLY AT ALL TIMES. ALL TRASH AND DEBRIS SHALL BE PICKED UP AND REMOVED FROM THE JOB SITE AT THE END OF EACH DAY.
 - DRIVEWAYS OR OTHER ACCESSWAYS REQUIRING EXCAVATION SHALL BE BACKFILLED COMPLETELY WITH GRAVEL AND SHALL BE COMPLETED WITHIN ONE WORKING DAY. IN NO EVENT SHALL SUCH AREAS REMAIN IMPASSABLE OVERNIGHT.
 - CONTRACTOR SHALL COORDINATE WORK ON PRIVATE PROPERTY WITH THE PROPERTY OWNER, DISTURBANCE OF EXISTING FENCES SHALL BE HELD TO A MINIMUM, AND ANY FENCE DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
 - CONTRACTOR SHALL CONTACT KY. UNDERGROUND PROTECTION, INC. AT (811), AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.
 - THE UTILITY/CITY SHALL BE RESPONSIBLE FOR OBTAINING AND RECORDING ALL EASEMENTS PRIOR TO CONSTRUCTION ON ANY PRIVATE PROPERTIES. CONTRACTOR SHALL VERIFY EASEMENTS AND RIGHT OF ENTRY BEFORE BEGINNING CONSTRUCTION.
 - PRIOR TO OPEN CUTTING AFFECTED CITY STREETS OR STATE ROADWAYS, NOTIFY PROPER AUTHORITIES AS LISTED IN TECHNICAL SPEC 01-100.
 - SCALE IS SHOWN FOR CONVENIENCE ONLY. DO NOT SCALE DRAWINGS TO OBTAIN DIMENSIONS FOR CONSTRUCTION.
 - GATE VALVES SHALL CONFORM TO AWWA C509 AND SHALL HAVE MECHANICAL OR PUSH-ON JOINT ENDS. VALVES SHALL BE RATED FOR 200 PSI WORKING PRESSURE.
 - FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110. CONCRETE FOR THRUST BLOCKING SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
 - PRIOR TO BEING PLACED IN SERVICE, THE LINE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. THE CONTRACTOR SHALL PERFORM BACTERIOLOGICAL TESTING OF THE DISINFECTED LINE AND DELIVER TEST RESULTS INDICATING ACCEPTABLE DISINFECTION TO THE UTILITY.
 - PRIOR TO REPLACING OR RELOCATING HYDRANTS, WHERE SPECIFIED, CONTRACTOR SHALL VERIFY THE EXISTING SHUTOFF VALVE IS RESTRAINED TO THE LINE TEE. IF NOT, NOTIFY THE OWNER OR ENGINEER'S REPRESENTATIVE BEFORE EXCAVATION FOR FURTHER INSTRUCTION.

ENVIRONMENTAL NOTE:
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, ROOTS, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. AVOID CUTTING OF OR DAMAGE TO MATURE TREES (DBH>5") AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED.

BASEMAP & SCALE NOTE:
 THE BASEMAP FOR THIS DRAWING IS BASED ON THE 'MORTONS GAP WATER DEPARTMENT WATER SYSTEM' MAP, PREPARED BY PENNYVILLE AREA DEVELOPMENT DISTRICT (DATED MAY 2019). LINE LOCATIONS AND SIZES ARE BASED ON THIS MAPPING INFORMATION. FIELD VERIFY FOR EXACT LOCATIONS AND SIZES. THE CONTRACTOR SHALL CONTACT 811 FOR 'KENTUCKY UNDERGROUND PROTECTION, INC.', AS WELL AS OTHER UTILITIES, PIPELINE COMPANIES, ETC. POTENTIALLY HAVING UNDERGROUND LINES, UTILITIES, STRUCTURES, ETC. IN THE AREA FOR VERIFICATION AND LOCATION PRIOR TO EXCAVATION.

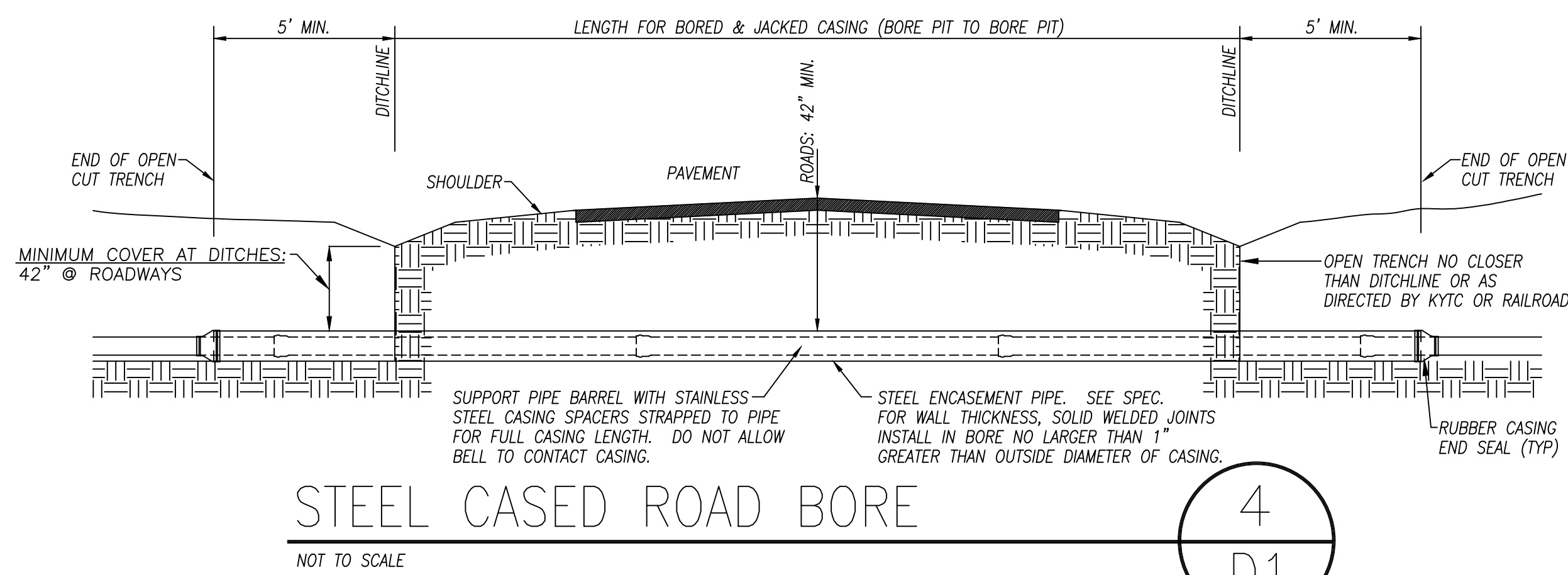
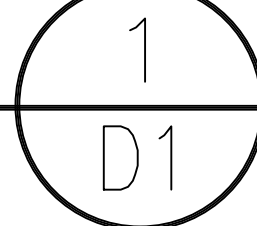


PIPE SIZE	MINIMUM BEARING AREA ("A"x"B") IN SQUARE FEET					MIN. CONC. VOLUME IN CUBIC FEET	REBAR SIZE
	TEE OR DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND		
2", 3" & 4"	1.0	1.5	1.0	1.0	1.0	2	#4
6"	2.5	3.0	2.0	1.0	1.0	5	#4
8"	4.0	5.5	3.0	1.5	1.0	8	#5
10"	6.0	8.5	4.5	2.5	1.5	13	#5
12"	8.5	12.0	6.5	3.0	2.0	18	2-#5
16"	15.0	21.5	11.5	6.0	3.0	32	2-#6

- NOTES
1. CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
 2. KEEP CONCRETE CLEAR OF JOINTS, GLAND BOLTS, ETC.
 3. CONCRETE THRUST BLOCKS SHALL BE CAST AGAINST SOUND, UNDISTURBED EARTH.
 4. BEARING AREAS ARE BASED ON 4,000 PSF SOIL BEARING CAPACITY. WEAKER SOILS MAY REQUIRE LARGER THRUST BLOCKS.
 5. THRUST BLOCK BEARING AREAS MAY BE REDUCED IN ROCK SUBJECT TO ENGINEER'S APPROVAL.
 6. VALVES REQUIRE ONE REBAR STRAP AS SHOWN IN THE TABLE AT EACH END OF THE VALVE.
 7. WHERE CONTRACTOR SUSPECTS THAT UNSUITABLE BEARING CONDITIONS EXIST, NOTIFY ENGINEER PRIOR TO CASTING THRUST BLOCK.

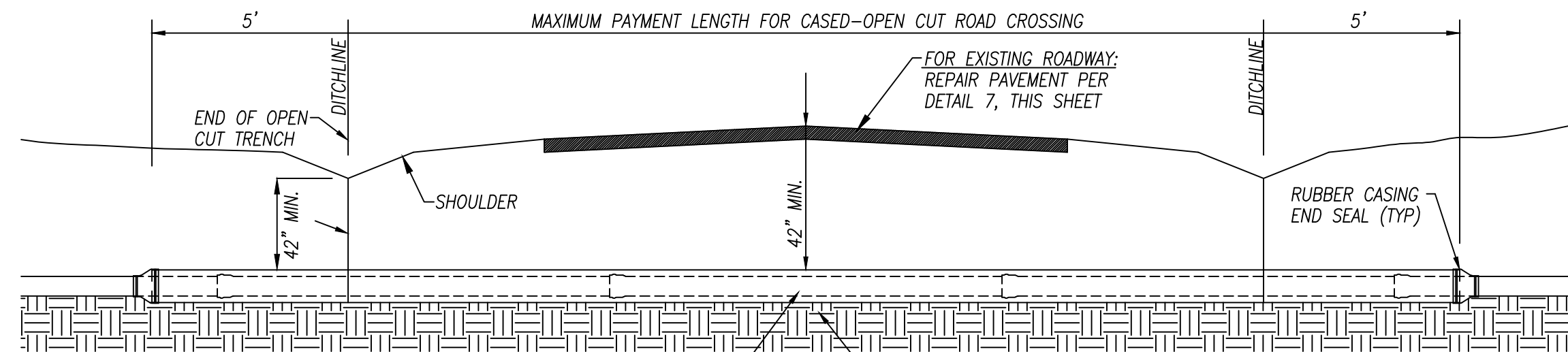
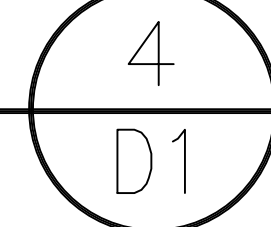
CONCRETE THRUST BLOCKS

NOT TO SCALE



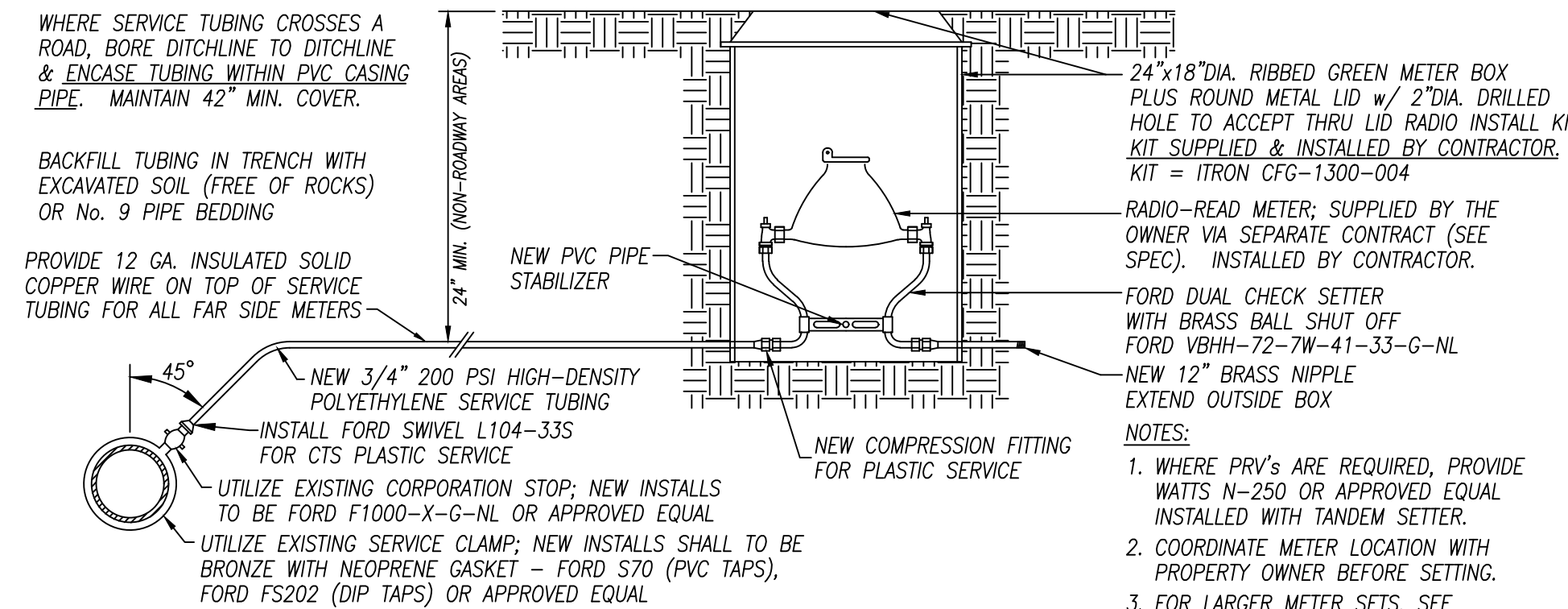
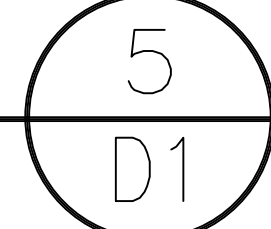
STEEL CASED ROAD BORE

NOT TO SCALE



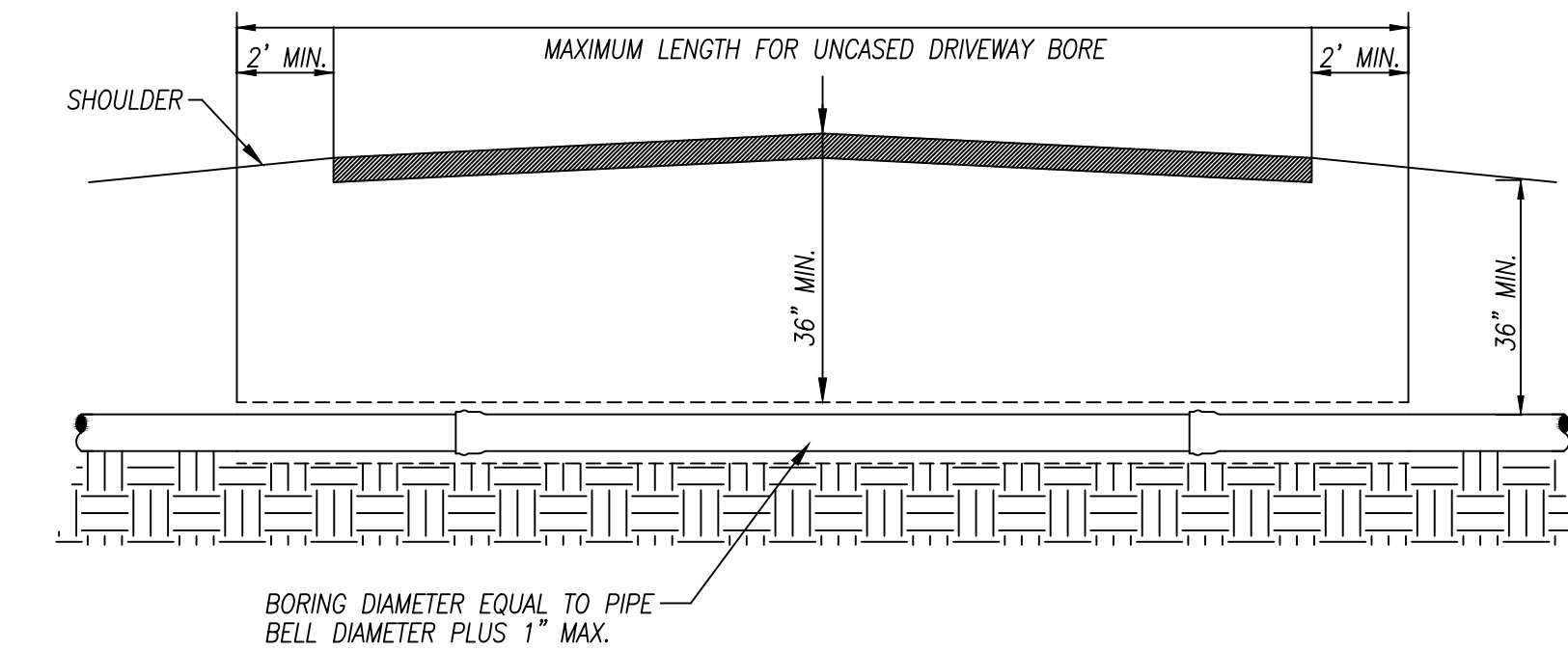
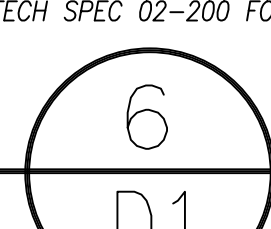
CASED-OPEN CUT ROAD CROSSING

NOT TO SCALE



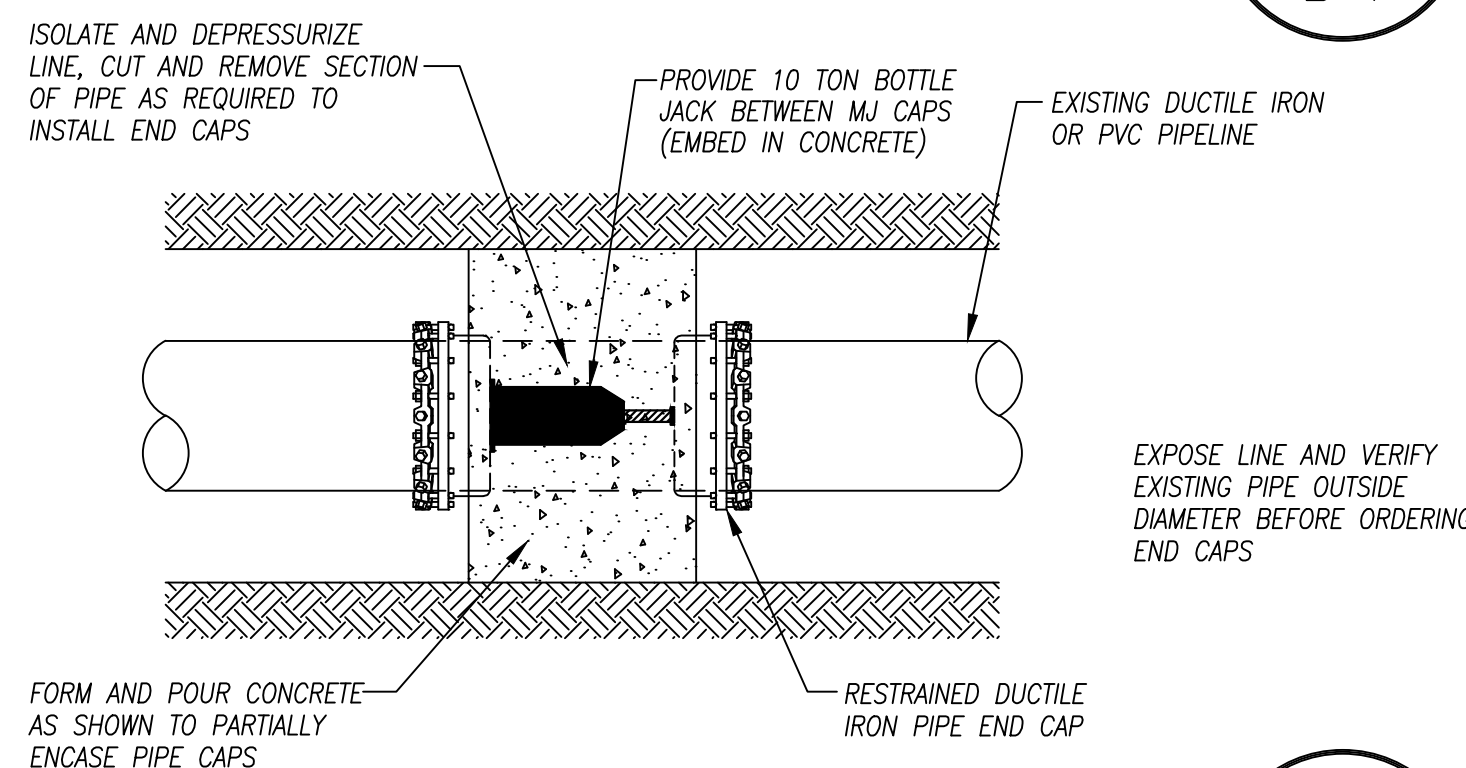
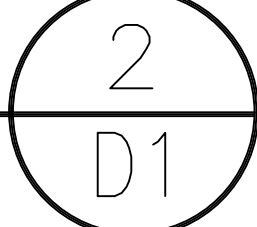
3/4" TYPICAL METER SETTING

NOT TO SCALE



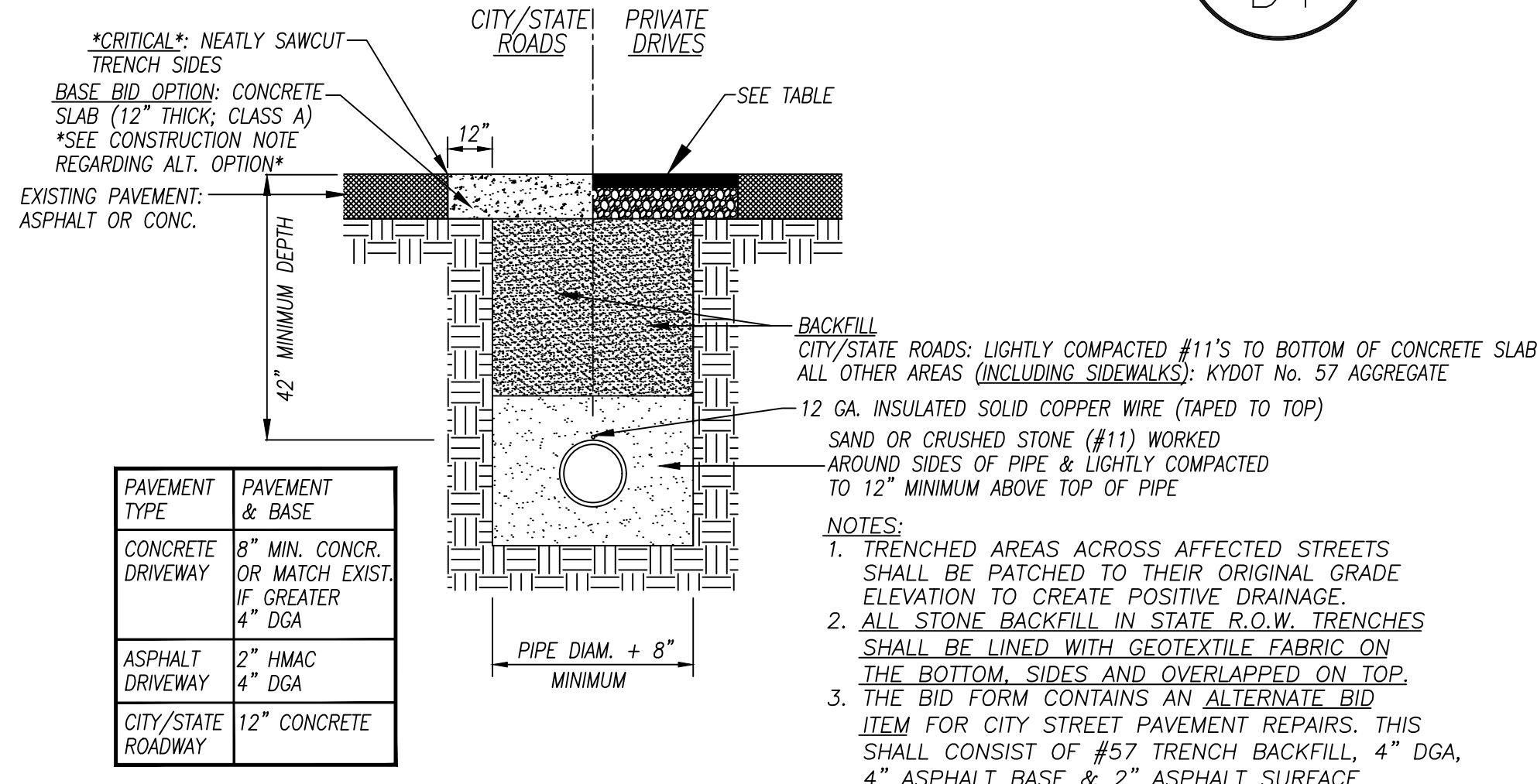
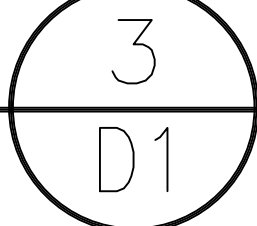
UNCASSED DRIVEWAY BORE

NOT TO SCALE



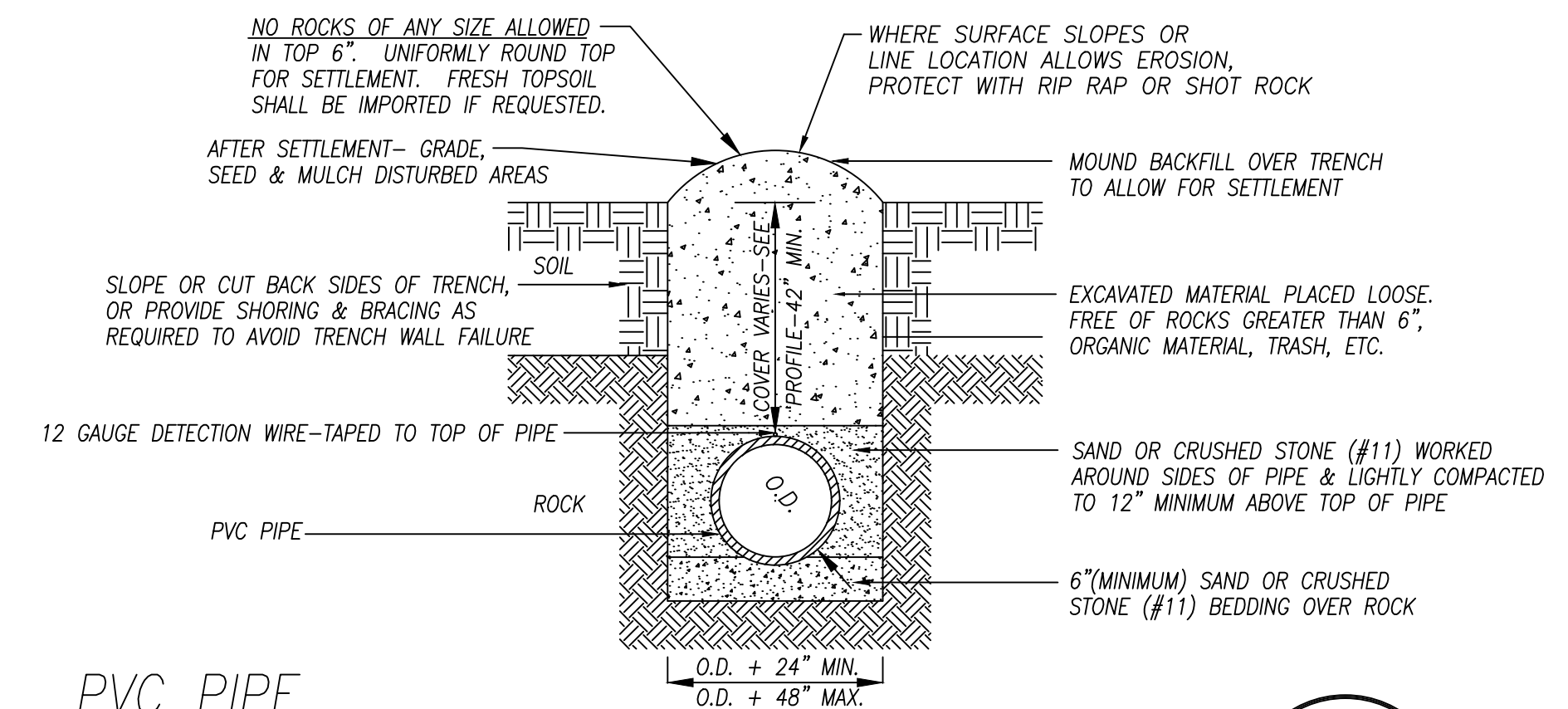
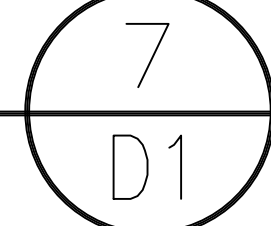
CUT & PLUG EXISTING LINE DETAIL

NOT TO SCALE



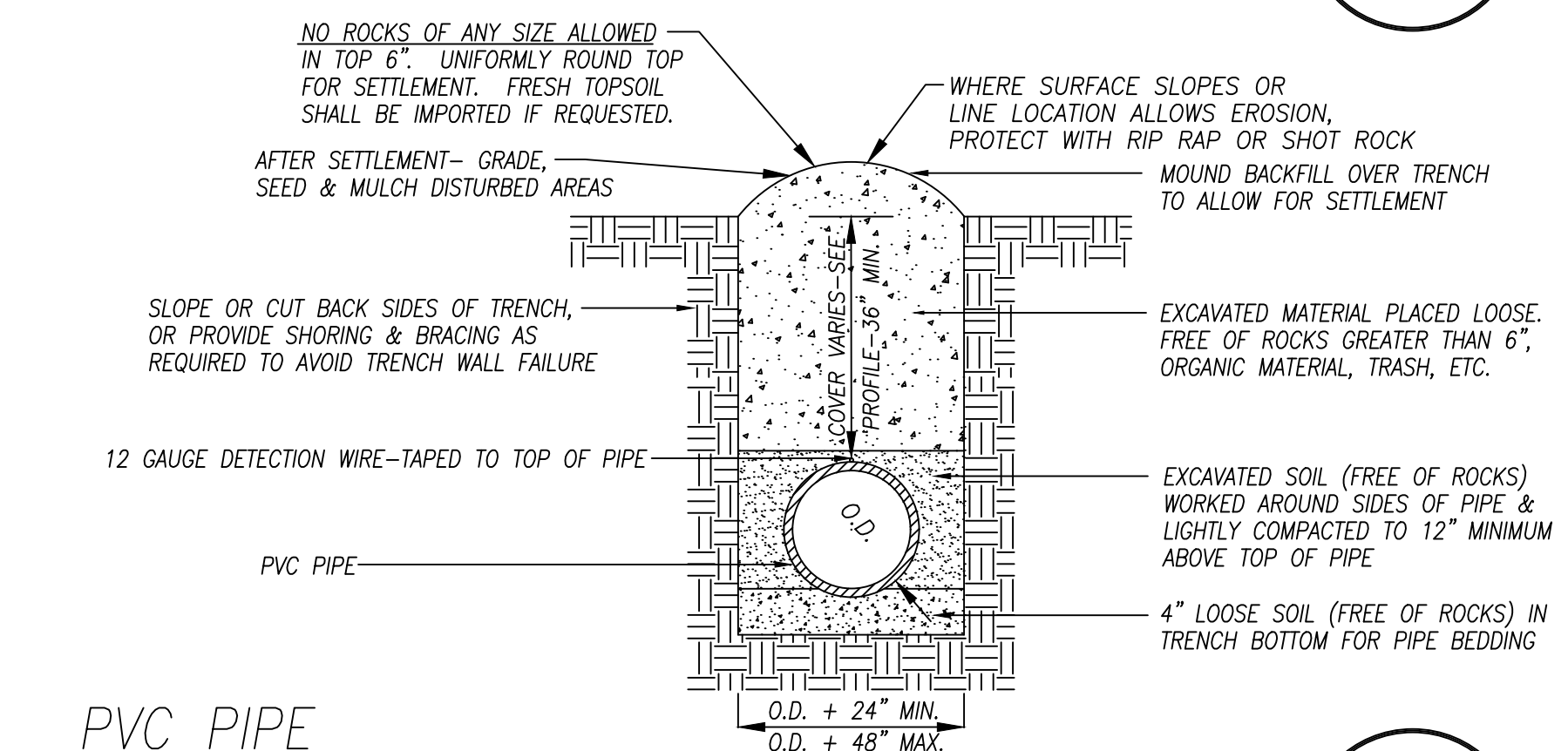
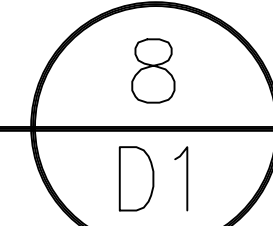
PAVEMENT BACKFILL & REPAIR

NOT TO SCALE



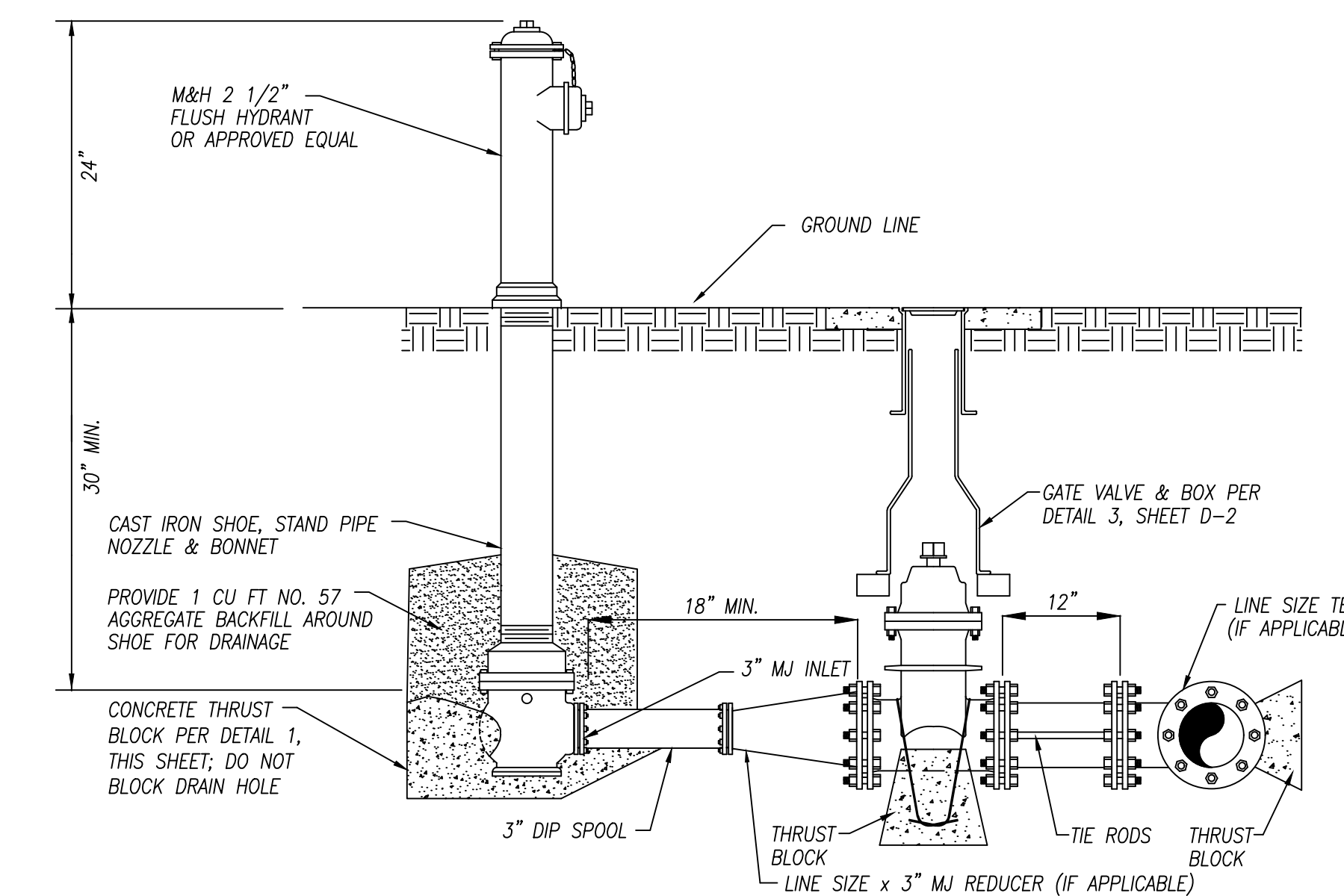
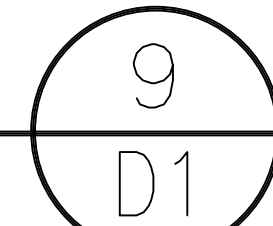
PVC PIPE BEDDING & BACKFILL - ROCK

NOT TO SCALE



PVC PIPE BEDDING & BACKFILL - SOIL

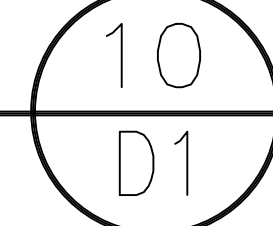
NOT TO SCALE



1. THIS SIZE HYDRANT IS APPLICABLE ONLY FOR 4-INCH AND 3-INCH LINE EXTENSIONS.
2. FLUSHING HYDRANTS ARE INTENDED FOR WATER LINE FLUSHING ONLY AND ARE NOT INTENDED OR SUITABLE FOR FIRE PROTECTION.
3. COORDINATE LOCATION IN THE FIELD WITH THE ENGINEER/OWNER PRIOR TO CONSTRUCTION.

SMALL HYDRANT w/ VALVE

NOT TO SCALE



REVISIONS	
NO.	DATE
1	02-15-21
2	CWW
3	BY

McGHEE ENGINEERING
202 Ewing Street
Guthrie, KY 42234
(270) 483-9885

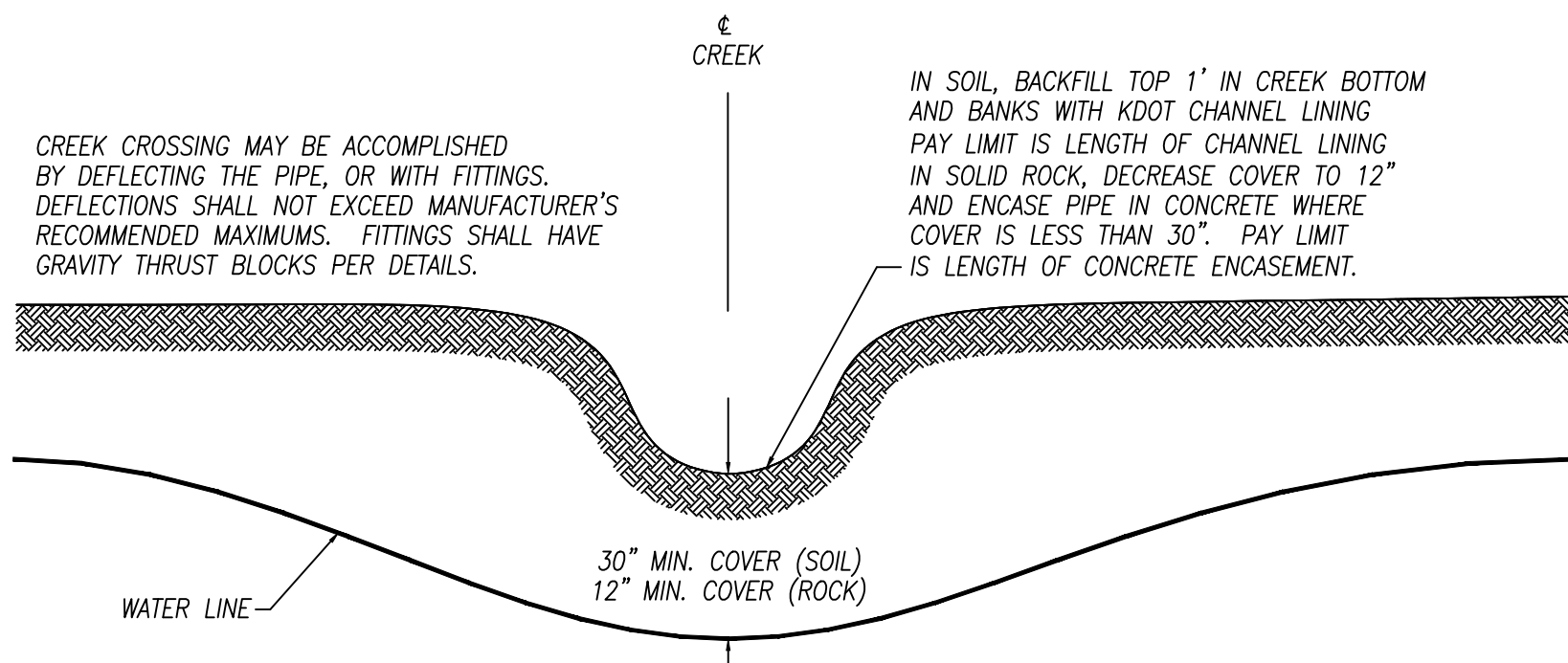
MORTONS GAP WATER & SEWER
P.O. Box 367
Mortons Gap, KY 42440
(270) 256-5362

FIRM: McGhee
DES BY: CWW
CHK BY: CWW
APP BY: CWW
SCALE: AS SHOWN
PROJECT DATE: 2021
PRINTED: []
LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

City of Mortons Gap, Kentucky
WATER SYSTEM REHAB. & UPGRADE PROJECT
Contract 3 - System-wide Improvements
Water Line Details

Quality On Tap!

February 15, 2021
Chris Wilcutt
Chris Wilcutt, P.E.

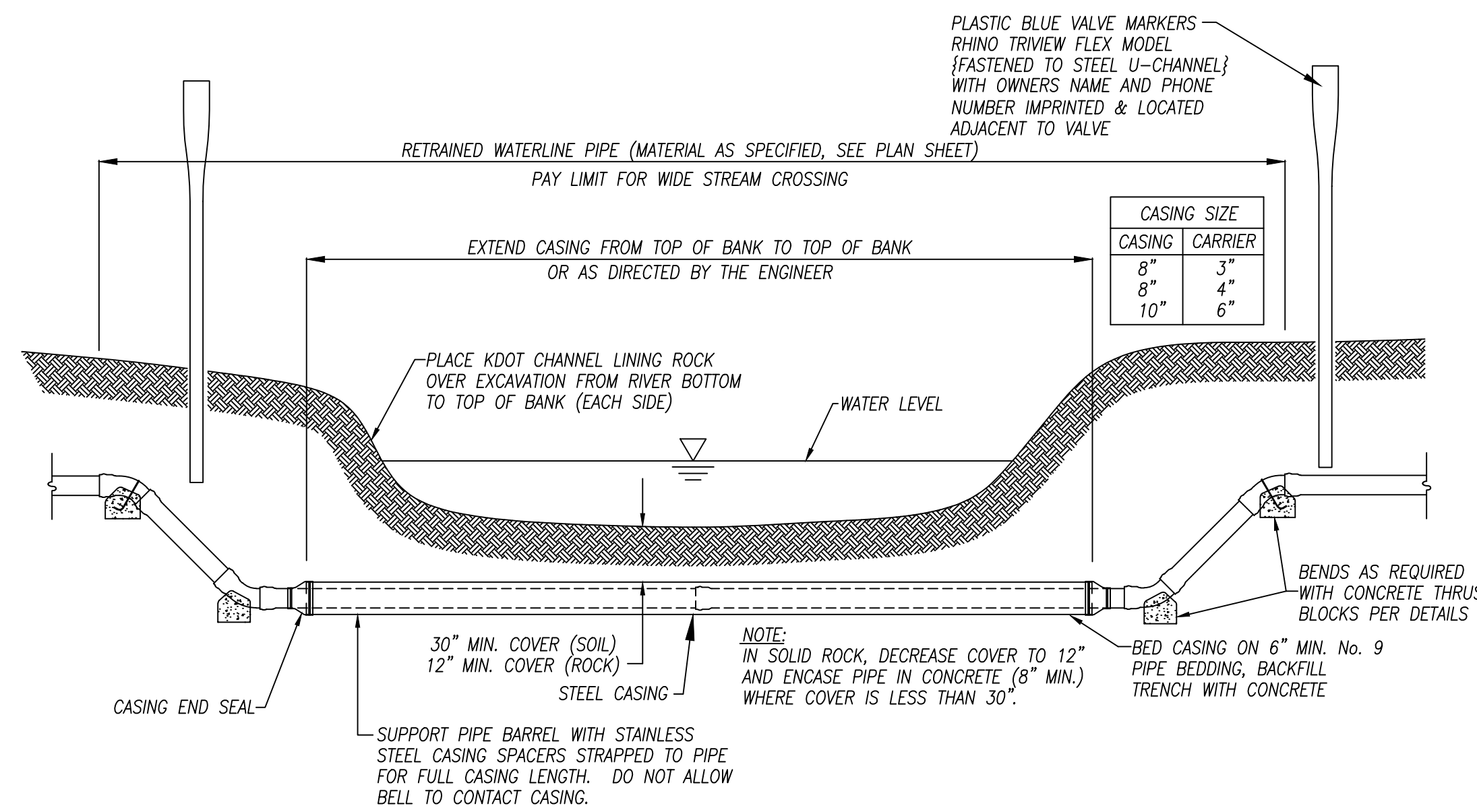


WHERE ENCASED IN CONCRETE (I.E. ROCK) PROVIDE SDR 35 PVC COVER PIPE 2' BEYOND END OF CONCRETE ENCASUREMENT CLOSE ENDS WITH END SEALS SUPPORT CARRIER PIPE WITH CASING SPACERS

SHALLOW DITCH/CREEK X-ING

NOT TO SCALE

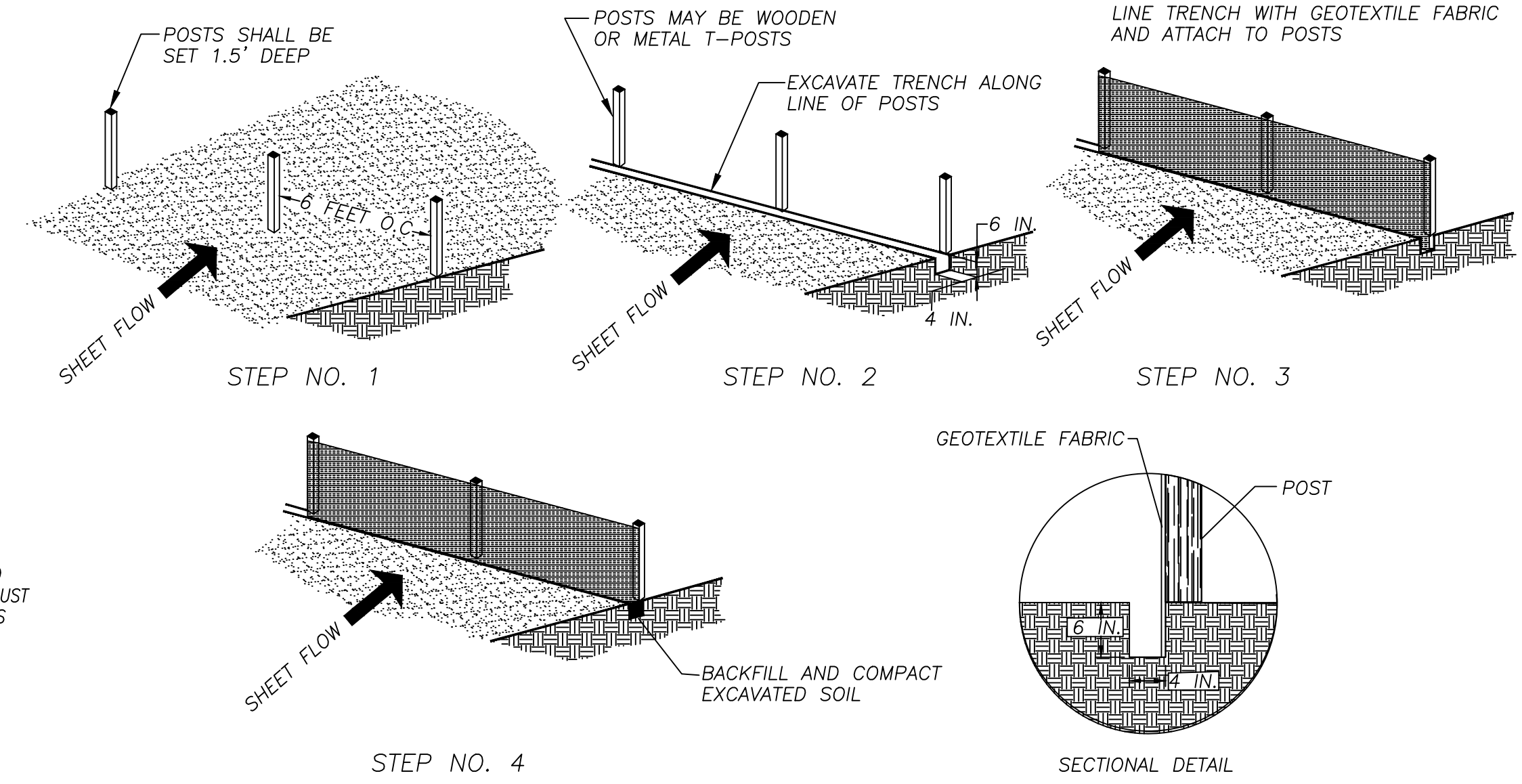
1
D2



WIDE STREAM CROSSING DETAIL

NOT TO SCALE

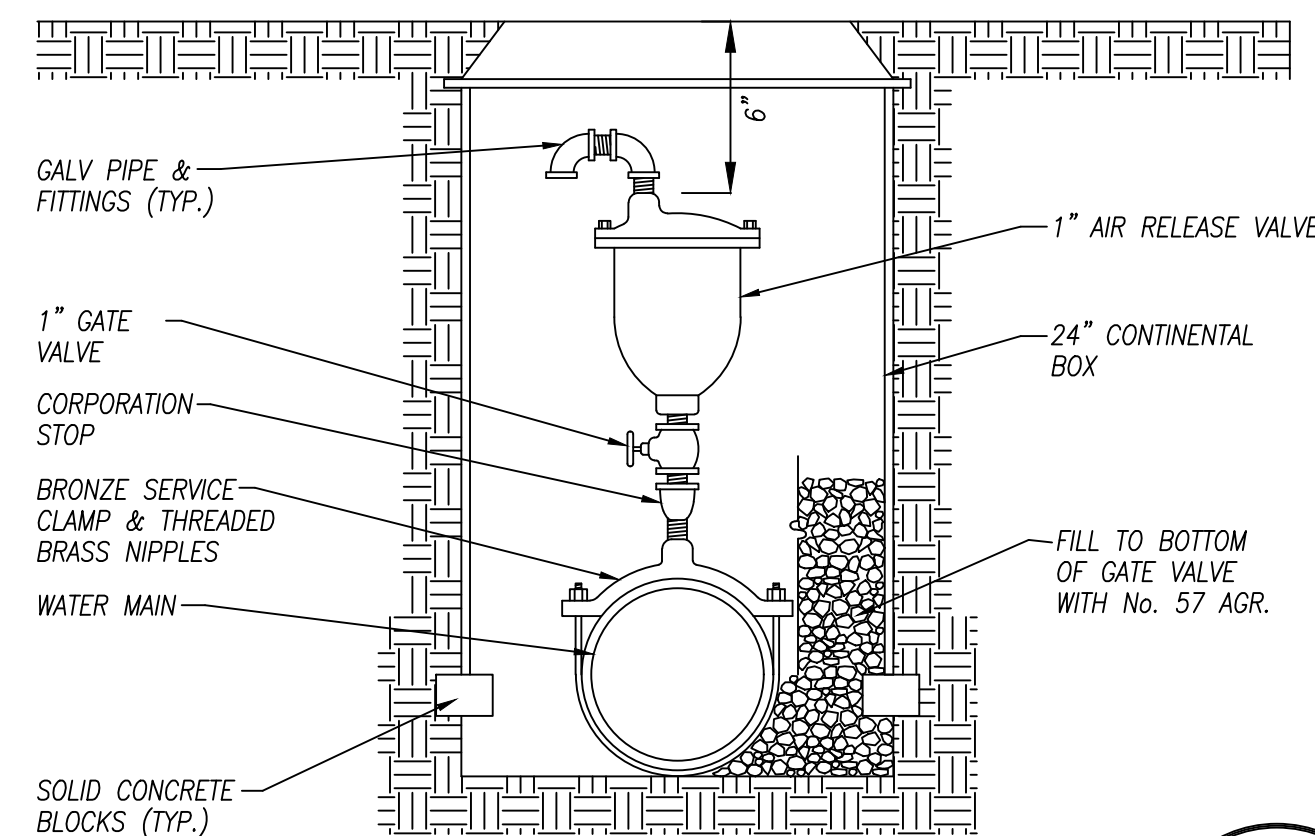
4
D2



SILT FENCE DETAIL

NOT TO SCALE

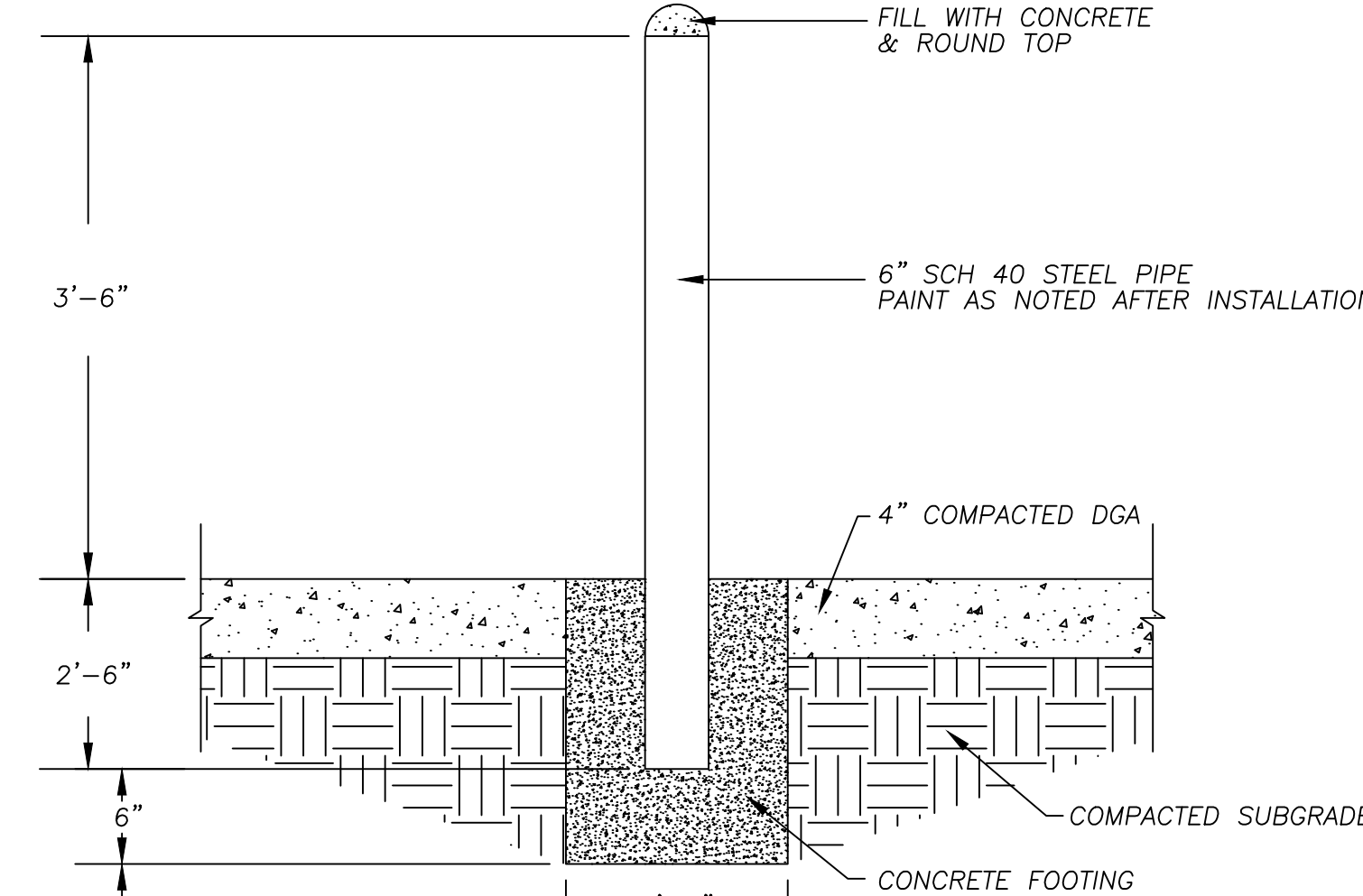
7
D2



AIR RELEASE VALVE DETAIL

NOT TO SCALE

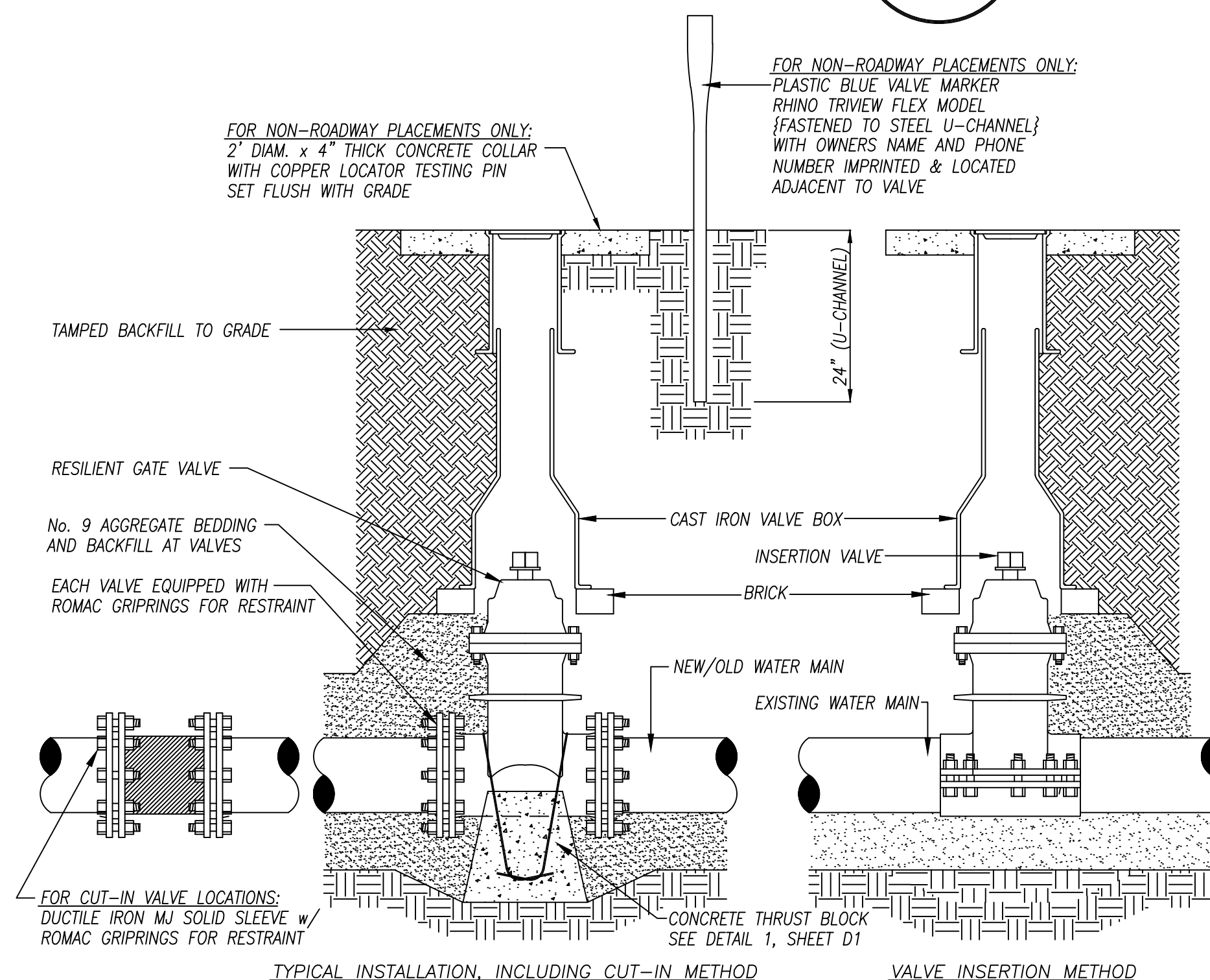
2
D2



PIPE BOLLARD DETAIL

NOT TO SCALE

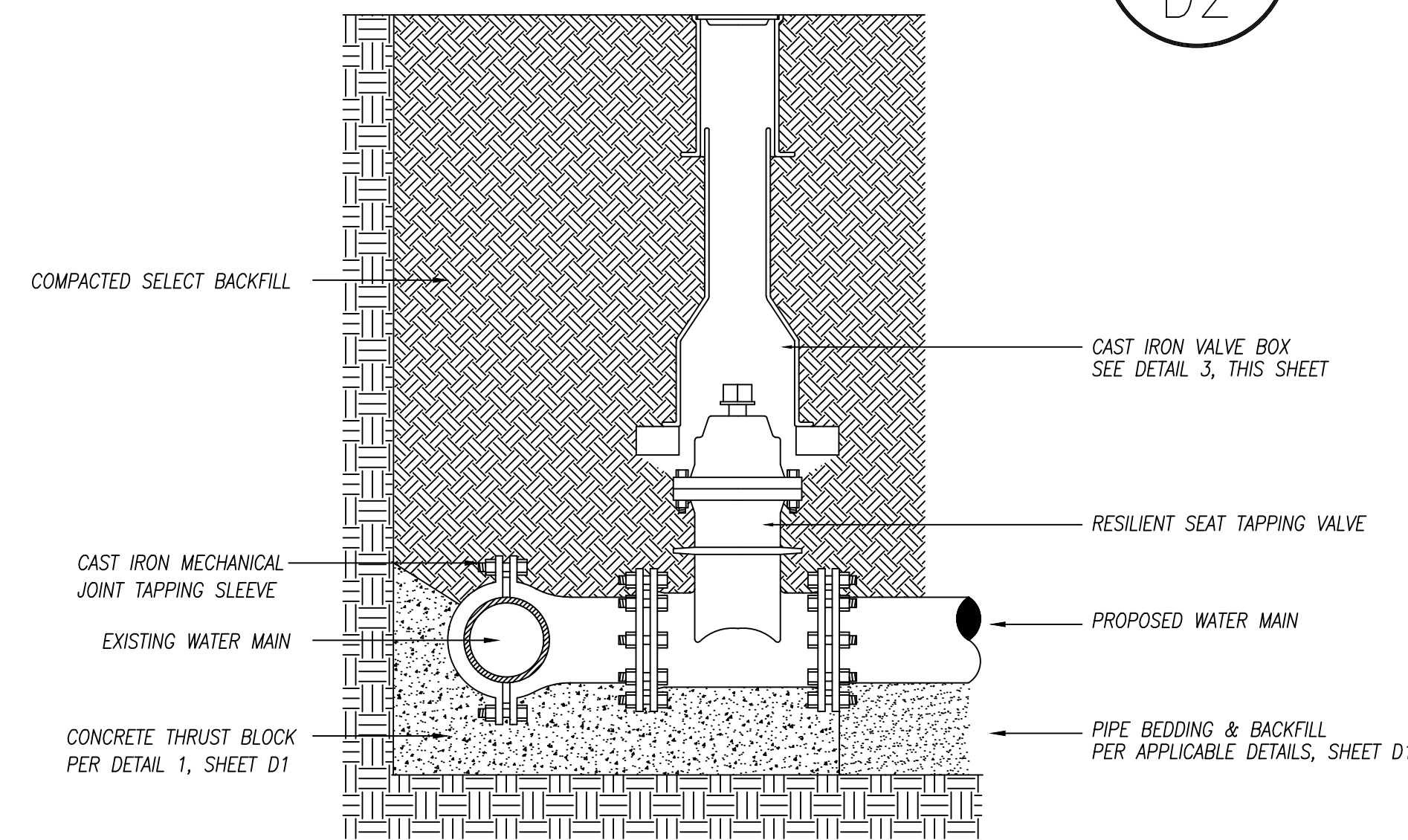
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D2



VALVE SETTING DETAILS

NOT TO SCALE

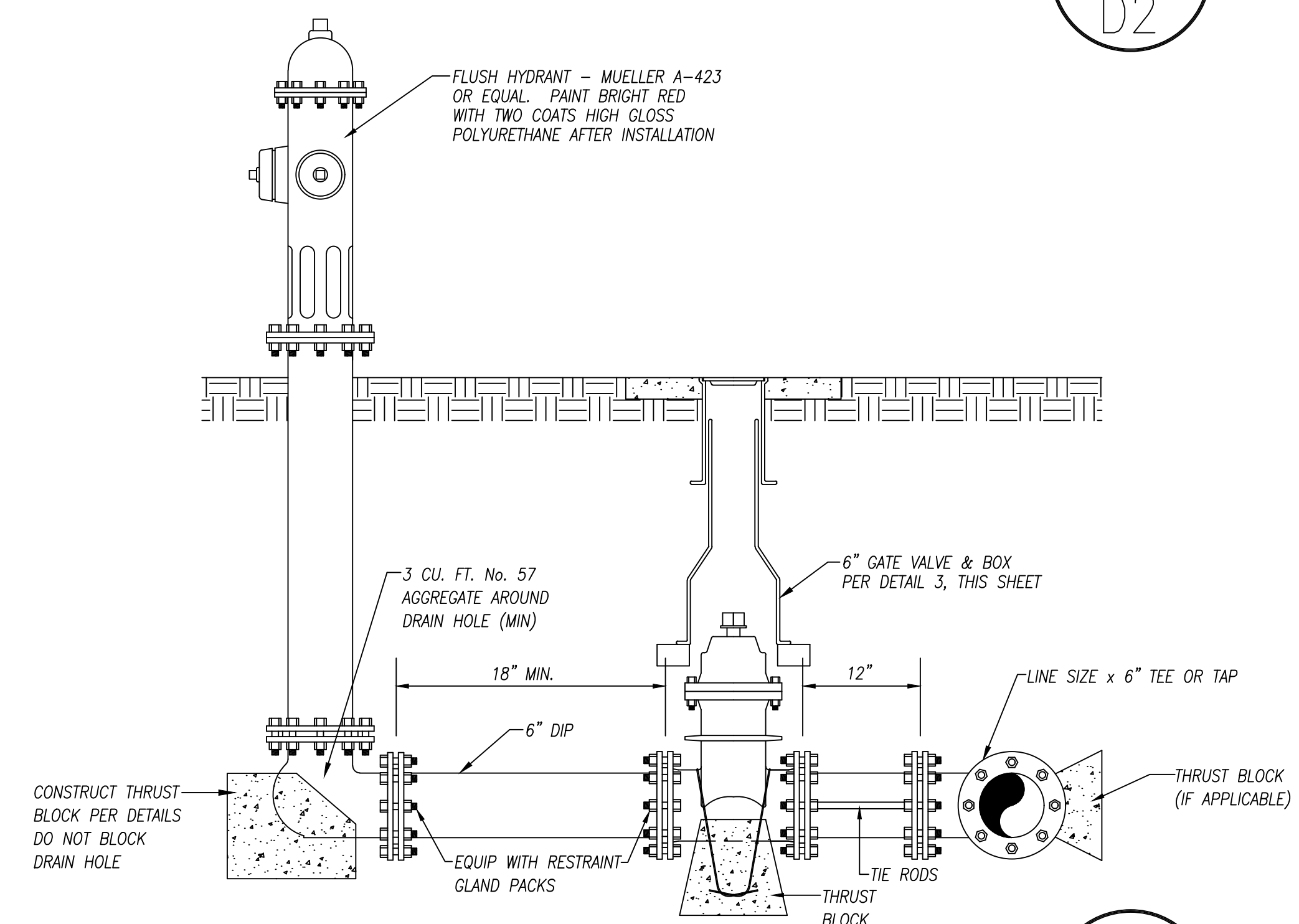
3
D2



TAPPING SLEEVE & VALVE

NOT TO SCALE

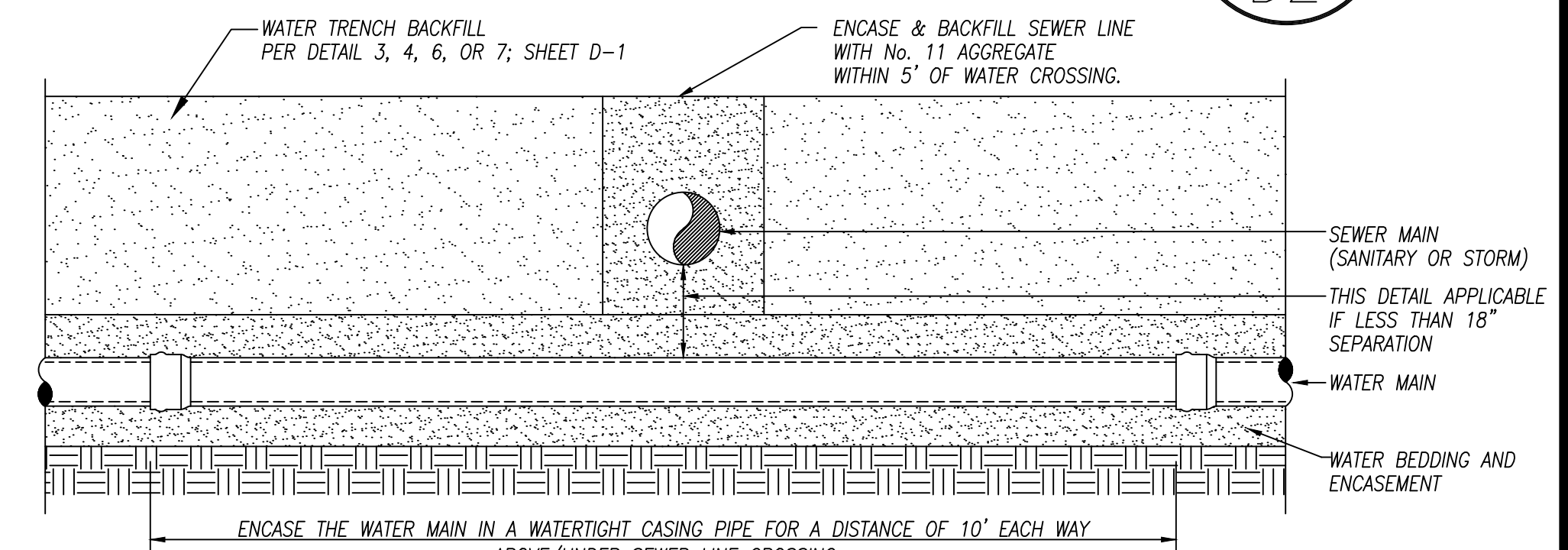
6
D2



LARGE HYDRANT w/ VALVE

NOT TO SCALE

8
D2



NOTES:
1. IF DRINKING WATER AND SANITARY OR COMBINED SEWER LINES COME WITHIN TEN FEET OF EACH OTHER HORIZONTALLY, THE WATER LINE SHALL, WHERE PRACTICABLE, BE PLACED AT LEAST TWO FEET HORIZONTALLY AND EIGHTEEN INCHES VERTICALLY AWAY FROM THE SANITARY OR COMBINED SEWER LINE (MEASURE FROM THE OUTSIDE OF THE PIPES) IN SEPARATE TRENCHES OR ON UNDISTURBED EARTH SHELVES WITH THE WATER LINE BEING PLACED ABOVE THE SEWER LINE.
2. WHERE THE WATER LINES COME WITHIN EIGHTEEN INCHES OF SEWER LINES VERTICALLY OR WHERE THE STIPULATIONS OF ITEM 1 (ABOVE) CANNOT BE MET FOR HORIZONTAL SEPARATION, ENCASE THE WATER MAIN IN A WATERTIGHT CARRIER PIPE FOR A DISTANCE OF AT LEAST 10 FEET BEYOND WHERE SEPARATION REQUIREMENTS ARE MET.

SEWER LINE CROSSING

NOT TO SCALE

9
D2

NO.	REVISION	DATE	BY
1	FOR RCDW REVIEW	02-15-21	CWW

MCGHEE ENGINEERING
202 Ewing Street
Guthrie, KY 42234
(270) 483-9985

MORTONS GAP WATER & SEWER
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Mortons Gap, KY 42440
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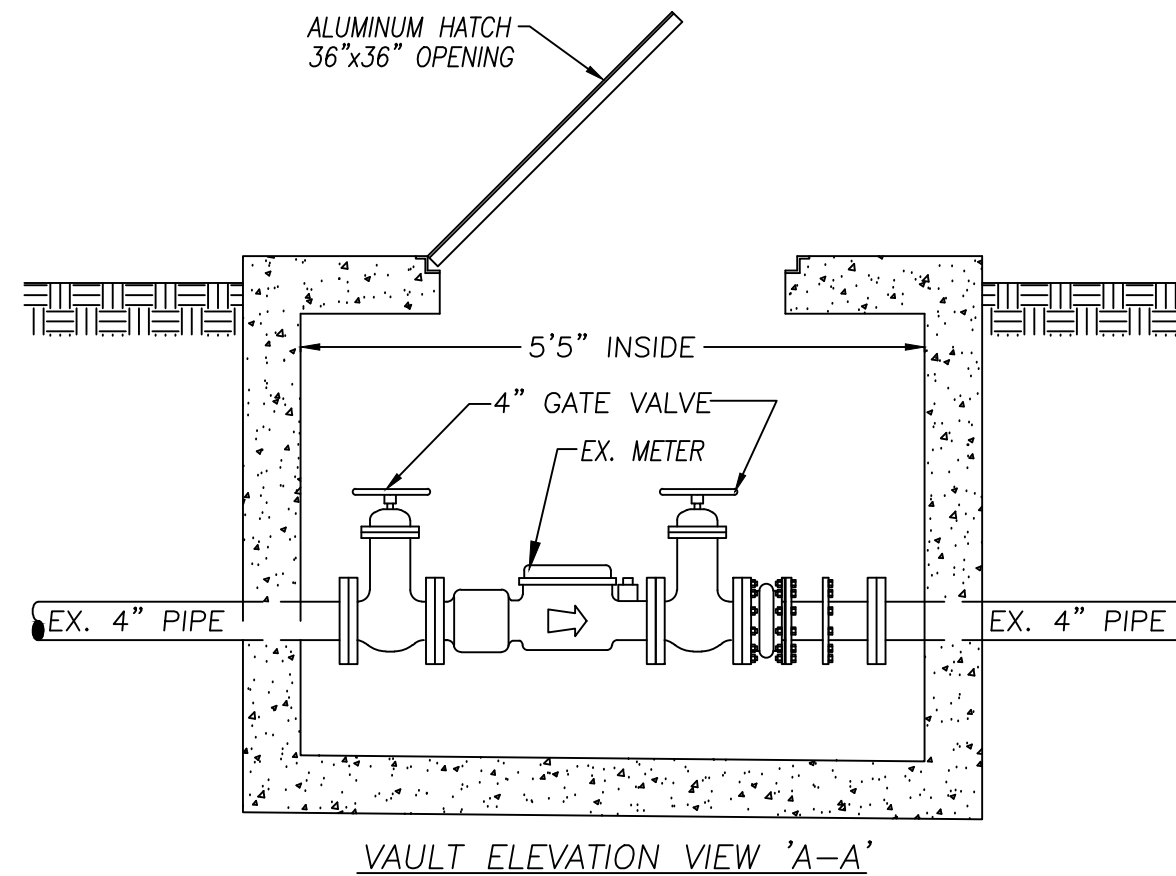
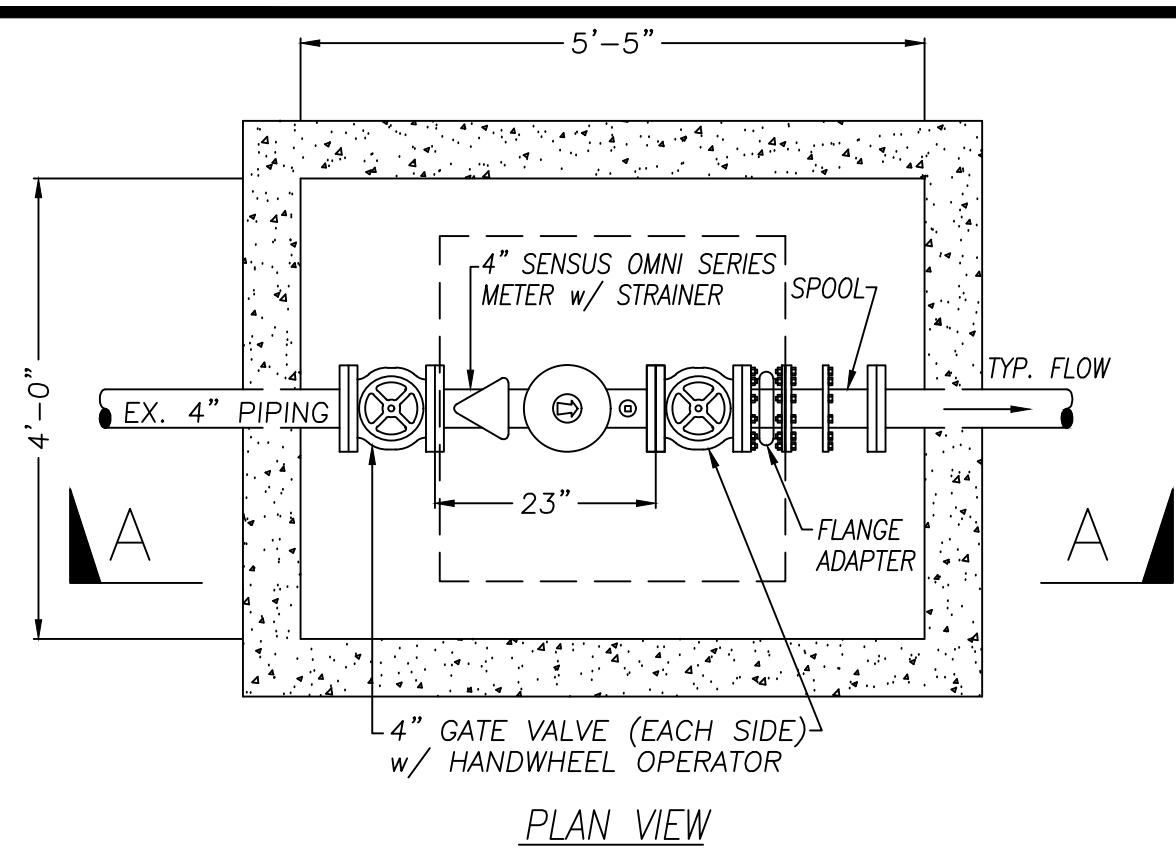
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SCALE: AS SHOWN
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Quality On Tap!

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Chris Wilcutt, P.E.

DRAWING NO.
SHEET D-2

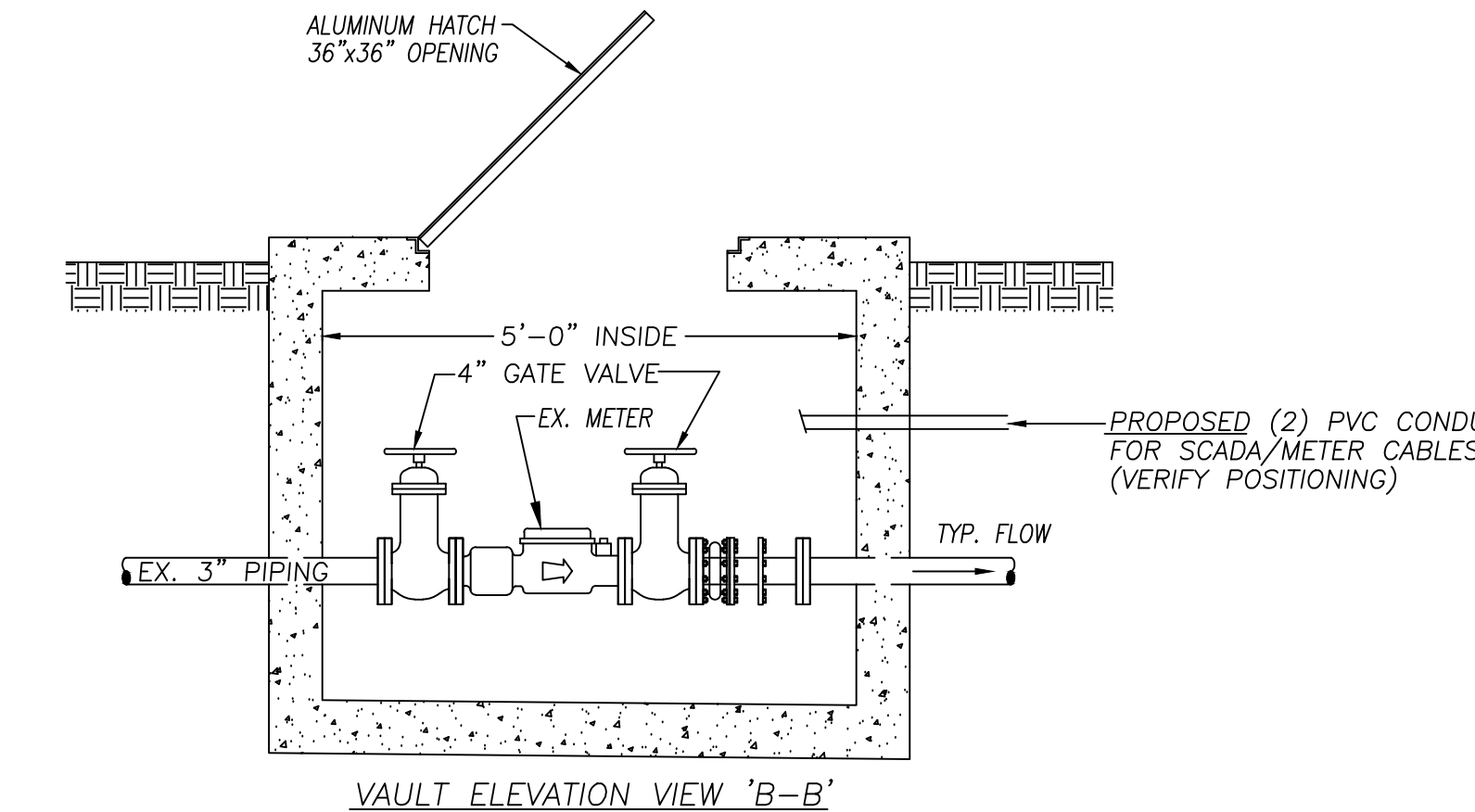
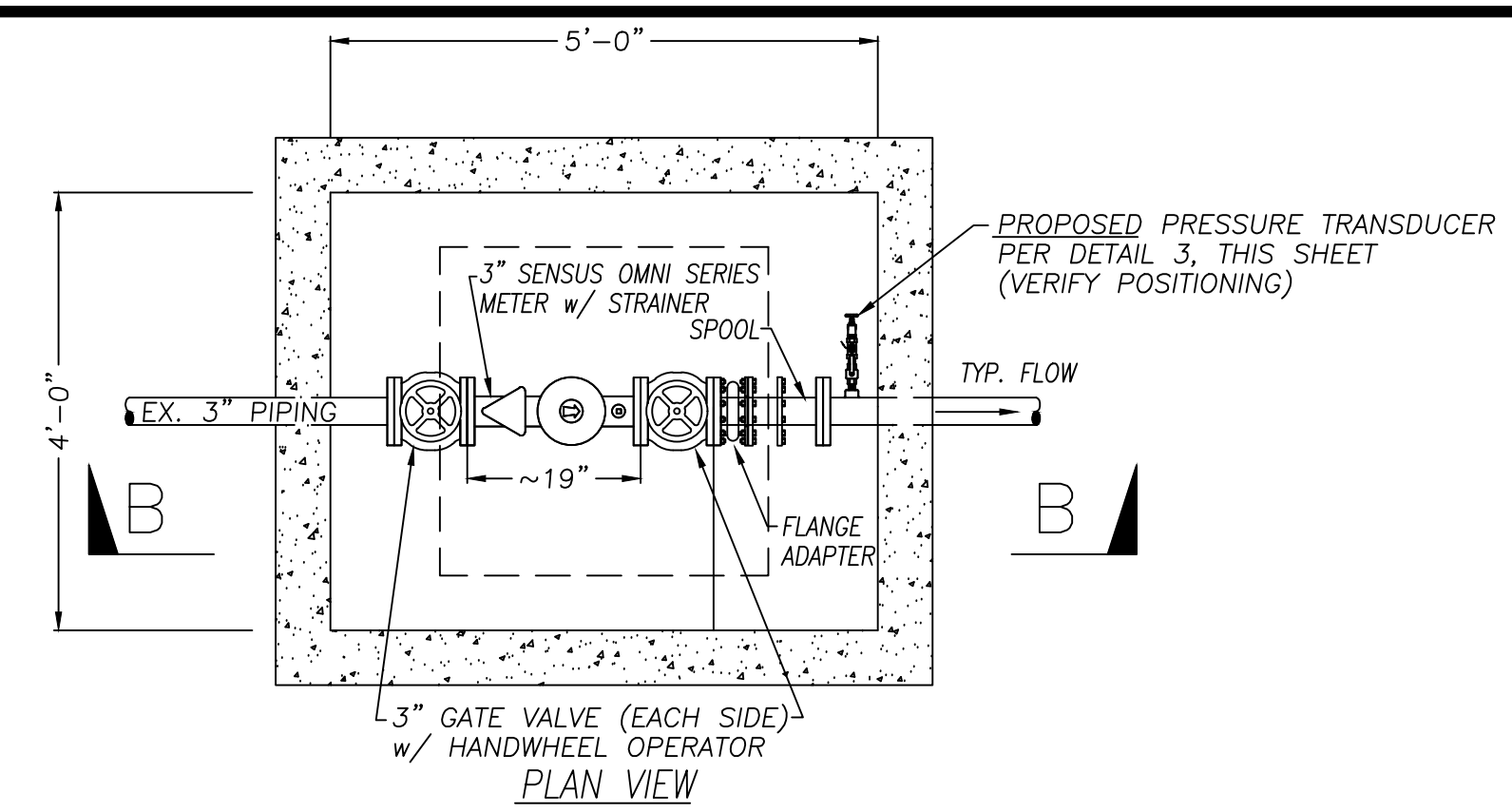


OPERATION NOTES:
 1. EXISTING 4" SENSUS OMNI METER RETROFITTED & MODIFIED WITH RADIO-READ COMPATIBLE EQUIPMENT (BY OTHERS).
 2. NO MODIFICATIONS ARE PROPOSED IN THE PROJECT AT THIS SITE. ILLUSTRATION FOR INFORMATIONAL PURPOSES ONLY.

EX. TRUCK STOP METER – SITE 7
 SINGLE MAINLINE MASTER METER

NOT TO SCALE

1
 D3

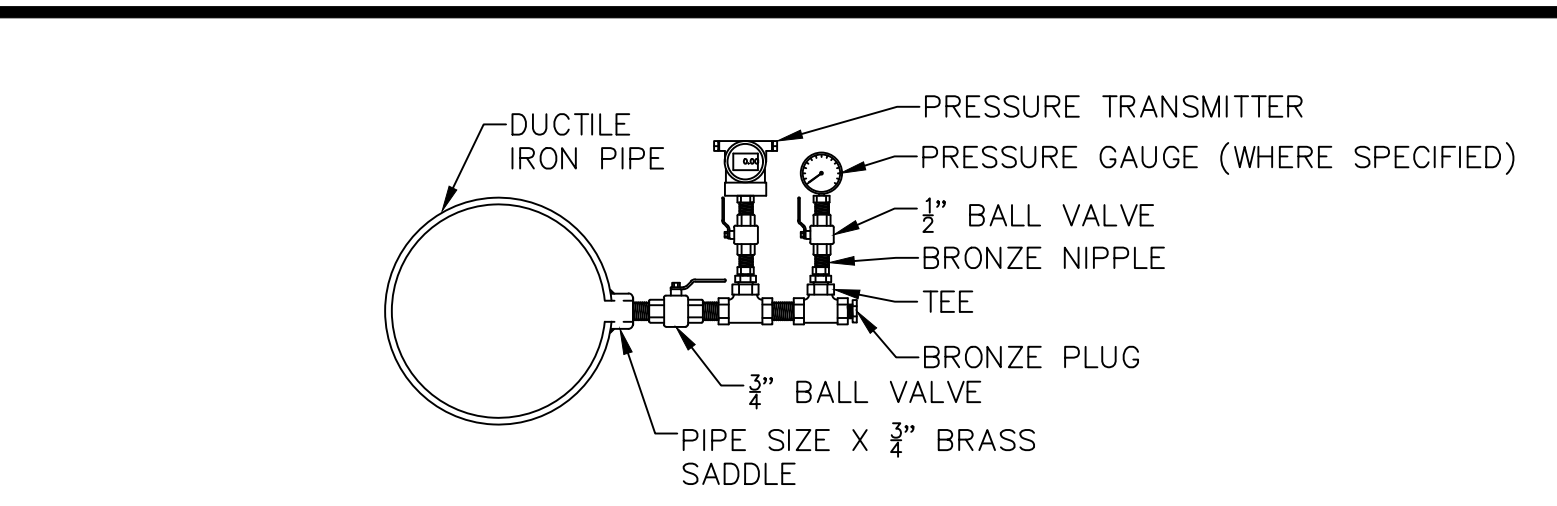


OPERATION NOTES:
 1. EXISTING 3" SENSUS OMNI METER RETROFITTED & MODIFIED WITH RADIO-READ COMPATIBLE EQUIPMENT (BY OTHERS).
 2. FOR PROPOSED MODIFICATIONS, SEE 'SCOPE OF WORK' NOTES ON PLAN SHEET P-6.

EX. FREE HENRY RD. METER – SITE 4
 SINGLE MAINLINE MASTER METER

NOT TO SCALE

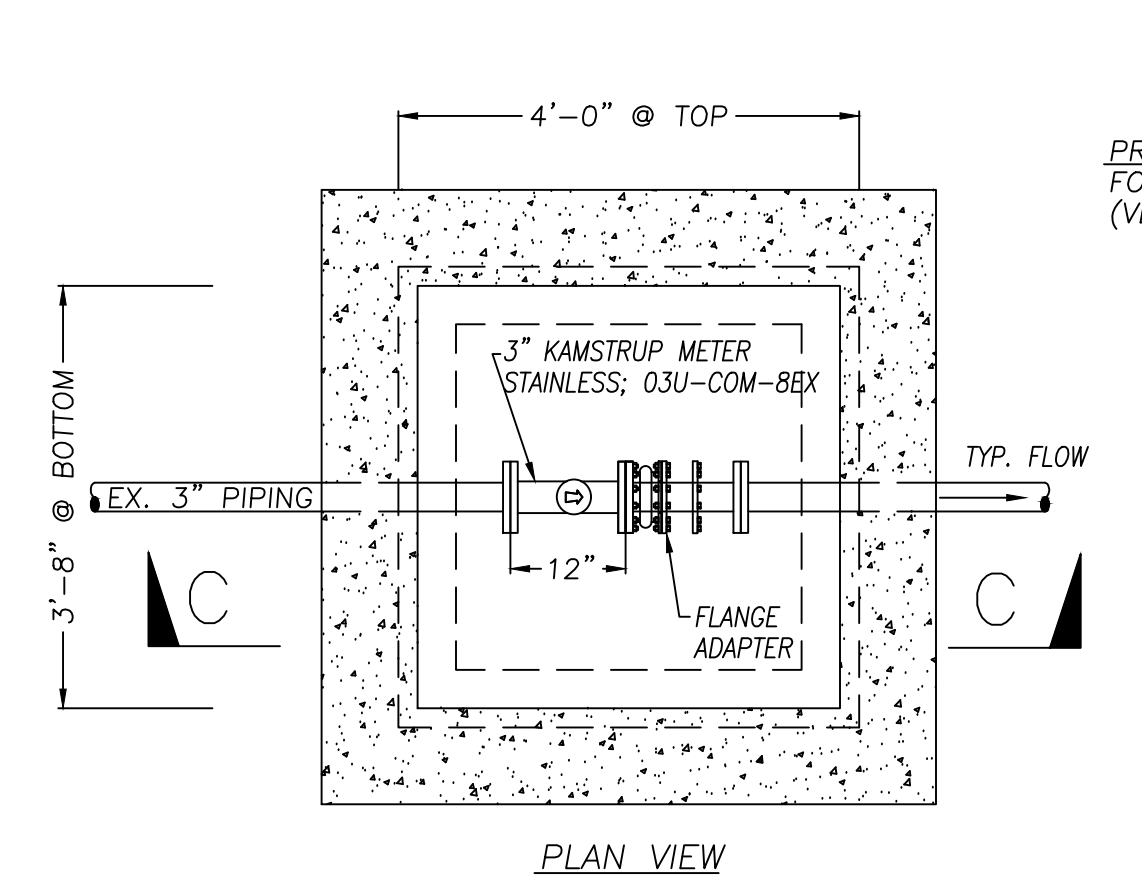
2
 D3



PRESSURE TRANSDUCER TAP

NOT TO SCALE

3
 D3

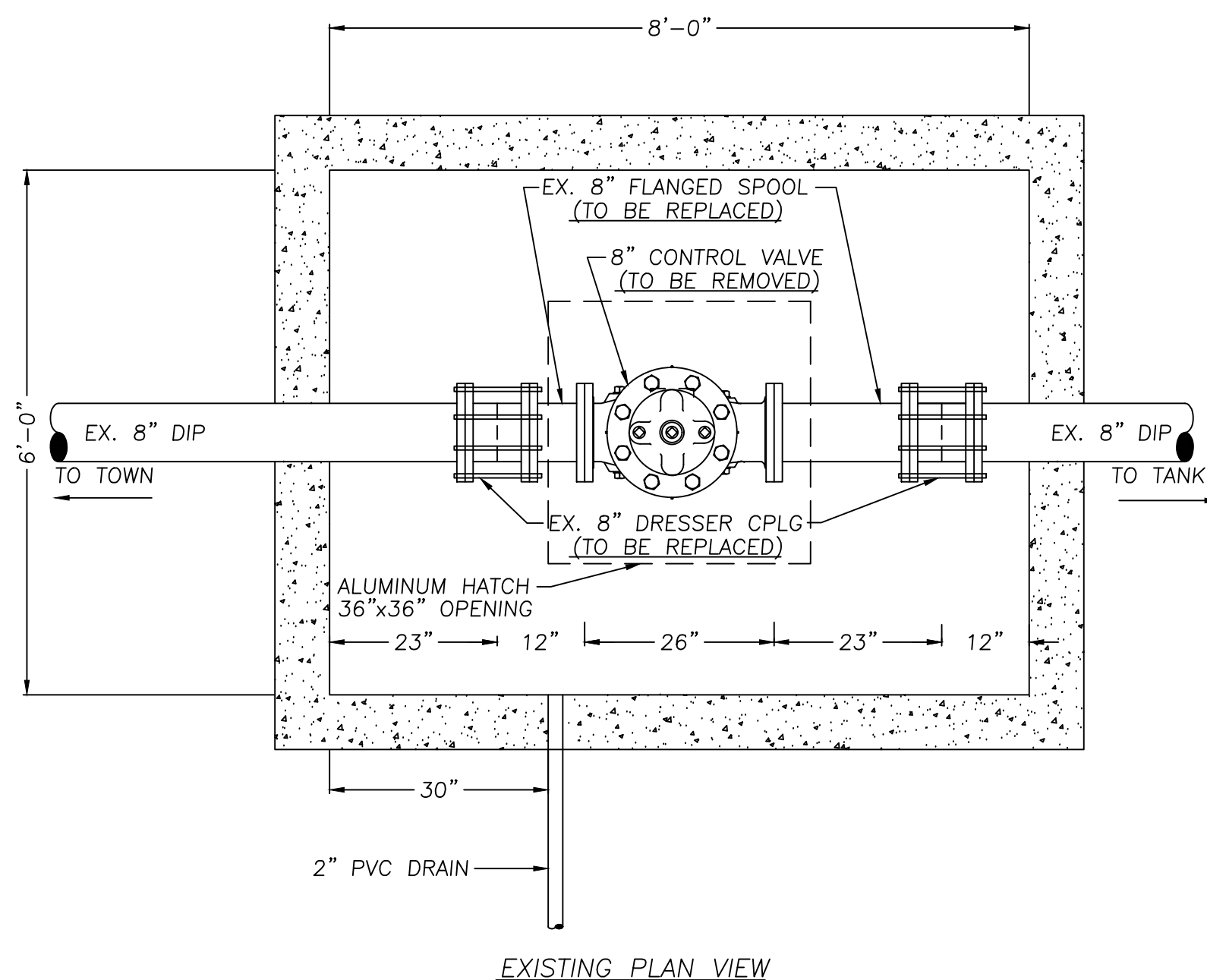


OPERATION NOTES:
 1. EXISTING 3" KAMSTRUP (03U-23-COM-BEX) METER INSTALLED & EQUIPPED WITH RADIO-READ COMPATIBLE EQUIPMENT (BY OTHERS).
 2. FOR PROPOSED MODIFICATIONS, SEE 'SCOPE OF WORK' NOTES ON PLAN SHEET P-6.

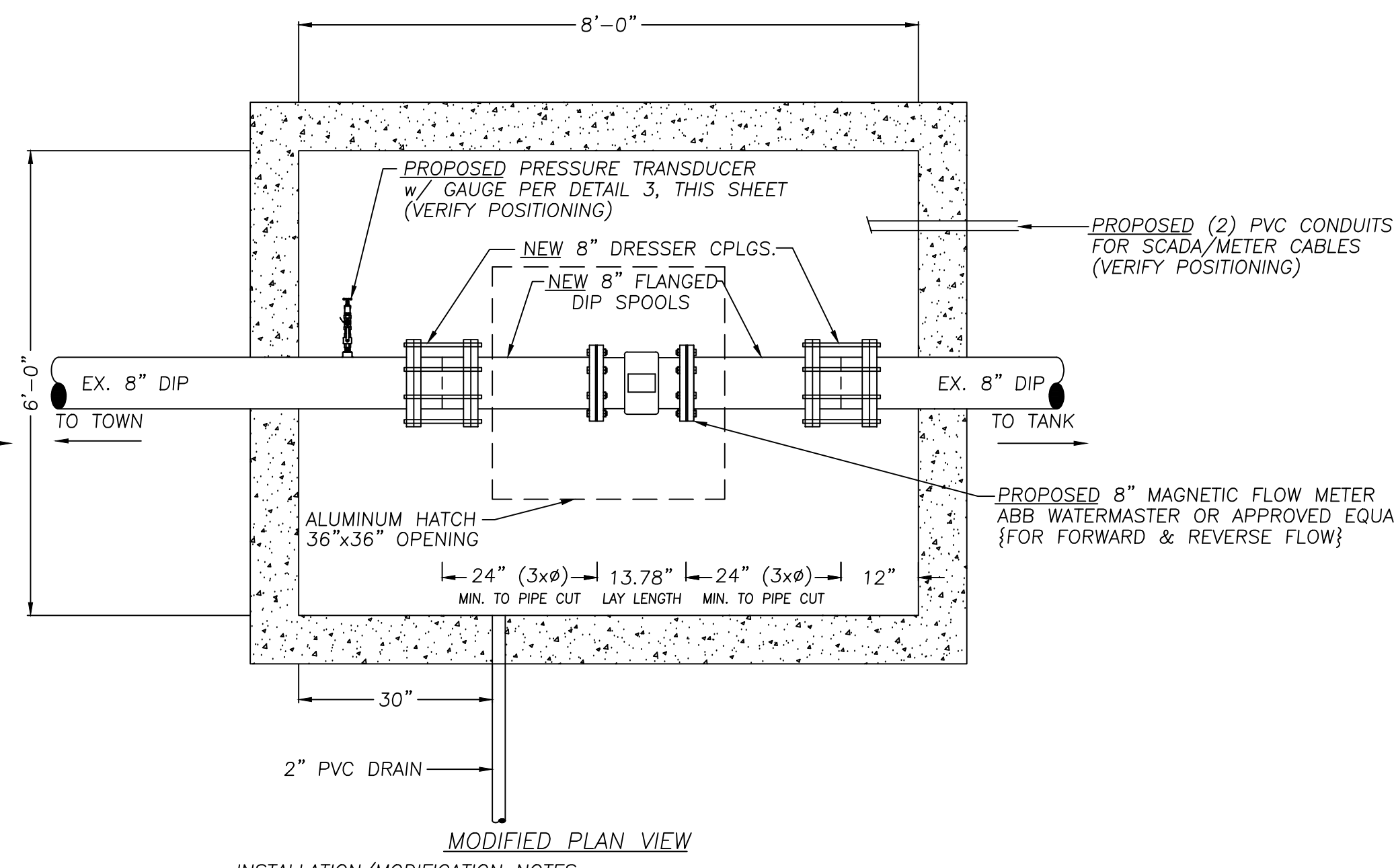
EX. WHITE CITY ROAD METER – SITE 5
 SINGLE MAINLINE MASTER METER

NOT TO SCALE

4
 D3



EXISTING PLAN VIEW

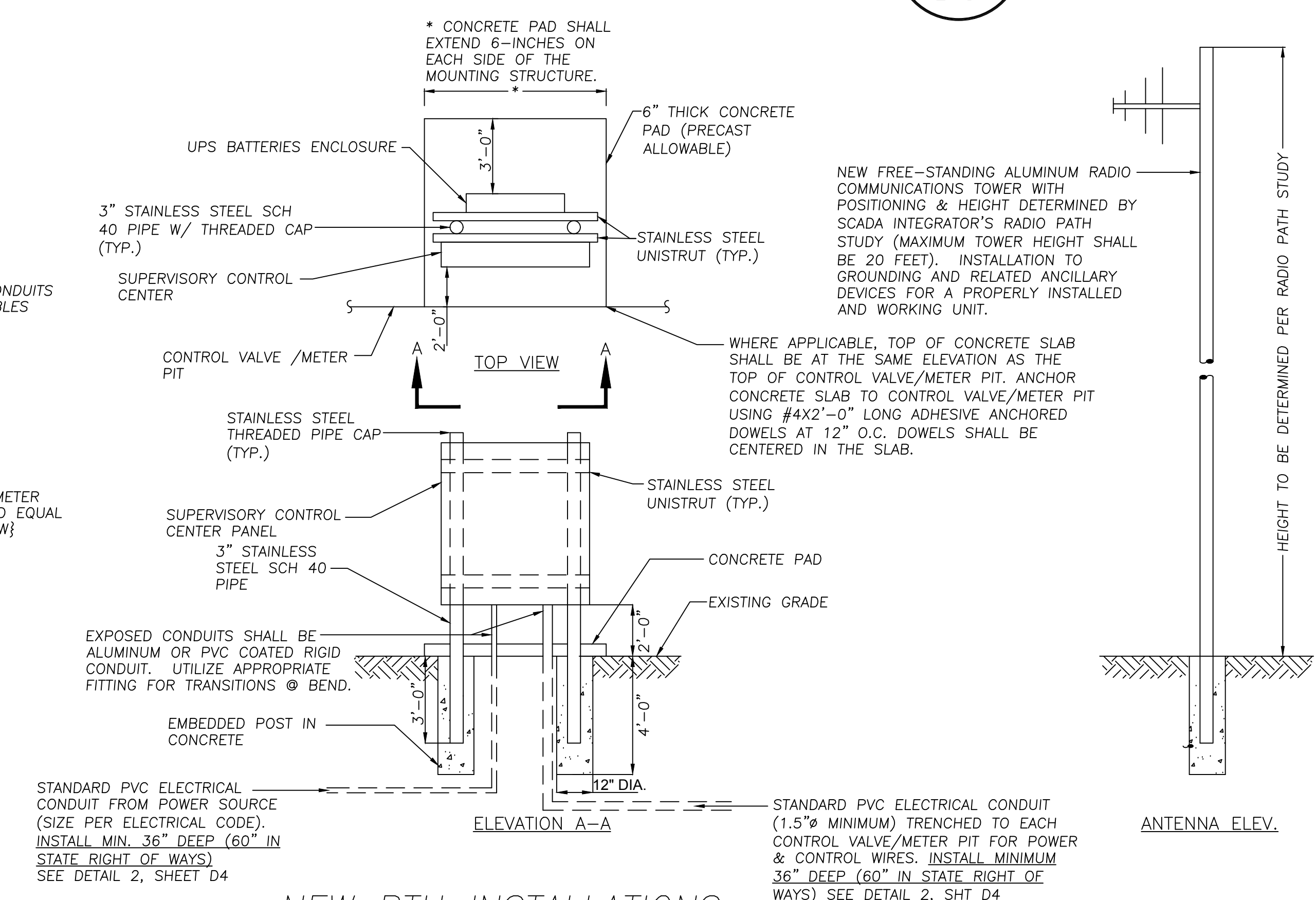


INSTALLATION/MODIFICATION NOTES:
 1. VERIFY ALL EXISTING DIMENSIONS.
 2. ALL NEW INTERIOR BOLTS SHALL BE STAINLESS.
 3. SEE PLAN SHEET P-7 FOR OVERALL LAYOUT.
 4. FOR OTHER SITE MODIFICATIONS, SEE 'SCOPE OF WORK' NOTES ON PLAN SHEET P-7.

EX. TANK VALVE VAULT – SITE 2
 SINGLE MAINLINE MASTER METER

NOT TO SCALE

5
 D3



NEW RTU INSTALLATIONS
 SCC PANEL MOUNTING DETAIL

NOT TO SCALE

6
 D3

NO.	REVISION	DATE	BY
1	FOR RCDW REVIEW	02-15-21	CWW
2			

McGHEE ENGINEERING
 202 Ewing Street
 Guthrie, KY 42334
 (270) 483-9985

MORTONS GAP WATER & SEWER
 P.O. Box 367
 Mortons Gap, KY 42440
 (270) 258-5362

FIRM: McGhee
 DES BY: CWW
 DWN BY: CWW
 SCALE: AS SHOWN
 PROJECT DATE: 2021
 PRINTED: ON ORIGINAL DRAWING

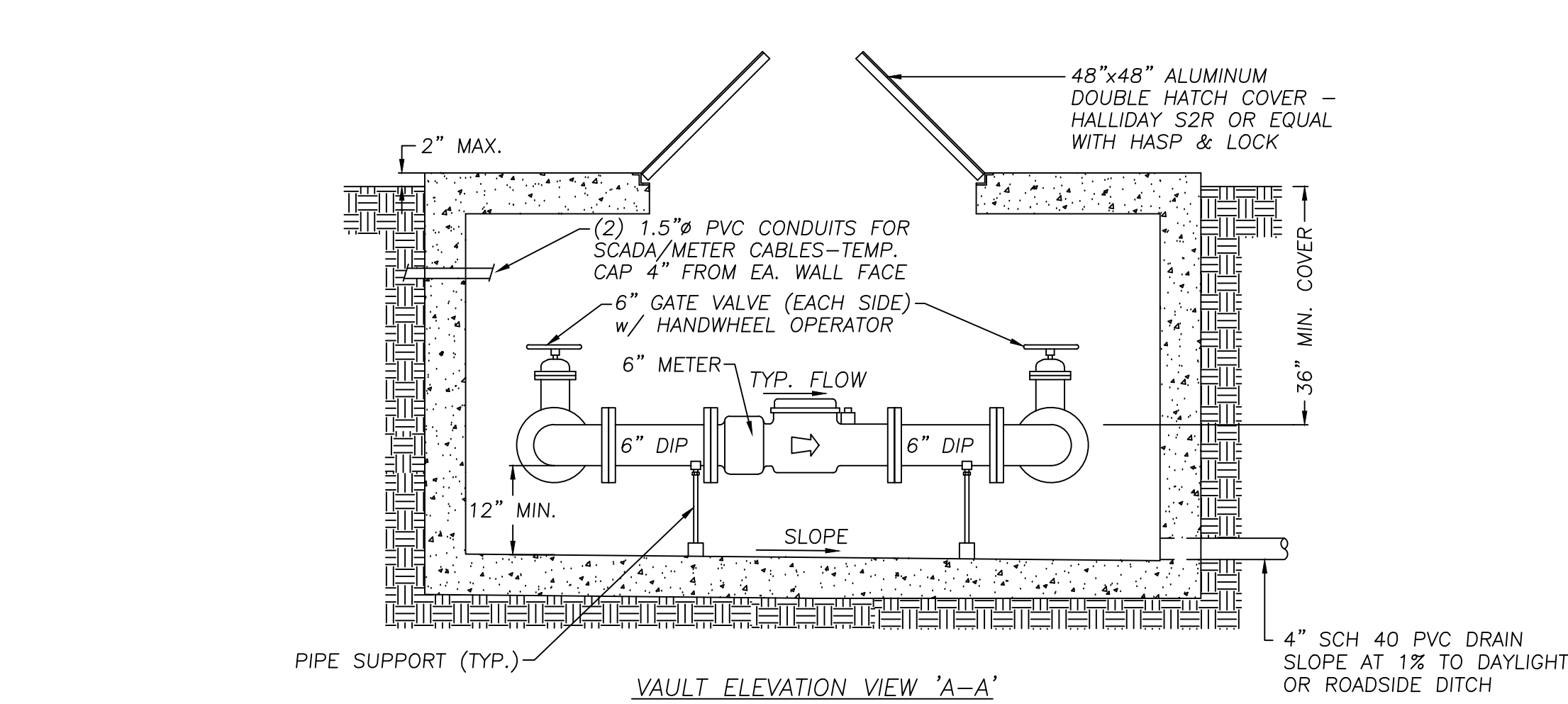
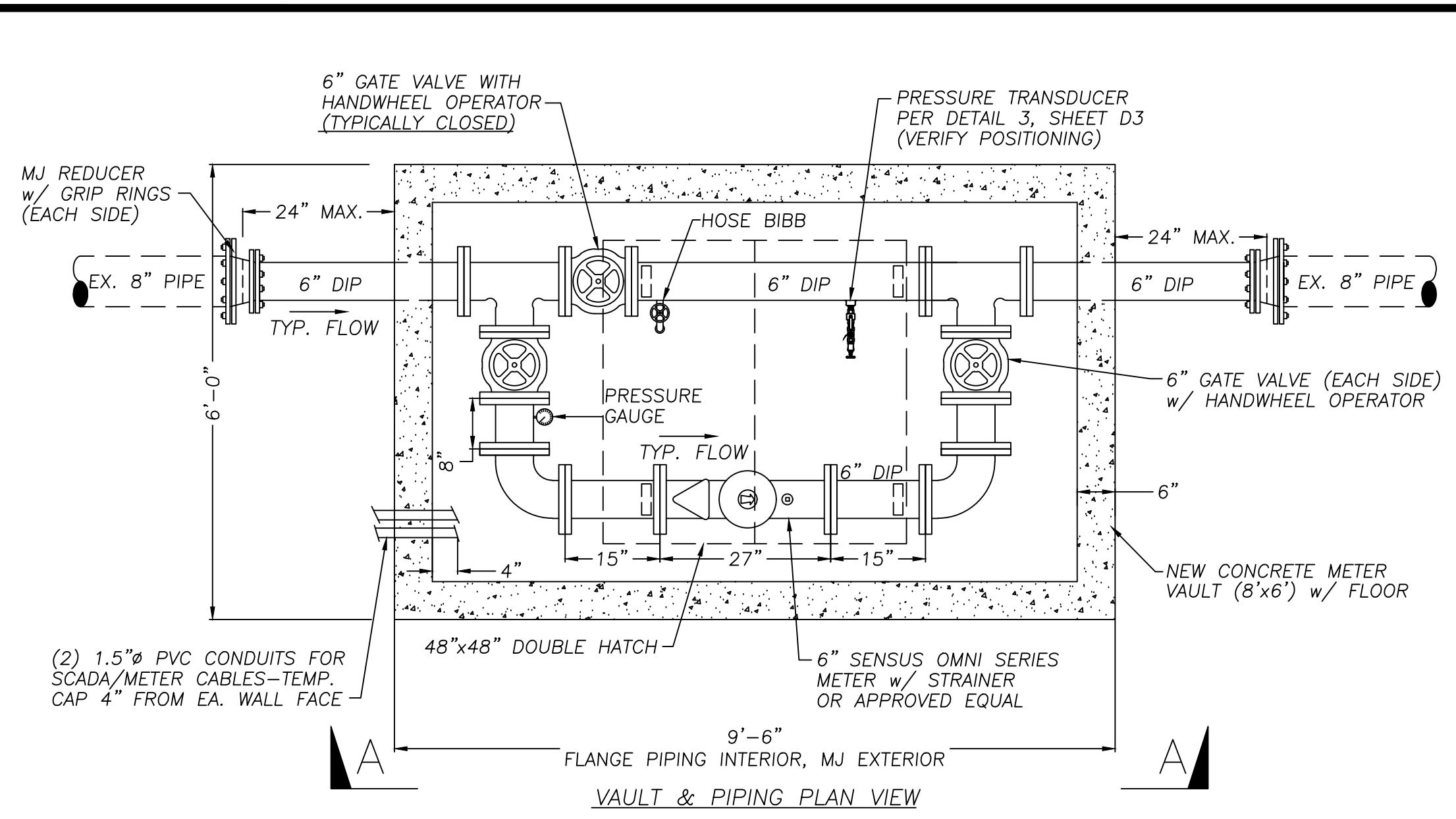
CHK BY: CWW
 APP BY: AS SHOWN

LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

City of Mortons Gap, Kentucky
 WATER SYSTEM REHAB.
 & UPGRADE PROJECT
 Contract 3 - System-wide Improvements
 SCADA Vault Plans & Details



February 15, 2021
 Chris Wilcutt, P.E.
 Chris Wilcutt, P.E.

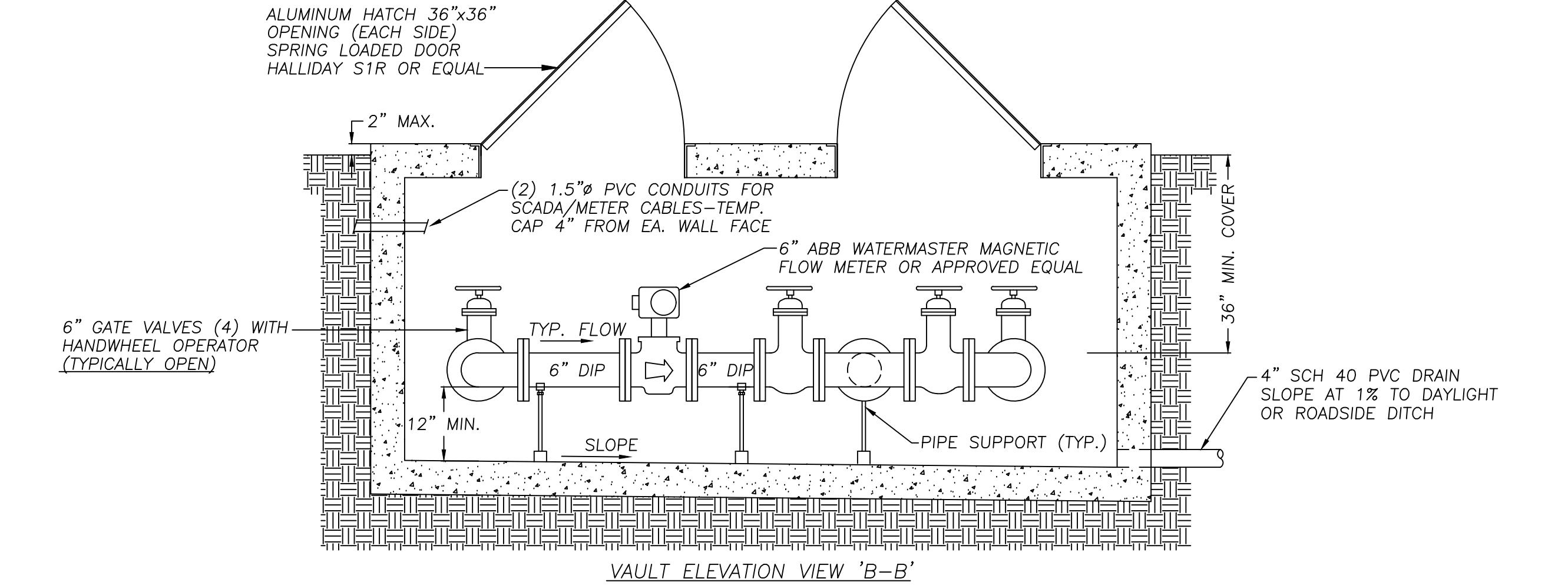
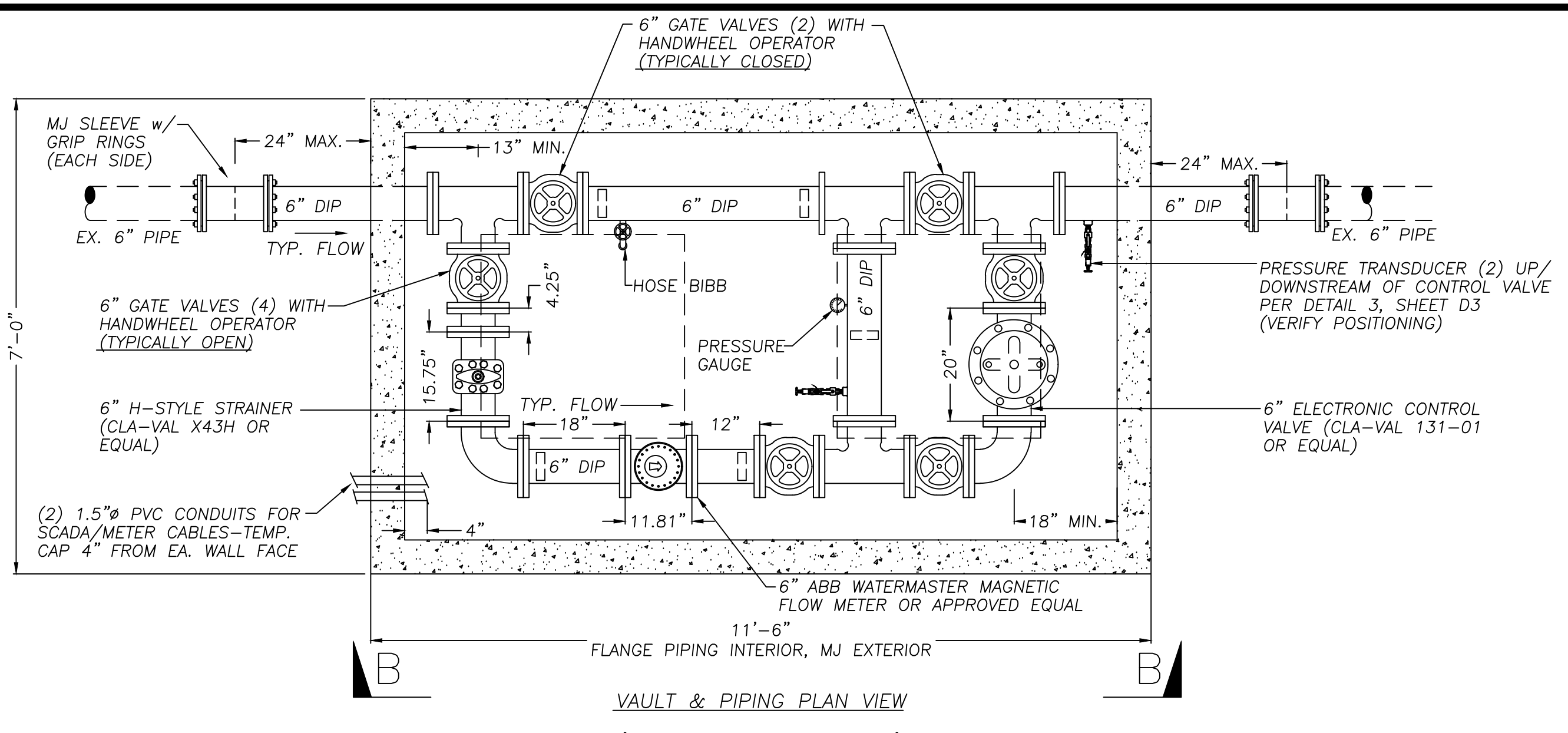


- INSTALLATION NOTES:**
- THE COMMUNICATION CONDUIT SHALL BE RIGID PVC WITH SWEEPING BENDS. IT SHALL BE INSTALLED WITH A MINIMUM DEPTH OF 12".
 - NEW VAULT NOTE: ALL CONCRETE SURFACES & PIPING (EXCL. METER) INSIDE THE VALVE VAULT ARE TO RECEIVE A SURFACE PREPARATION AND COATING SYSTEM EQUAL TO THE FOLLOWING TMEC SYSTEMS:

CONCRETE FLOOR	SYSTEM 67-1	GRAY (IN05)
OTHER CONCRETE	SYSTEM 66-4	WHITE (WH01)
PIPING, VALVES	SYSTEM 66-2	BLUE (GB03)
 - ALL INTERIOR BOLTS SHALL BE STAINLESS.

E. CROSS STREET @ LIFT STATION – SITE 3
 NEW SINGLE MAINLINE MASTER METER
 SCALE: NONE

1
D4

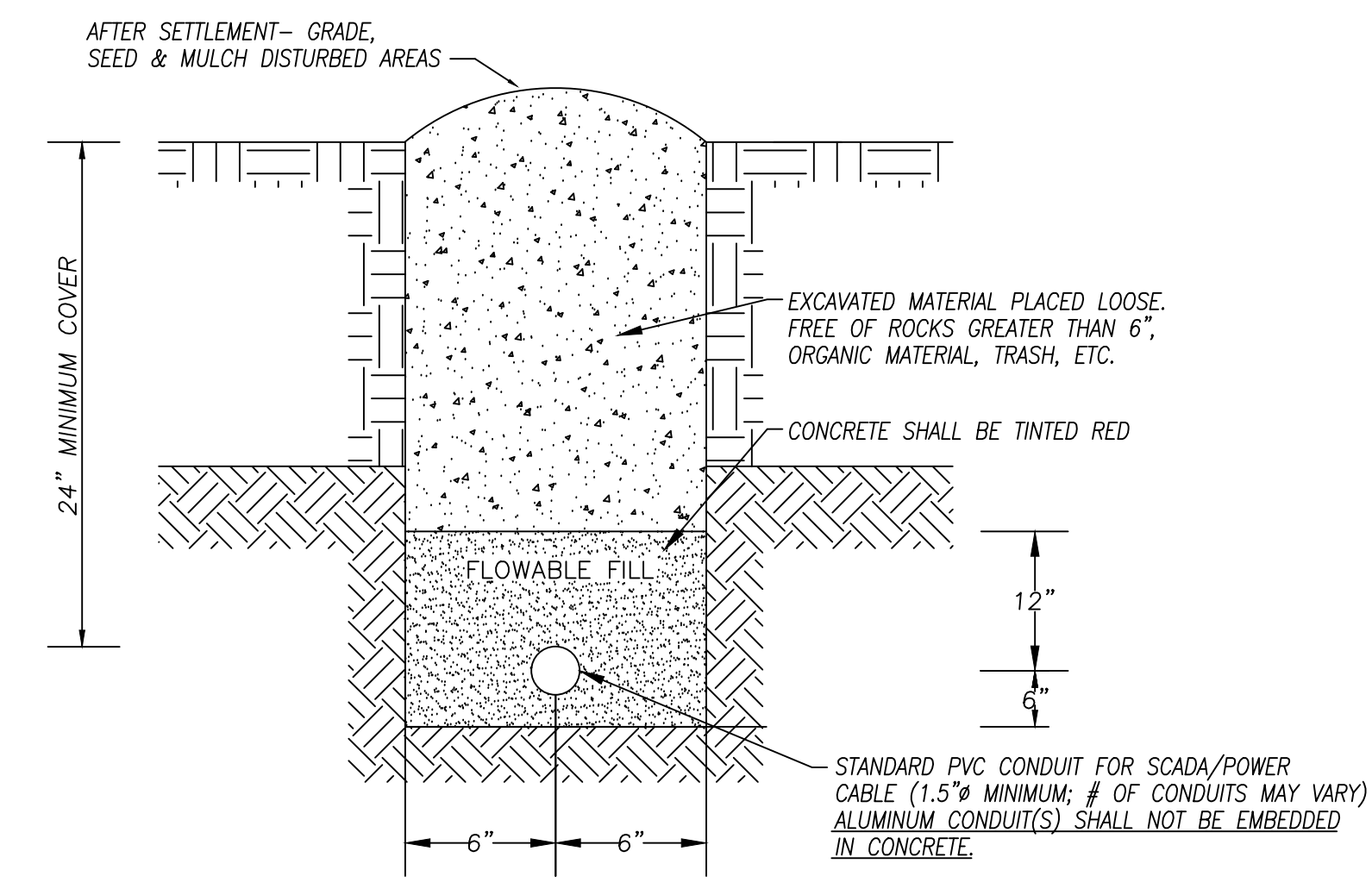


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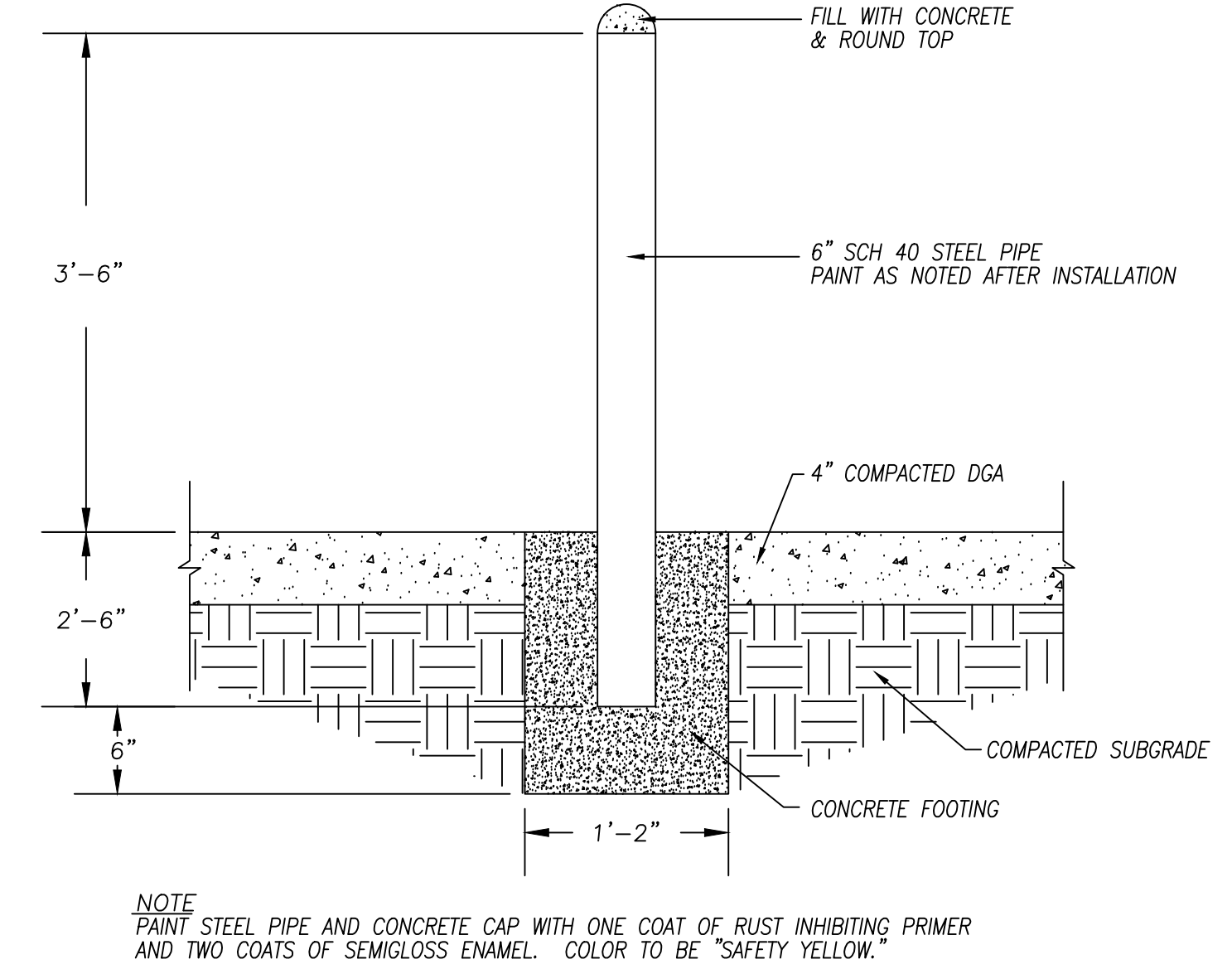
MORTON & ELM STREET CORNER – SITE 1
 NEW MAINLINE CONTROL VALVE VAULT
 SCALE: NONE

3
D4



SCADA/POWER CABLE
 CONDUIT TRENCH DETAIL – ROCK OR SOIL
 SCALE: NONE

2
D4



PIPE BOLLARD DETAIL
 SCALE: NONE

4
D4

REVISION	DATE	BY
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February 15, 2021

STATE OF KENTUCKY
 CHRIS WILCOX
 21663
 PROFESSIONAL ENGINEER

Chris Wilcox, P.E.