

Kentucky Home Trust Building, 450 South Third Street, Louisville, Kentucky 40202-1410  
Telephone (502) 569-7525 Telefax (502) 569-7555 www.rubinhays.com

CHARLES S. MUSSON  
W. RANDALL JONES  
CHRISTIAN L. JUCKETT

RECEIVED

May 29, 2019

MAY 31 2019

PUBLIC SERVICE  
COMMISSION

Ms. Gwen R. Pinson  
Executive Director  
Public Service Commission  
P.O. Box 615  
Frankfort, Kentucky 40602

Re: Todd County Water District PSC Application - KRS 278.023

Dear Director Pinson:

Enclosed please find the original and ten (10) copies of the Application of the Todd County Water District for a Certificate of Public Convenience and Necessity to construct, finance and increase rates pursuant to KRS 278.023.

Also enclosed are eleven (11) copies of the exhibits required pursuant to 807 KAR 5:069, with the **exception of the Preliminary and Final Engineering Reports, of which two copies are enclosed and the Plans and Specifications on electronic media in portable document format.**

If you need any additional information or documentation, please let us know.

Sincerely,

Rubin & Hays

By

  
W. Randall Jones

WRJ:jlm  
Enclosures  
cc: Distribution List

**DISTRIBUTION LIST**

**Re: Todd County Water District Waterworks Revenue Bonds, Series 2019, in the principal amount of \$3,210,000**

Ms. Hilda Gay Legg  
State Director  
USDA, Rural Development  
771 Corporate Drive, Suite 200  
Lexington, Kentucky 40503-5477

Telephone: (859) 224-7336

Mr. Joseph Geffert  
USDA, Rural Development  
1095 National Mine Drive  
Madisonville, Kentucky 42431  
[joseph.geffert@ky.usda.gov](mailto:joseph.geffert@ky.usda.gov)

Telephone: (270) 821-4430  
Fax: (270) 825-3120

Ms. Carla Moody  
Todd County Water District  
P.O. Box 520  
Elkton, Kentucky 42220  
[tewd00@gmail.com](mailto:tewd00@gmail.com)

Telephone: (270) 265-2229  
Fax: (270) 265-2035

Chris Wilcutt, P.E.  
McGhee Engineering, Inc.  
202 Ewing Street  
P.O. Box 267  
Guthrie, Kentucky 42234-0267  
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Harold M. Johns, Esq.  
12 Public Square  
P.O. Box 746  
Elkton, Kentucky 42220-0746  
[hmjohns@johnslawfirm.com](mailto:hmjohns@johnslawfirm.com)

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Rubin & Hays  
Kentucky Home Trust Building  
450 South Third Street  
Louisville, Kentucky 40202  
[wrjones@rubinhays.com](mailto:wrjones@rubinhays.com)

Telephone: (502) 569-7534  
Fax: (502) 569-7555

RECEIVED

MAY 31 2019

PUBLIC SERVICE  
COMMISSION

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF THE TODD COUNTY )  
WATER DISTRICT FOR A CERTIFICATE )  
OF PUBLIC CONVENIENCE AND )  
NECESSITY TO CONSTRUCT A WATERWORKS ) Case No. 2019 - 00180  
IMPROVEMENT PROJECT AND AN ORDER )  
APPROVING A CHANGE IN RATES AND )  
AUTHORIZING THE ISSUANCE OF SECURITIES )  
PURSUANT TO KRS 278.023 )

APPLICATION

This Application of the Todd County Water District ("Applicant"), respectfully shows:

1. That Applicant is a water district created and existing under and by virtue of Chapter 74 of the Kentucky Revised Statutes.

2. That the post office address of Applicant is:

Todd County Water District  
c/o Mr. John Haley, Manager  
2201 New Highway 68 West  
Elkton, Kentucky 42220  
Phone: (270) 265-2229  
Fax: (270) 265-2035  
email address: [jqhaley@hotmail.com](mailto:jqhaley@hotmail.com)

3. That Applicant, pursuant to the provisions of KRS 278.023, seeks (i) a Certificate of Public Convenience and Necessity ("CPCN"), permitting Applicant to construct a waterworks improvement project (the "Project"); (ii) an Order approving a change in water rates; and (iii) an Order authorizing the issuance of securities.

4. That the Project consists of the installation of (i) approximately 11,555 linear feet of 12 inch water main plus an associated meter station and appurtenances; and (ii) a 500,000 gallon elevated water storage tank.

5. That Applicant proposes to finance the construction of the Project through the issuance of \$3,210,000 of its Waterworks Revenue Bonds and a grant from the United States Department of Agriculture, acting through Rural Development ("RD") in the amount of \$390,000. Applicant has a commitment from RD to purchase said \$3,210,000 of bonds maturing over a 40-year period, at an interest rate not to exceed 3.125% per annum as set out in the RD Letter of Conditions, as amended and Form RD 1940-1 Request for Obligation of Funds filed herewith as Exhibit A.

6. That Applicant does not contemplate having the Project constructed with any deviation from minimum construction standards of this Commission.

7. That Applicant files herewith the following Exhibits pursuant to 807 KAR 5:069, Section 2 in support of this Application:

- A. Copy of RD Letter of Conditions, as amended and Form RD 1940-1 (**Exhibit "A"**).
- B. Copy of RD Letter of Concurrence in Contract Award (**Exhibit "B"**).
- C. Copy of Preliminary Engineering Report, Final Engineering Report and certified bid tabulations.
- D. Certified statement from the Vice Chairman of Applicant (**Exhibit "C"**), based upon statements of the Engineers for Applicant, concerning the following:
  - (1) The proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066 Section 4(3) and (4); Section 5(1); Sections 6 and 7; Section 8(1) through (3); Section 9(1) and Section 10.
  - (2) All other state approvals or permits have been obtained;
  - (3) The proposed rates of Applicant shall produce the total revenue requirements recommended in the engineering reports; and
  - (4) Setting out the dates when it is anticipated that construction will begin and end.
- E. Copy of the Plans and Specifications of the Project on electronic storage medium in portable document format.

8. That Applicant has complied with the "public postings" requirement of 807 KAR 5:069, Section 3(1)(a) and (b) by posting a copy of the Notice of Proposed Rate Change (the "Notice") (i) at its place of business; and (ii) within five (5) business days of the date this Application is submitted to the Commission, on its website ([www.toddcountywater.com](http://www.toddcountywater.com)) along with a hyperlink to the location on the Commission's website where the case documents are available.

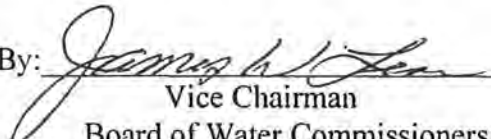
Applicant has also arranged for the publication, prior to or at the same time this Application is filed, of the Notice pursuant to 807 KAR 5:069, Section 3(2) in the newspapers of general circulation in Applicant's service area. Said Notice sets out the content requirements of 807 KAR 5:069, Section 3(4). A copy of said Notice is filed herewith as **Exhibit "D"**. Applicant shall file with this Commission no later than fifteen (15) days from the date this Application was initially filed, an affidavit and tearsheet from the publisher as required by 807 KAR 5:069 Section 3(3)(b).

9. That the foregoing constitutes the documents necessary to obtain the approval of this Commission in accordance with Section 278.023 of the Kentucky Revised Statutes and in accordance with the "Filing Requirements" specified in 807 KAR 5:069, Section 2.

WHEREFORE, Applicant, the Todd County Water District asks that the Public Service Commission of the Commonwealth of Kentucky grant to Applicant the following:

- a. A Certificate of Public Convenience and Necessity permitting Applicant to construct a water system improvement project.
- b. An Order authorizing the issuance of securities in the form of \$3,068,000 of Todd County Water District Waterworks Revenue Bonds bearing interest at a rate not to exceed 3.125% per annum.
- c. An Order approving the change in water rates as set out in Section 32 of the RD Letter of Conditions, as amended, filed herewith as an Exhibit.

Todd County Water District

By:   
Vice Chairman  
Board of Water Commissioners

  
W. Randall Jones, Esq.  
Rubin & Hays, Counsel for Applicant  
Kentucky Home Trust Building  
450 South Third Street  
Louisville, Kentucky 40202  
Phone: (502) 569-7534  
Fax: (502) 569-7555  
[wrjones@rubinhays.com](mailto:wrjones@rubinhays.com)





September 28, 2018

Dr. George Brown, Chairman  
Todd County Water District  
P.O. Box 520  
Elkton, KY 42220

SUBJECT: Recipient Name: Todd County Water District  
Project Name: Novelis Water Extension

Dear Dr. Brown:

This letter establishes conditions that must be understood and agreed to by you before further consideration may be given to the application. The loan and grant will be administered on behalf of the Rural Utilities Service (RUS) by the State and Area office staff of USDA Rural Development. Any changes in project cost, source of funds, scope of services or any other significant changes in the project or applicant must be reported to and approved by USDA Rural Development, by written amendment to this letter. Any changes not approved by Rural Development shall be cause for discontinuing processing of the application. It should also be understood that Rural Development is under no obligation to provide additional funds to meet an overrun in construction costs.

This letter is not to be considered as loan or grant approval or as a representation as to the availability of funds. The docket may be completed on the basis of a RUS loan not to exceed \$3,210,000 and a RUS grant not to exceed \$390,000. No applicant cash contribution will be required.

If Rural Development makes the loan, the interest rate will be the lower of the rate in effect at the time of loan approval or the rate in effect at the time of loan closing, unless the applicant otherwise chooses. The loan will be considered approved on the date a signed copy of Form RD 1940-1, "Request for Obligation of Funds," is mailed to you.

Please complete and return the attached Form RD 1942-46, "Letter of Intent to Meet Conditions," if you desire that further consideration be given to your application.

The "Letter of Intent to Meet Conditions" must be executed within three weeks from the date of this letter or it becomes invalid unless a time extension is granted by Rural Development.

If the conditions set forth in this letter are not met within 180 days from the date hereof, Rural Development reserves the right to discontinue the processing of the application. In signing Form RD 1942-46, "Letter of Intent to Meet Conditions," you are agreeing to complete the following as expeditiously as possible:

**Rural Development • Kentucky State Office**  
771 Corporate Drive, Suite 200, Lexington, Kentucky 40502  
Voice (859) 224-7300 • Fax (855) 661-8335 • TTY (859) 224-7422

USDA is an equal opportunity provider, employer and lender.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html), or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at [program.intake@usda.gov](mailto:program.intake@usda.gov).



1. Number of Users and Their Contribution:

There shall be 3,545 water users, of which 3,544 are existing users and 1 is a new user. The Area Director will review and authenticate the number of users prior to advertising for construction bids.

2. Grant Agreement:

Attached is a copy of RUS Bulletin 1780-12, "Water and Waste System Grant Agreement," for your review. You will be required to execute a completed form at the time of grant closing.

3. Drug-Free Work Place:

Prior to grant closing, the District will be required to execute Form AD-1049, "Certification Regarding Drug-Free Workplace Requirements (Grants) Alternative I - For Grantees Other Than Individuals."

4. Repayment Period:

The loan will be scheduled for repayment over a period not to exceed 40 years from the date of the Bond. Principal payment will not be deferred. Payments will be in accordance with applicable KRS, which requires interest to be paid semi-annually (January 1st and July 1st) and principal will be due on or before the first of January. Rural Development may require the District to adopt a supplemental payment agreement providing for monthly payments of principal and interest so long as the bond is held or insured by RUS. Monthly payments will be approximate amortized installments.

5. Recommended Repayment Method:

Payments on this loan shall be made using the Preauthorized Debit (PAD) payment method. This procedure eliminates the need for paper checks and ensures timely receipt of RD loan payments. To initiate PAD payments, Form RD 3550-28, "Authorization Agreement for Preauthorized Payments," should be signed by the District to authorize the electronic withdrawal of funds from your designated bank account on the exact installment payment due date. The Area Director will furnish the necessary forms and further guidance on the PAD procedure.

6. Reserve Accounts:

Reserves must be properly budgeted to maintain the financial viability of any operation. Reserves are important to fund unanticipated emergency maintenance, pay for repairs, and assist with debt service should the need arise.

The District will be required to deposit \$1,185 per month into a "Funded Debt Reserve Account" until the account reaches \$14,220. The deposits are to be resumed any time the account falls below the \$14,220.

The required monthly deposits to the Reserve Account and required Reserve Account levels are in addition to the requirements of the District's prior bond ordinances. The monthly deposits to the Reserve Account are required to commence with the first month of the first full fiscal year after the facility becomes operational.

The District also needs to fund an account for short-lived assets by depositing a sum of \$5,000 monthly into the account. The funds in the short-lived asset account may be used by the District as needed to replace or add short-lived assets in the District's utility systems.

7. Security Requirements:

A pledge of gross water revenue(s) will be provided in the Bond Ordinance. Bonds shall rank on a parity with existing bonds, if possible.

If this is not possible, the bond will be subordinate and junior to the existing bonds, in which case the District will be required to abrogate its right to issue additional bonds ranking on a parity with the existing bonds, so long as any unpaid indebtedness remains on this bond issue.

Additional security requirements are contained in [RUS Bulletin 1780-12, "Water and Waste System Grant Agreement," and RUS Bulletin 1780-27, "Loan Resolution Public Body." A draft of all security instruments, including, draft bond resolution, must be reviewed and concurred in by the Agency prior to advertising for bids. The Bond Resolution and Loan Resolution must be duly adopted and executed prior to loan closing. The Grant Agreement must be fully executed prior to the first disbursement of grant funds.

8. Land Rights and Real Property:

The District will be required to furnish satisfactory title, easements, etc., necessary to install, maintain and operate the facility to serve the intended users.

The pipelines will be on private rights-of-way where feasible. Easements and options are to be secured prior to advertising for construction bids.

9. Organization:

The District will be legally organized under applicable KRS, which will permit them to perform this service, borrow, or repay money.

The District must maintain a current registration of their Dun and Bradstreet Data Universal Numbering System (DUNS) number in SAM.gov (System for Award Management) in order to receive federal loan and/or grant financial assistance. This registration must be updated/renewed at least annually.

10. Business Operations:

The District will be required to operate the system under a well-established set of resolutions, rules and regulations. A budget must be established annually and adopted by the District after review by Rural Development. At no later than loan pre-closing, the District will be required to furnish a prior approved management plan to include, as a minimum, provisions for management, maintenance, meter reading, miscellaneous services, billing, collecting, delayed payment penalties, disconnect/reconnect fees, bookkeeping, making and delivering required reports and audits.

11. Conflict of Interest Policy:

Prior to obligation of funds, you will certify in writing that your organization has in place an up-to-date written policy on conflict of interest. The policy will include, at a minimum: (1) a requirement for those with a conflict/potential conflict to disclose the conflict/potential conflict, (2) a prohibition of interested members of the applicant's governing body from voting on any matter in which there is a conflict, and (3) a description of the specific process by which the governing body will manage identified or potential conflicts.

You must also submit a disclosure of planned or potential transactions related to the use of Federal funds that may constitute or present the appearance of personal or organizational conflict of interest. Sample conflict of interest policies may be found at the National Council of Nonprofits website, <https://www.councilofnonprofits.org/tools-resources/conflict-of-interest>, or in Internal Revenue Service Form 1023, Appendix A, "Sample Conflict of Interest Policy," at <http://www.irs.gov/pub/irs-pdf/i1023.pdf>. Though these examples reference non-profit corporations, the requirement applies to all types of Agency borrowers.

Disclosure must be in the form of a written letter signed and dated by the applicant's official. A negative disclosure of the same format is required if no conflicts are anticipated. Assistance in developing a conflict of interest policy is available through Agency-contracted technical assistance providers if desired.

12. Accounts, Records and Audits:

The District will be required to maintain adequate records and accounts and submit annual budgets and year-end reports (annual audits)/statistical and financial reports, quarterly and annually, in accordance with subsection 1780.47 of RUS Instruction 1780.

13. Accomplish Audits for Years in Which Federal Financial Assistance is Received:

The type of financial information that must be submitted is specified below:

**Audits** – An annual audit under the Single Audit Act is required if you expend \$750,000 or more in Federal financial assistance per fiscal year. The total Federal funds expended from all sources shall be used to determine Federal financial assistance expended. Expenditures of interim financing are considered Federal expenditures.

All audits are to be performed in accordance with 2 CFR Part 200, as adopted by USDA through 2 CFR Part 400. Further guidance on preparing an acceptable audit can be obtained from the Agency. It is not intended that audits required by this part be separate and apart from audits performed in accordance with State and local laws. To the extent feasible, the audit work should be done in conjunction with those audits. The audit must be prepared by an independent licensed Certified Public Accountant, or a State or Federal auditor if allowed by State law, and must be submitted within 9 months of your fiscal year end.

14. Insurance and Bonding:

The following insurance and bonding will be required:

- A. Adequate Liability and Property Damage Insurance including vehicular coverage, if applicable, must be obtained and maintained by the District. The District should obtain amounts of coverage as recommended by its attorney, consulting engineer and/or insurance provider.
- B. Worker's Compensation - The District will carry worker's compensation insurance for employees in accordance with applicable state laws.
- C. Fidelity Bond - The District will provide Fidelity Bond Coverage for all persons who have access to funds. Coverage may be provided either for all individual positions or persons, or through "blanket" coverage providing protection for all appropriate employees and/or officials. The amount of coverage required for all RUS loans is \$425,000.
- D. Real Property Insurance - The District will obtain and maintain adequate fire and extended coverage on all structures including major items of equipment or machinery located in the structures. The amounts of coverage should be based on recommendations obtained by the District from its attorney, consulting engineer and/or insurance provider. Subsurface lift stations do not have to be covered except for the value of electrical and pumping equipment therein.
- E. Flood Insurance - The District will obtain and maintain adequate coverage on any facilities located in special flood and mudslide prone areas.

15. Planning and Performing Development:

- A. The engineer should not be authorized to commence work on final plans and specifications until a determination has been made that the project can be planned and constructed within the estimated cost shown in paragraph "28" of this letter. The engineer may then proceed to develop final plans and specifications to be completed no later than 210 days from this date and prepare bid documents. The Area Director is prepared to furnish the necessary guide to follow so as to keep the project plans and documents within our guidelines and requirements. The project must be constructed by the design/bid/build method of construction. The project should not be advertised for construction bids until all easements and enforceable options have been obtained, and total funds are committed or available for the project.
- B. The following documents will be submitted to Rural Development for review and must be concurred in by Rural Development prior to advertisement for construction bids:
  - 1. Final plans, specifications and bid documents.
  - 2. Applicant's letter on efforts to encourage small business and minority-owned business participation.
  - 3. Legal Service Agreements.
  - 4. Engineering Agreements.

Revision in these documents will be subject to Rural Development concurrence. Any agreements, contracts, etc. not reviewed and approved by Rural Development will not be eligible for payment from project funds or revenues from facilities financed by this Agency.

Prior to receipt of an authorization to advertise for construction bids, the District will obtain advance clearance from Bond Counsel and/or Local Counsel regarding compliance with KRS 424 pertaining to publishing of the advertisement for construction bids in local newspapers and the period of time the notice is required to be published.

16. Bid Tabulation:

Immediately after bid opening, you must provide the Agency with the bid tabulation and your engineer's evaluation of bids and recommendations for contract awards. If the Agency agrees that the construction bids received are acceptable, adequate funds are available to cover the total project costs, and all the requirements of this letter have been satisfied, the Agency will authorize you to issue the Notice of Award.

- A. Cost Overruns – If bids are higher than expected, or if unexpected construction problems are encountered, you must utilize all options to reduce cost overruns. Negotiations, redesign, use of bidding alternatives, rebidding or other means will be considered prior to commitment of subsequent funding by the Agency. Any requests for subsequent funding to cover cost overruns will be contingent on the availability of funds.

Cost overruns exceeding 20% of the development cost at time of loan or grant approval or where the scope of the original purpose has changed will compete for funds with all other applications on hand as of that date.

- B. Excess Funds – If bids are lower than anticipated at time of obligation, excess funds must be de-obligated prior to start of construction except in the cases addressed in this paragraph. In cases where the original PER for the project included items that were not bid, or were bid as an alternate, the State Office official may modify the project to fully utilize obligated funds for those items. Amendments to the PER, ER, and letter of conditions may be needed for any work not included in the original project scope. In all cases, prior to start of construction, excess funds will be de-obligated, with grant funds being de-obligated first. Excess funds do not include contingency funds as described in this letter.

17. Contract Documents, Final Plans, and Specifications:

- A. The contract documents must consist of the EJCDC construction contract documents as indicated in RUS Bulletin 1780-26 or other Agency-approved forms of agreement.
- B. The contract documents, final plans, and specifications must comply with RUS Instruction 1780, Subpart C – Planning, Designing, Bidding, Contracting, Constructing and Inspections, and must be submitted to the Agency for concurrence prior to advertising for bids along with an updated cost estimate. The Agency may require another updated cost estimate if a significant amount of time elapses between the original submission and advertising for bids.

- C. The use of any procurement method other than competitive sealed bids must be requested in writing and approved by the Agency.

18. Contract Review:

Your attorney will certify that the executed contract documents, including performance and payment, if required, are adequate and that the persons executing these documents have been properly authorized to do so in accordance with RUS Instruction 1780.61 (b).

19. Civil Rights & Equal Opportunity:

You should be aware of and will be required to comply with other federal statute requirements including but not limited to:

A. Section 504 of the Rehabilitation Act of 1973:

Under Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), no handicapped individual in the United States shall, solely by reason of their handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Rural Development financial assistance.

B. Civil Rights Act of 1964:

All borrowers are subject to, and facilities must be operated in accordance with, Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d *et seq.*) and Subpart E of Part 1901 of this Title, particularly as it relates to conducting and reporting of compliance reviews.

Instruments of conveyance for loans and/or grants subject to the Act must contain the covenant required by paragraph 1901.202(e) of this Title.

C. The Americans with Disabilities Act (ADA) of 1990:

This Act (42 U.S.C. 12101 *et seq.*) prohibits discrimination on the basis of disability in employment, state and local government services, public transportation, public accommodations, facilities, and telecommunications. Title II of the Act applies to facilities operated by state and local public entities that provide services, programs, and activities. Title III of the Act applies to facilities owned, leased, or operated by private entities that accommodate the public.

D. Age Discrimination Act of 1975:

This Act (42 U.S.C. 6101 *et seq.*) provides that no person in the United States shall, on the basis of age, 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. Limited English Proficiency (LEP) under Executive Order 13166:

LEP statutes and authorities prohibit exclusion from participation in, denial of benefits of, and discrimination under Federally-assisted and/or conducted programs on the ground of race, color, or national origin. Title VI of the Civil Rights Act of 1964 covers program access for LEP persons.

LEP persons are individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English. These individuals may be entitled to language assistance, free of charge. You must take reasonable steps to ensure that LEP persons receive the language assistance necessary to have meaningful access to USDA programs, services, and information your organization provides. These protections are pursuant to Executive Order 13166 entitled, "Improving Access to Services by Persons with Limited English Proficiency" and further affirmed in the USDA Departmental Regulation 4330-005, "Prohibition Against National Origin Discrimination Affecting Persons with Limited English Proficiency in Programs and Activities Conducted by USDA."

Agency financial programs must be extended without regard to race, color, religion, sex, national origin, marital status, age, or physical or mental handicap. You must display posters (provided by the Agency) informing users of these requirements, and the Agency will monitor your compliance with these requirements during compliance reviews.

20. Closing Instructions:

The Office of General Counsel, our Regional Attorney, will be required to write closing instructions in connection with this loan. Conditions listed therein must be met by the District.

21. Compliance with Special Laws and Regulations:

The District will be required to conform to any and all state and local laws and regulations affecting this type project.

22. Treatment Plant and System Operator:

The District is reminded that the water system operator must have an Operator's Certificate issued by the State.

23. Prior to Pre-Closing the Loan, the District Will Be Required to Adopt:

- A. Form RUS Bulletin 1780-27, "Loan Resolution (Public Bodies)."
- B. Form RD 400-1, "Equal Opportunity Agreement."
- C. Form RD 400-4, "Assurance Agreement."
- D. Form AD-1047, "Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transaction."

- E. Form RD 1910-11, "Applicant Certification Federal Collection Policies for Consumer or Commercial Debts."
- F. RD Instruction 1940-Q, Exhibit A-1, "Certification for Contracts, Grants and Loans."
- G. RUS Bulletin 1780-22, "Eligibility Certification."

24. Refinancing and Graduation Requirements:

The District is reminded that if at any time it shall appear to the Government that the District is able to refinance the amount of the RUS indebtedness then outstanding, in whole or in part, by obtaining a loan from commercial sources at reasonable rates and terms, upon the request of the Government, the District will apply for and accept such loan in sufficient amount to repay the Government.

25. Commercial Interim Financing:

The District will be required to use commercial interim financing for the project during construction for the RUS loan portion of the financing, if available at reasonable rates and terms.

Before the loan is closed, the District will be required to provide Rural Development with statements from the contractor, engineer and attorneys that they have been paid to date in accordance with their contract or other agreements and, in the case of the contractor, that he has paid his suppliers and sub-contractors.

26. Disbursement of Project Funds:

A construction account for the purpose of disbursement of project funds (RUS) will be established by the District prior to start of construction. The position of officials entrusted with the receipt and disbursement of RUS project funds will be covered by a "Fidelity Bond," with USDA Rural Development as Co-Obligee, in the amount of construction funds on hand at any one time during the construction phase.

For each "construction account" as established, if the amount of RUS loan and grant funds plus any applicant contributions or funds from other sources to be deposited into the account are expected to exceed \$250,000 at any time, the financial institution will secure the amount in excess of \$250,000 by pledging collateral with the Federal Reserve Bank in an amount not less than the excess in accordance with 7 CFR, 1902.7(a).

Agency funds will be disbursed into the construction account through an electronic transfer system. The borrower should complete Form SF-3881, "Electronic Funds Transfer Payment Enrollment Form," for each account where funds will be electronically received. The completed form(s) must be received by Rural Development at least thirty (30) days prior to the first advance of funds.

Monthly audits of the District's construction account records shall be made by Rural Development.



Borrowers receiving federal loan and/or grant funds by EFT will have funds directly deposited to a specified account at a financial institution with funds being available to the recipient on the date of payment.

Any applicant contribution will be the first funds expended, followed by other funding sources. Interim financing or Agency loan funds will be expended after all other funding sources unless an agreement is reached with all other funding sources on how funds are to be disbursed prior to start of construction or loan closing, whichever occurs first. Interim financing funds or Agency loan funds must be used prior to the use of Agency grant funds. The Grant funds must not be disbursed prior to loan funds except as specified in RUS Instruction 1780.45 (d). In the unlikely event the Agency mistakenly disburses funds, the funds will be remitted back to the Agency electronically.

During construction, the District shall disburse project funds in a manner consistent with subsection 1780.76 (e) of RUS Instruction 1780. Form RD 1924-18, "Partial Payment Estimate," or similar form approved by Rural Development, shall be used for the purpose of documenting periodic construction estimates, and shall be submitted to Rural Development for review and acceptance. Prior to disbursement of funds by the District, the District Council shall review and approve each payment estimate. All bills and vouchers must be approved by Rural Development prior to payment by the District.

Form RD 440-11, "Estimate of Funds Needed for 30-Day Period Commencing \_\_\_\_\_," will be prepared by the District and submitted to Rural Development in order that a periodic advance of federal cash may be requested.

27. Disbursement of Grant Funds:

The RUS funds will be advanced as they are needed in the amount(s) necessary to cover the RUS proportionate share of obligations due and payable by the District.

Grant funds are to be deposited in an interest bearing account in accordance with 2 CFR part 200 and interest in excess of \$500 per year remitted to the Agency. The funds should be disbursed by the recipient immediately upon receipt and there should be little interest accrual on the Federal funds. Recipients shall maintain advances of Federal funds in interest-bearing account, unless:

- a. The recipient receives less than \$120,000 in Federal awards per year.
- b. The best reasonably available interest-bearing account would not be expected to earn interest in excess of \$500 per year on Federal cash balances.
- c. The depository would require an average or minimum balance so high that it would not be feasible within the expected Federal and non-Federal cash resources.
- d. A foreign government or banking system prohibits or precludes interest-bearing accounts.

28. Project Budget:

Estimated expenditures are as follows:

Project Costs:

Development	\$2,800,000
Land and Rights	20,000
Legal and Administrative	27,000
Engineering Fees	318,000
Interest	70,000
PER & Environmental	85,000
Contingencies	<u>280,000</u>
<b>TOTAL PROJECT COST</b>	<b>\$3,600,000</b>

Project Funding:

RUS Loan	\$3,210,000
RUS Grant	<u>390,000</u>
<b>TOTAL FUNDING</b>	<b>\$3,600,000</b>

Any changes in funding sources following obligation of Agency funds must be reported to the processing official. Project feasibility and funding will be reassessed if there is a significant change in project costs after bids are received. If actual project costs exceed the project cost estimates, an additional contribution by the Owner may be necessary. Prior to advertisement for construction bids, you must provide evidence of applicant contributions and approval of other funding sources. This evidence should include a copy of the commitment letter. Agency funds will not be used to pre-finance funds committed to the project from other sources.

Obligated loan or grant funds not needed to complete the proposed project will be de-obligated prior to start of construction. Any reduction will be applied to grant funds first. An amended letter of conditions will be issued for any changes to the total project budget.

29. Construction Completion Timeframe:

All projects are required to be completed and all funds disbursed within five years of obligation. If funds are not disbursed within five years of obligation, you must submit a written waiver request with adequate justification of extenuating circumstances beyond your control for an extension of time. Any additional requests for waivers beyond the initial extension will be submitted through the State Office to the Assistant Administrator for concurrence decision.

30. Use of Remaining Project Funds:

The applicant contribution shall be considered as the first funds expended. After providing for all authorized costs, any remaining project funds will be considered to be RUS grant funds and refunded in proportion to participation in the project. If the amount of unused project funds exceeds the grants, that part would be RUS loan funds.

31. Proposed Operating Budget:

You will be required to submit to Rural Development a copy of your proposed annual operating budget that supports the proposed loan repayment prior to this agency giving you written authorization to proceed with the bidding phase. The operating budget should be based on a typical year cash flow, subject to completion of this project in the first full year of operation. Form RD 442-7, "Operating Budget," or similar form may be utilized for this purpose.

32. Rates and Charges:

Rates and charges for facilities and services rendered by the District must be at least adequate to meet cost of maintaining, repairing and operating the water system and meeting required principal and interest payments and the required deposits to debt service and/or depreciation reserve.

Water rates will be at least:

All Meter Sizes: Residential & Commercial

First	2,000	gallons @ \$24.00 - Minimum Bill.
Next	18,000	gallons @ \$12.00 – per 1,000 gallons.
All Over	20,000	gallons @ \$ 8.25 – per 1,000 gallons.

Industrial Customers: Large Meter

First	1,500,000	gallons @ \$19,500.00 - Minimum Bill.
All Over	1,500,000	gallons @ \$ 8.25 – per 1,000 gallons.

33. Water Purchase Contract:

The District will submit a Water Purchase Contract for approval by Rural Development before advertising for construction bids. If the contract is not on Form RD 442-30, "Water Purchase Contract," the contract will require approval by our Regional Attorney. The contract must meet the requirements of subsection 1780.62 of RUS Instruction 1780.

34. Vulnerability Assessment/Emergency Response Plan (VA/ERP):

The Agency requires all financed water and wastewater systems to have a VA/ERP in place. Borrowers with existing systems must provide a certification that a VA/ERP has been completed prior to advertising for bids. The documents are not submitted to the Agency for VA/ERP requirements throughout the life of the loan.

35. Floodplain Construction:

The District will be required to pass and adopt a Resolution or amend its By-Laws whereby the District will deny any water service to any future customer wishing to build on or develop property located within a designated floodplain.

If a customer or developer requests service for construction in a designated floodplain, the customer or developer must provide evidence and a justification for approval by the

District and Rural Development officials that there are no other alternatives to construction or development within the designated floodplain. The community must be a participant in the National Flood Insurance Program (NFIP) and the customer or developer must obtain the required permits prior to the tap on restrictions being waived.

36. Mitigation Measures:

- A. Line design and construction shall be accomplished in a way that will leave floodplains and wetlands unaffected after construction is completed. The U. S. Corps of Engineer's Nationwide Permit 12 applies to floodplains, wetlands and waters of the US with utility line construction. A U.S. Corps of Engineer Permit 404 may be required in some cases such as rivers, lakes and other waters of the U.S.
- B. Any excavation by the Contractor that uncovers or disturbs a historical or archaeological artifact shall be immediately reported to the Owner and a representative of this agency. Construction in that location shall be halted pending the notification process and further directions issued by this agency after consultation with the State Historical Preservation Officer. Requirements by RD and the SHPO shall be incorporated into the design, construction and maintenance of the project.
- C. The design and construction of the project shall be accomplished with all local, state and federal statutes, regulations and permits in effect.
- D. Best Management Practices shall be incorporated into the project design, construction, operation and maintenance.
- E. The U.S. Fish and Wildlife Service letter of July 2, 2018 shall be used for the direction of all design, construction and operation of the facility.
- F. The Department for Local Government letter of April 12, 2018 shall be considered for all design, construction and operation.

37. System for Award Management:

You will be required to maintain a Dun and Bradstreet Data Universal Numbering System (DUNS) number and maintain an active registration in the System for Award Management (SAM) database. Renewal can be done on-line at: <http://sam.gov>.

This registration must be renewed and revalidated every twelve (12) months for as long as there are Agency funds to be expended.

To ensure the information is current, accurate and complete, and to prevent the SAM account expiration, the review and updates must be performed within 365 days of the activation date, commonly referred to as the expiration date. The registration process may take up to 10 business days. (See 2 CFR Part 25 and the "Help" section at <http://sam.gov>).

38. Prepayment and Extra Payments:

Prepayments of scheduled installments, or any portion thereof, may be made at any time at the option of borrower, with no penalty.

Security instruments, including bonding documents, must contain the following language regarding extra payments, unless prohibited by State statute:

*Prepayments of scheduled installments, or any portion thereof, may be made at any time at the option of the borrower. Refunds, extra payments and loan proceeds obtained from outside sources for the purpose of paying down the Agency debt, shall, after payment of interest, be applied to the installments last to become due under this note and shall not affect the obligation of borrower to pay the remaining installments as scheduled in your security instruments.*

39. Security/Operational Inspections:

The Agency will inspect the facility and conduct a review of your operations and records management system and conflict of interest policy every three years for the life of the loan. You must participate in these inspections and provide the required information.

40. American Iron & Steel:

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) applies a new American Iron and Steel requirement:

- (1) No Federal funds made available for this fiscal year for the rural water, waste water, waste disposal, and solid waste management programs authorized by the Consolidated Farm and Rural Development Act (7 U.S.C. 1926 et seq.) shall be used for a project for the construction, alteration, maintenance, or repair of a public water or wastewater system unless all of the iron and steel products used in the project are produced in the United States.
- (2) 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.
- (3) The requirement shall not apply in any case or category of cases in which the Secretary of Agriculture (in this section referred to as the "Secretary") or the designee of the Secretary finds that— a. applying the requirement would be inconsistent with the public interest; b. iron and steel products are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or c. inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

41. Final Approval Conditions:

Final approval of this assistance will depend on your willingness, with the assistance of all your co-workers, to meet the conditions of this letter in an orderly and systematic manner. Then too, final approval will depend on funds being available.

If you desire to proceed with your application, the Area Director will allot a reasonable portion of time to provide guidance in application processing.

Sincerely,



HILDA GAY LEGG  
State Director

Enclosures

cc: Area Director – Madisonville, Kentucky  
Pennyrite ADD – Hopkinsville, Kentucky  
Harold M. Johns – Elkton, Kentucky  
McGhee Engineering – Guthrie, Kentucky  
Rubin & Hays – Louisville, Kentucky  
PSC – ATTN: Talina Mathews – Frankfort, Kentucky



Rural Development May 10, 2019

Kentucky State Office

771 Corporate Drive, Suite 200 Lexington, KY 40503

Voice 859.224.7300 Fax 855.661.8335 TTY 859.224.7422

Dr. George Brown, Chairman Todd County Water District P.O. Box 520 Elkton, Kentucky 42220

Re: Letter of Conditions Dated September 28, 2018 Recipient: Todd County Water District Project: Novelis Water Extension

Dear Dr. Brown:

This letter shall serve as Amendment No. 1 to the Letter of Conditions dated September 28, 2019. The purpose of this amendment is to revise the projected rate schedule to provide for a declining scale for water usage by Novelis in amounts over 3,000,000 gallons per month.

Paragraph numbered "32" is revised to read as follows:

"32. Rates and Charges:

Rates and charges for facilities and services rendered by the District must be at least adequate to meet cost of maintaining, repairing and operating the water system and meeting required principal and interest payments and the required deposits to debt service and/or depreciation reserve.

Water rates will be at least:

All meter sizes: Residential & Commercial

Table with 3 columns: Meter Size, Gallons, and Rate. Rows include First (2,000 gallons @ \$24.00), Next (18,000 gallons @ \$12.00), and All Over (20,000 gallons @ \$ 8.25).

Industrial Customer: Large Meter

Table with 3 columns: Meter Size, Gallons, and Rate. Rows include First (1,500,000 gallons @ \$19,500.00) and several Next/All Over rows with varying gallon amounts and rates.

USDA is an equal opportunity provider, employer and lender.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at http://www.ascr.usda.gov/complaint\_filing\_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 890-7442 or email at program.intake@usda.gov.

All other provisions of the referenced Letter of Conditions remain in full force and unchanged.

Sincerely,



HILDA GAY LEGG  
State Director

cc: Field Specialist - Madisonville, Kentucky  
Pennyrile ADD - Hopkinsville, Kentucky  
Harold M. Johns - Elkton, Kentucky  
McGhee Engineering - Guthrie, Kentucky  
Rubin & Hays - Louisville, Kentucky  
PSC - ATTN: Talina Mathews - Frankfort, Kentucky



REQUEST FOR OBLIGATION OF FUNDS

<b>INSTRUCTIONS-TYPE IN CAPITALIZED ELITE TYPE IN SPACES MARKED ( )</b>			
Complete Items 1 through 29 and applicable Items 30 through 34. See FMI.			
1. CASE NUMBER ST CO BORROWER ID 21-010-*****0845		LOAN NUMBER	FISCAL YEAR
2. BORROWER NAME Todd County Water District		3. NUMBER NAME FIELDS (1, 2, or 3 from Item 2)	
		4. STATE NAME Kentucky	
		5. COUNTY NAME Todd	
<b>GENERAL BORROWER/LOAN INFORMATION</b>			
6. RACE/ETHNIC CLASSIFICATION 1 - WHITE 2 - BLACK 3 - AIAN 4 - HISPANIC 5 - AFI	7. TYPE OF APPLICANT 1 - INDIVIDUAL 2 - PARTNERSHIP 3 - CORPORATION 4 - PUBLIC BODY 5 - ASSOC OF FARMERS 6 - ORG OF FARMERS 7 - NONPROFIT SECULAR 8 - NONPROFIT FAITH BASED 9 - INDIAN TRIBE 10 - PUBLIC COLLEGE/UNIVERSITY 11 - OTHER		8. COLLATERAL CODE 1 - REAL ESTATE SECURED 2 - REAL ESTATE AND CHATTEL 3 - NOTE ONLY OR CHATTEL ONLY 4 - MACHINERY ONLY 5 - LIVESTOCK ONLY 6 - CROPS ONLY 7 - SECURED BY BONDS 8 - RLF ACCT
9. EMPLOYEE RELATIONSHIP CODE 1 - EMPLOYEE 2 - MEMBER OF FAMILY 3 - CLOSE RELATIVE 4 - ASSOC	10. SEX CODE 1 - MALE 2 - FEMALE 3 - FAMILY UNIT 4 - ORGAN MALE OWNED 5 - ORGAN FEMALE OWNED 6 - PUBLIC BODY	11. MARITAL STATUS 1 - MARRIED 2 - SEPARATED 3 - UNMARRIED (INCLUDES WIDOWED/DIVORCED)	12. VETERAN CODE 1 - YES 2 - NO
13. CREDIT REPORT 1 - YES 2 - NO	14. DIRECT PAYMENT 3 (See FMI)	15. TYPE OF PAYMENT 1 - MONTHLY 2 - ANNUALLY 3 - SEMI-ANNUALLY 4 - QUARTERLY	16. FEE INSPECTION 1 - YES 2 - NO
17. COMMUNITY SIZE 1 - 10 000 OR LESS (FOR SFH AND HPG ONLY) 2 - OVER 10,000		18. USE OF FUNDS CODE (See FMI)	
<b>COMPLETE FOR OBLIGATION OF FUNDS</b>			
19. TYPE OF ASSISTANCE 067 (See FMI)	20. PURPOSE CODE	21. SOURCE OF FUNDS	22. TYPE OF ACTION 1 - OBLIGATION ONLY 2 - OBLIGATION/CHECK REQUEST 3 - CORRECTION OF OBLIGATION
23. TYPE OF SUBMISSION 1 - INITIAL 2 - SUBSEQUENT	24. AMOUNT OF LOAN \$3,210,000.00		25. AMOUNT OF GRANT \$390,000.00
26. AMOUNT OF IMMEDIATE ADVANCE	27. DATE OF APPROVAL MO DAY YR 09 28 18	28. INTEREST RATE 3.1250 %	29. REPAYMENT TERMS 40
<b>COMPLETE FOR COMMUNITY PROGRAM AND CERTAIN MULTIPLE-FAMILY HOUSING LOANS</b>			
30. PROFIT TYPE 1 - FULL PROFIT 2 - LIMITED PROFIT 3 - NONPROFIT			
<b>COMPLETE FOR EM LOANS ONLY</b>		<b>COMPLETE FOR CREDIT SALE-ASSUMPTION</b>	
31. DISASTER DESIGNATION NUMBER (See FMI)	32. TYPE OF SALE 1 - CREDIT SALE ONLY 2 - ASSUMPTION ONLY 3 - CREDIT SALE WITH SUBSEQUENT LOAN 4 - ASSUMPTION WITH SUBSEQUENT LOAN		
<b>FINANCE OFFICE USE ONLY</b>		<b>COMPLETE FOR FP LOANS ONLY</b>	
33. OBLIGATION DATE MO DA YR		34. BEGINNING FARMER/RANCHER (See FMI)	

If the decision contained above in this form results in denial, reduction or cancellation of USDA assistance, you may appeal this decision and have a hearing or you may request a review in lieu of a hearing. Please use the form we have included for this purpose.

Position 2

ORIGINAL - Borrower's Case Folder    COPY 1 - Finance Office    COPY 2 - Applicant/Lender    COPY 3 - State Office

According to the Paperwork Reduction Act of 1995 an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0570-0062. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**CERTIFICATION APPROVAL**

For All Farmers Programs

EM, OL, FO, and SW Loans

This loan is approved subject to the availability of funds. If this loan does not close for any reason within 90 days from the date of approval on this document, the approval official will request updated eligibility information. The undersigned loan applicant agrees that the approval official will have 14 working days to review any updated information prior to submitting this document for obligation of funds. If there have been significant changes that may affect eligibility, a decision as to eligibility and feasibility will be made within 30 days from the time the applicant provides the necessary information.

If this is a loan approval for which a lien and/or title search is necessary, the undersigned applicant agrees that the 15-working-day loan closing requirement may be exceeded for the purposes of the applicant's legal representative completing title work and completing loan closing.

35. **COMMENTS AND REQUIREMENTS OF CERTIFYING OFFICIAL**

Approval of financial assistance is subject to the provisions of the Letter of Conditions dated September 28, 2018, and any amendments thereto.

36. I HEREBY CERTIFY that I am unable to obtain sufficient credit elsewhere to finance my actual needs at reasonable rates and terms, taking into consideration prevailing private and cooperative rates and terms in or near my community for loans for similar purposes and periods of time. I agree to use the sum specified herein, subject to and in accordance with regulations applicable to the type of assistance indicated above, and request payment of such sum. I agree to report to USDA any material adverse changes, financial or otherwise, that occur prior to loan closing. I certify that no part of the sum specified herein has been received. I have reviewed the loan approval requirements and comments associated with this loan request and agree to comply with these provisions.

(For FP loans at eligible terms only) If this loan is approved, I elect the interest rate to be charged on my loan to be the lower of the interest rate in effect at the time of loan approval or loan closing. If I check "NO", the interest rate charged on my loan will be the rate specified in Item 28 of this form.  YES  NO

**WARNING:** Whoever, in any matter within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be fined under this title or imprisoned not more than five years, or both."

Date 9-28, 20 18 [Signature]  
George Brown, Chair  
(Signature of Applicant)

Date \_\_\_\_\_, 20 \_\_\_\_\_  
(Signature of Co-Applicant)

37. I HEREBY CERTIFY that all of the committee and administrative determinations and certifications required by regulations prerequisite to providing assistance of the type indicated above have been made and that evidence thereof is in the docket, and that all requirements of pertinent regulations have been complied with. I hereby approve the above-described assistance in the amount set forth above, and by this document, subject to the availability of funds, the Government agrees to advance such amount to the applicant for the purpose of and subject to the availability prescribed by regulations applicable to this type of assistance.

[Signature]  
(Signature of Approving Official)

Typed or Printed Name: Hilda Gay Legg

Date Approved: 9-28-18 Title: State Director

38. TO THE APPLICANT: As of this date 10-9-18, this is notice that your application for financial assistance from the USDA has been approved, as indicated above, subject to the availability of funds and other conditions required by the USDA. If you have any questions contact the appropriate USDA Servicing Office.



Rural Development

May 29, 2019

Kentucky State Office

771 Corporate Drive,  
Suite 200  
Lexington, KY  
40503

Voice 859.224.7300  
Fax 859.224.7425  
TTY 859.224.7422

SUBJECT: Todd County Water District  
Novelis Water supply project  
Contract Award Concurrence

TO: Area Office  
Madisonville, Kentucky

Based on the bids received and the recommendation of the consulting engineer, Rural Development concurs in the award of subject contract to the low bidder on Contract 1, Horseley Construction, in the amount of \$699,270, and the low bidder on Contract 2, Caldwell Tanks, Inc., in the amount of 1,976,000.

If you have any questions, please contact Julie Anderson, State Engineer, at (859) 224-7348.

*Julie Anderson*  
Hilda G. Legg  
State Director  
Rural Development

cc:

USDA is an equal opportunity provider and employer.

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html), or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at [program.intake@usda.gov](mailto:program.intake@usda.gov).

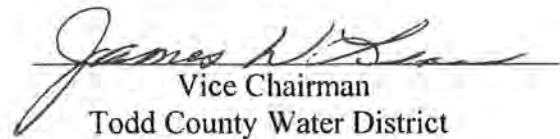
**CERTIFICATE OF VICE CHAIRMAN OF TODD COUNTY  
WATER DISTRICT AS TO STATEMENT REQUIRED BY  
SECTION 2(6) OF 807 KAR 5:069**

I, the undersigned, hereby certify that I am the duly qualified and acting Vice Chairman of the Todd County Water District and that said District is in the process of arranging to finance the construction of improvements to the water system (the "Project"), in cooperation with McGhee Engineering, Guthrie, Kentucky, the Engineers for the District (the "Engineers").

Based on information furnished to me by said Engineers, I hereby certify as follows:

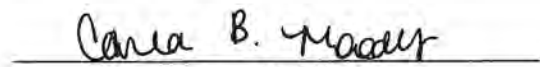
1. That the proposed plans and specifications for the Project have been designed to meet the minimum construction and operating requirements set out in 807 KAR 5:066 Section 4(3) and (4); Section 5(1); Sections 6 and 7; Section 8(1) through (3); Section 9(1) and Section 10.
2. That all other state approvals and/or permits have been obtained.
3. That the rates proposed by the District in its current Application filed with the Kentucky Public Service Commission are contemplated to produce total revenue requirements recommended in the Engineering Reports prepared by such Engineers and filed with the Public Service Commission.
4. That it is now contemplated that construction of the Project will begin on or about June 15, 2019, and will end on or about July 20, 2020.

IN TESTIMONY WHEREOF, witness my signature this May 14<sup>th</sup>, 2019.

  
Vice Chairman  
Todd County Water District

STATE OF KENTUCKY            )  
  ) SS  
COUNTY OF TODD            )

Subscribed and sworn to before me by James W. Lear, Vice Chairman of the Board of Commissioners of the Todd County Water District on this May 14<sup>th</sup>, 2019.

  
Notary Public  
In and For Said State and County

## NOTICE OF PROPOSED RATE CHANGE

In accordance with the requirements of the Kentucky Public Service Commission ("PSC") as set out in 807 KAR 5:069, Section 3, notice is hereby given to the customers of the Todd County Water District ("District") of a change in water rates for users of the District's water system. The changes in water rates are required by the U.S. Department of Agriculture, acting through Rural Development ("RD") in connection with a loan by RD to the District in the principal amount of \$3,210,000 to be evidenced by the issuance by the District of its waterworks revenue bonds in such amount, which RD has agreed to purchase provided the District meets certain conditions of RD, including revising the water rates as set forth below:

### Current Monthly Water Rates

<u>All Meter Sizes</u>	<u>Monthly Rate</u>
First 2,000 gallons	\$24.61 Minimum
Next 8,000 gallons	\$12.88 Per 1,000 gallons
Next 10,000 gallons	\$11.49 Per 1,000 gallons
Next 20,000 gallons	\$10.09 Per 1,000 gallons
All Over 40,000 gallons	\$8.38 Per 1,000 gallons

### Proposed Monthly Water Rates

<u>Residential/Agricultural – All Meter Sizes</u>	<u>Monthly Rate</u>
First 2,000 gallons	\$24.00 Minimum
Next 18,000 gallons	\$12.00 Per 1,000 gallons
All Over 20,000 gallons	\$8.25 Per 1,000 gallons

<u>Industrial – 8-inch Meter and Above</u>	<u>Monthly Rate</u>
First 1,500,000 gallons	\$19,500.00 Minimum
Next 1,500,000 gallons	\$8.25 Per 1,000 gallons
Next 1,500,000 gallons	\$6.50 Per 1,000 gallons
Next 1,500,000 gallons	\$6.30 Per 1,000 gallons
Next 1,500,000 gallons	\$6.15 Per 1,000 gallons
Next 1,500,000 gallons	\$6.05 Per 1,000 gallons
All Over 9,000,000 gallons	\$6.00 Per 1,000 gallons

### Effect of Rate Change

<u>Monthly Usage</u> <u>(gallons)</u>	<u>Current</u> <u>Bill</u>	<u>Proposed</u> <u>Bill</u>	<u>Percent</u> <u>Change</u>
2,000	\$24.61	\$24.00	-2.48%
3,000	\$37.49	\$36.00	-3.97%
4,000	\$50.37	\$48.00	-4.71%
5,000	\$63.25	\$60.00	-5.14%
6,000	\$76.13	\$72.00	-5.42%
8,000	\$101.89	\$96.00	-5.78%
10,000	\$127.65	\$120.00	-5.99%
15,000	\$185.10	\$180.00	-2.76%
20,000	\$242.55	\$240.00	-1.05%
50,000	\$528.15	\$487.50	-7.70%
100,000	\$947.15	\$900.00	-4.98%

The proposed monthly water rates shall be effective for water sold after the date of the final approving Order of the PSC, which Order is expected to be issued no later than 30 days of the filing of the Application. The amount of average usage for all residential and commercial customers in the calendar year 2018 was 3,878 gallons per month thus generating an average monthly billing based at current rates of \$48.80. The proposed monthly rates will decrease the average monthly billing to \$46.54 for an impact of -\$2.26 or -4.63%. The Application for approval of the rate change has been filed with the PSC and may be examined during normal business hours at the following locations: (i) Todd County Water District Office, 2201 New Highway 68 West, Elkton, KY 42220; (ii) PSC, 211 Sower Boulevard, Frankfort, Kentucky, Monday through Friday, 8:00 a.m. to 4:30 p.m., E.T.; and (iii) via the PSC website at <http://psc.ky.gov>. Comments regarding the Application may be submitted to the PSC via its website or by mail to PSC, P.O. Box 615, Frankfort, Kentucky 40602.

The proposed rates are required under the terms of an agreement between the District and RD and KRS 278.023 does not grant the PSC any discretionary authority to modify or reject any portion of the agreement between the District and RD, or to defer the issuance of all necessary orders to implement the terms of the agreement. The RD loan proceeds will be used to finance the costs of the installation of (i) approximately 11,555 linear feet of 12 inch water main plus an associated meter station and appurtenances; and (ii) a 500,000 gallon elevated water storage tank. Signed: James W. Lear, Vice, Chairman Todd County Water District.

## Final Engineering Report As-Bid Project Budget Comparison

CONSTRUCTION COSTS		
Item	Preliminary	As-Bid
Contract No. 1 - Waterline Extension & Meter Station (DIP)	\$ 820,000	\$ 699,270
Contract No. 2 - Tank Addition	\$ 1,980,000	\$ 1,976,000
Contract No. 3 - Line Extensions & SCADA Improvements ( <i>Future Bidding</i> )	\$ -	\$ 300,000
<b>SUBTOTAL - Construction</b>	<b>\$ 2,800,000</b>	<b>\$ 2,975,270</b>
NON-CONSTRUCTION COSTS		
Administrative Costs	\$ 3,000	\$ 4,000
Land Right-of-Way	\$ 20,000	\$ 20,000
Legal Costs	\$ 24,000	\$ 24,000
Preliminary Engineering	\$ 22,000	\$ 22,000
Environmental, Surveys, Studies & Permitting	\$ 48,000	\$ 54,000
Design Engineering	\$ 142,000	\$ 153,300
Construction Phase Engineering Services	\$ 61,000	\$ 65,700
Construction Phase Testing	\$ 15,000	\$ 15,000
Construction Inspection	\$ 115,000	\$ 124,800
Construction Phase Interest & Financing	\$ 70,000	\$ 70,000
<b>SUBTOTAL - Non-Construction</b>	<b>\$ 520,000</b>	<b>\$ 552,800</b>
Contingency	\$ 280,000	\$ 71,930
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$ 3,600,000</b>	<b>\$ 3,600,000</b>
FUNDING SOURCES		
Rural Development Loan	\$ 2,520,000	\$ 3,210,000
Rural Development Grant	\$ 1,080,000	\$ 390,000
<b>TOTAL</b>	<b>\$ 3,600,000</b>	<b>\$ 3,600,000</b>

RECEIVED

MAY 31 2019

PUBLIC SERVICE  
 COMMISSION

MCGHEE ENGINEERING, INC.



## Final Engineering Report As-Bid Project Budget Comparison

CONSTRUCTION COSTS		
Item	Preliminary	As-Bid
Contract No. 1 - Waterline Extension & Meter Station (DIP)	\$ 820,000	\$ 699,270
Contract No. 2 - Tank Addition	\$ 1,980,000	\$ 1,976,000
Contract No. 3 - Line Extensions & SCADA Improvements ( <i>Future Bidding</i> )	\$ -	\$ 300,000
<b>SUBTOTAL - Construction</b>	<b>\$ 2,800,000</b>	<b>\$ 2,975,270</b>
NON-CONSTRUCTION COSTS		
Administrative Costs	\$ 3,000	\$ 4,000
Land Right-of-Way	\$ 20,000	\$ 20,000
Legal Costs	\$ 24,000	\$ 24,000
Preliminary Engineering	\$ 22,000	\$ 22,000
Environmental, Surveys, Studies & Permitting	\$ 48,000	\$ 54,000
Design Engineering	\$ 142,000	\$ 153,300
Construction Phase Engineering Services	\$ 61,000	\$ 65,700
Construction Phase Testing	\$ 15,000	\$ 15,000
Construction Inspection	\$ 115,000	\$ 124,800
Construction Phase Interest & Financing	\$ 70,000	\$ 70,000
<b>SUBTOTAL - Non-Construction</b>	<b>\$ 520,000</b>	<b>\$ 552,800</b>
Contingency	\$ 280,000	\$ 71,930
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$ 3,600,000</b>	<b>\$ 3,600,000</b>
FUNDING SOURCES		
Rural Development Loan	\$ 2,520,000	\$ 3,210,000
Rural Development Grant	\$ 1,080,000	\$ 390,000
<b>TOTAL</b>	<b>\$ 3,600,000</b>	<b>\$ 3,600,000</b>

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# PRELIMINARY ENGINEERING REPORT

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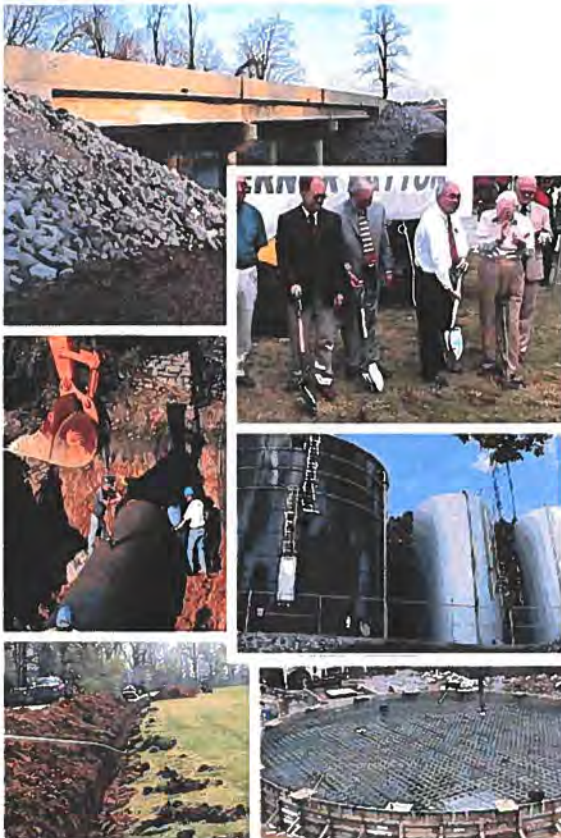
## TODD COUNTY WATER DISTRICT NOVELIS WATER SUPPLY PROJECT

March 2019—Update

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**Preliminary Engineering Report  
(Amended 03/13/19)**

prepared for the

**Todd  
County  
Water  
District**



**Novelis Water Supply Project**

**Dr. George Brown**  
*Chairman*

**Edward Slack**  
*Treasurer*

**Lois Brown**  
*Secretary*

**Tony Adler**  
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3/13/19  
March 2019

**Preliminary Engineering Report**  
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- C Correspondence from Todd Gertz, Director of Engineering, regarding Water Demands

## 1.0 INTRODUCTION

The Todd County Water District (TCWD) was chartered in 1971 to supply potable water to rural residents of Todd County, Kentucky. The District is governed by five board members, and is regulated by the Kentucky Public Service Commission. The Board includes three members from Todd County and two from Logan County because of the significant number of customers served by the TCWD in the Lake Malone area of Logan County. Todd County has authority to plan, design, finance, construct, operate, replace and maintain the distribution facilities within its service area.

The TCWD is a relatively large water system covering approximately 90% of the Todd County area. With the exception of a few isolated locations in the west and southwest parts of the county, most of the roads within the county have water service, with only short extensions needed from time to time to accommodate new development. The Todd County water system is comprised of nearly 450 miles of water distribution lines and four water storage tanks with an approximate total capacity of 1,378,000 gallons, all of which serves approximately 3,450 customers in rural Todd County and a small portion of northwestern Logan County and southeastern Christian County.

As of Spring 2003, the Todd County Water District began to purchase all of its treated water from the Logan Todd Regional Water Commission (LTRWC). The Commission's water treatment facility is rated at 10 million gallons per day, and its distribution system consists of nearly 85 miles of pipeline and three storage tanks totaling 3,500,000 gallons in capacity. Per the Commission's 2017 records, the average daily wholesale water demand within the Todd County system was 572,500 gallons per day. Todd County has four meter stations with the Commission, two located in the southern parts of the county, one north of Elkton, and an inactive station in Allensville.

In January 2018, Novelis Inc. announced plan to build an approximately \$300 million automotive aluminum sheet manufacturing facility on a 153 acre parcel located just outside of Guthrie, Kentucky. The facility will include heat treatment and pre-treatment lines, which prepare aluminum for use in vehicle parts such as hoods, doors, lift gates, and fenders. The company, which plans to create approximately 125 new jobs through the expansion, officially broke ground in May with the facility slated to be in production in 2020.

Todd County Water District will require extension of its water system to serve the new Novelis facility, which is currently under construction north of the City of Guthrie. This portion of the work will be performed by two separate contracts: Contract 1) installation of over two miles of 12-inch waterline and appurtenances to supply approximately 115,000 gpd in new demand plus relocate approximately 1,000 LF of 6-inch waterline due to associated highway improvements near the site; and Contract 2) construction of a new 500,000 gallon elevated water tank to provide ample storage and pressure near the new facility for both supply and fire protection. Contract 1 is expected to take less than 6 months to construct, whereas the tank contract (#2) is expected to take over 12 months to construct. The tank and pipeline

system is being designed to accommodate what is projected to be an ultimate 1 MGD water demand when the Novelis facility is completely built out.

Also, the project will include construction of over 2 miles of small diameter waterlines to provide new service to rural customers in the water system. Additionally, the District wishes to install multiple master meters in strategic locations within the water system equipped with SCADA components, all in an effort to improve operation efficiency and monitoring. This portion of the project (Contract 3) is expected to take less than 3 months to construct.

Overall, the total cost of the proposed project is estimated to be \$3,600,000.

## 2.0 PROJECT PLANNING AREA

### 2.1 Location

The construction of the Todd County Water District's project will be split into three construction contracts. Contract 1 will be contained to one highway corridor, with approximately 2 miles of new waterline extension along US Highway 79, between KY Highway 848 and the CSX Railroad. The contract will consist of 12" piping plus the installation of a new metering point with the Logan Todd Regional Water Commission along with needed SCADA equipment to monitor and control flow to the new pressure zone. The contract will also include the relocation of a short section of 6-inch waterline due to the modification of the US Highway 79 and Old Railroad Lane intersection by the Kentucky Transportation Cabinet. Both PVC and ductile iron piping will be considered for all waterline improvements.

The tank portion (Contract 2) of the project involves the construction of a 500,000-gallon elevated water storage tank. The tank's proposed location is within a 100'x100' tract on the Novelis site at the intersection of US Highway 79 and the CSX railroad. This tank site will provide the District with its second storage structure in the southern half of the county. The proposed overflow of the tank will be approximately 801', which would match the overflow of Logan Todd Regional Water Commission's Todd County tank. The aforementioned telemetry system and new metering station (or control valve mechanism) will be used to fill the new tank, and its operation and system pressure will be maintained by the tank's water level.

Contract 3 will consist of nearly 2 miles of short waterline extensions along 3 various roadways plus various SCADA additions/improvements. Additionally, the District has identified other work that they wish to include in the project if extra funds are available, including extension of over 14 miles of varying sized waterlines along 13 other roadways.

The general location of these improvements, including alternates, are shown in Exhibit E-1 and listed in Table 1.

**Table 1**  
**Project Road List**

Map ID	Contract 1 Roadway Areas	Length (Miles)	Number of Houses	Line Size (Inches)
A	US Highway 79 Extension (CSX RR to KY Hwy 848)	2.10	10	12
B	Old Railroad Lane Relocation (US Highway 79 X-ion)	0.20	0	6
	<b>SUBTOTAL - New Line Extensions (Contract 1)</b>	<b>2.30</b>	<b>10</b>	
Map ID	Contract 3 Roadway Areas	Length (Miles)	Number of Houses	Line Size (Inches)
1	McKinney Road	0.20	1	3
2	Latham Road	0.25	2	3
3	Davenport Road	0.75	2	3
	<b>SUBTOTAL - New Line Extensions (Contract 3)</b>	<b>1.20</b>	<b>5</b>	
Map ID	Alternate Roadways	Length (Miles)	Number of Houses	Line Size (Inches)
4	Johnson Mill Road	0.74	5	3
5	Lack Road	0.84	5	3
6	Lawson-Poindexter Road	0.94	2	4
7	B. White Road	0.93	3	6
8	Crawford Road	0.68	1	3
9	Hall-Latham Road	0.91	2	4
10	Hammacksville Road	1.06	1	4
11	Maton Road	1.35	2	4
12	Morton Road	1.79	4	4
13	Squire Grove Loop	0.41	0	4
14	Starnes Road	0.50	1	3
15	KY Highway 508 (Butler Road Replacement)	5.90	75	6
16	KY Highway 171 (Allegre Road Replacement)	0.74	10	6
	<b>SUBTOTAL - Alternate Line Extensions</b>	<b>14.27</b>	<b>99</b>	

## 2.2 Land Use and Environmental Resources Present

As stated earlier, the line portion of Contract 1 is contained almost entirely to a short corridor of US Highway 79, along approximately 2 miles of roadway in a southern rural area of Todd County. The line work and other appurtenances of this Contract is proposed to be constructed within utility easements previously acquired or to be acquired by the Todd County Water District. This portion of the project will affect six main resources during construction: residential, commercial, agriculture, grazing, transportation and industrial (under construction). The general construction effect to the resources is the disturbances associated with building the facilities. No long-term impact is expected to any environmental resource.

The tank portion (Contract 2) of the project will be located on the same industrial site, which is currently under construction. The general construction effect to this resource is the disturbances associated with building the facilities. However, no long-term impact is expected.

Contract 3 will consist of nearly 2 miles of short waterline extensions along 3 various roadways in various locations of the county plus SCADA additions (master

meters) at miscellaneous sites. The line work of this Contract will be constructed in road right-of-ways and/or new utility easements, which the District will have to obtain. The SCADA upgrades will be performed on existing easements or District properties with the installation of new master meter vaults and radio equipment to transmit pertinent info to the water district office. Furthermore, this portion of the project will also affect four main resources during construction: residential, agriculture, grazing and transportation. The general construction effect to the resources is the disturbances associated with building the facilities. No long-term impact is expected to any environmental resource.

The Kentucky Heritage Council reviewed the Contract 1 and 2 portions of the project in late 2018, and the State Historical Preservation Officer (SHPO) issued a letter on October 18, 2018 recommending that the initial project would result in no effect to historical properties per an archaeological report submitted by Pennyryle Archaeological Services. An archeological investigation is not anticipated for the affected line routes of Contract 3 due to the close nature of the work to road right-of-ways. However, if such an investigation is required, Lee Foster of Pennyryle Archaeological Services will conduct any necessary reviews with a second report submitted to the SHPO. Regardless, it is expected that no historical resource will be affected by any portion of the proposed project.

The original project has been reviewed by the Kentucky State Clearinghouse. The Clearinghouse review identified no conflicts with state or local planning, and recommended approval of the project. The Clearinghouse review letter is included in Appendix A.

The following exhibits indicate the environmental resources present within the project planning area:

- A highway map of all proposed water lines (Contract 1, Contract 3 & Alternates), indicating the areas to be affected and the surrounding area, is attached as Exhibit 1.
- Topographic map of the proposed waterlines in Contract 1 and tank addition of Contract 2 is illustrated in Exhibit E-2. The base map is a USGS 7.5' quadrangle image.
- Topographic map of the proposed waterlines in Contract 3 are illustrated in Exhibits E-3 thru E-5. The base map for each is a USGS 7.5' quadrangle image.
- County soil survey data from the Soil Conservation Service is shown in Exhibit 6.
- Waterlines (all contracts) that are near or traverse through defined FEMA floodplain zones are illustrated in Exhibits E-7 thru E-10.



### 2.3 Growth Areas and Population Trends

The population history of Todd County is an important element in determining the growth patterns over the last 70 years. Analysis of the population history will assist in forming a reliable estimate of the future water needs of the project area.

According to historical records, Todd County's population has averaged around 12,000 persons for the past eight census collections. Table 2 provides the population history and projections of the county based on data obtained from the U.S. Bureau of the Census.

Table 2  
Population History and Projections

YEAR	Historical								Projections					
	1940	1950	1960	1970	1980	1990	2000	2010	2015	2020	2025	2030	2035	
TODD	Elkton	1,214	1,312	1,448	1,612	1,815	1,789	1,984	2,062	2,107	2,144	2,175	2,200	2,215
	Guthrie	1,272	1,253	1,211	1,200	1,361	1,504	1,469	1,419	1,450	1,476	1,497	1,514	1,525
	Trenton	572	577	542	496	465	378	419	384	392	399	405	410	413
	Rural Areas	11,176	9,748	8,163	7,515	8,233	7,269	8,099	8,595	8,781	8,939	9,067	9,168	9,234
	Todd County	14,234	12,890	11,364	10,823	11,874	10,940	11,971	12,460	12,730	12,958	13,144	13,292	13,387
	% Change		-9.4%	-11.8%	-4.8%	9.7%	-7.9%	9.4%	4.1%	2.2%	1.8%	1.4%	1.1%	0.7%
<b>Notes to Table 1:</b>		1. Shaded areas have been calculated based on census and projection data.												
<b>Sources to Table 1:</b>		1. Historical & Projections provided by the KY State Data Center and Census Bureau University of Louisville, State Data Center ( <a href="http://cbpa.louisville.edu/ksdc/">http://cbpa.louisville.edu/ksdc/</a> )												

Analyzing Table 2 from 1940 to 2010 shows that Elkton and Guthrie have grown overall with some fluctuations, but Trenton and the rural areas have declined in population since 1940. The rural areas of Todd County show a growing trend, evident by the greater customer base of the Todd County Water District. The past two censuses reveal growth in the county overall, and projections call for modest growth over the next 25 years.

Several factors influence the growth of a community, some of which include accessibility, technology, education, water infrastructure, sewer facilities, and jobs. In recent years, the community has experienced the benefit of the US Highway 68 four-lane project among others, which has increased the areas access to larger Kentucky cities such as Hopkinsville and Bowling Green plus improved access to Interstates 24 and 65. High speed internet and wireless technology is becoming more readily available to the communities, creating greater and easier contact to the rest of the world. The local school system is strong and provides a quality education. The District and other communities within the county have worked together to secure a reliable source of potable water for the foreseeable future as the county went online with the Logan Todd Regional Water Commission in 2003.

Further analysis of these projections indicates Todd County's population is projected to grow modestly every five years, adding about 927 persons by 2035. It should be noted that population would be impacted by job availability or the absence of an abundant water supply. An ample and readily available supply of water will promote growth while the lack thereof will limit growth. These factors must be

considered when reviewing this report since many assumptions are dependent on these projections.

### 3.0 EXISTING FACILITIES

#### 3.1 History and Assets

The Todd County Water District (TCWD) was formed by Todd County Court order in 1971 to supply potable water to rural residents of Todd County, Kentucky. There are four public water systems in Todd County, those being Elkton, Guthrie, Trenton and the TCWD. The Elkton and Guthrie systems serve the incorporated areas of those communities and only limited areas adjacent to town. The Trenton system serves the town's incorporated area, and a portion of the rural area south of town along Highway 104.

The TCWD water system is comprised of approximately 447 miles of water line and a total water storage capacity of 1,378,000 gallons. The existing distribution system consists of 10", 8", 6", 4", and 3" PVC lines. The general service area is depicted in Exhibit 2, which illustrates the general distribution layout. The existing transmission and distribution lines generally radiate from their decommissioned (2003) water treatment plant located near the Allegre community in northern Todd County. The system is well laid out with many loops. However, there are some dead end and low-flow lines within the system that require frequent flushing.

TCWD has four water storage structures to serve the water system and one primary pumping station that boosts water into the higher-pressure north zone. Only three of the four existing water storage tanks provide useful storage for the TCWD system. The newly constructed Coal Bank elevated water tank and the Clifty tank provide 500,000 and 250,000 gallons of storage respectively to the northern pressure zone. The Hammackville elevated tank has a storage capacity of 250,000 gallons and provides pressure to a small area in the southwestern part of the County. The fourth tank located on Allenders Hill acts as a pump tank or reservoir for the Logan Todd Regional Water Commission's booster pump station at that location. Currently, the majority of the southern part of the county is served directly from an existing 1,500,000 gallon elevated tank owned by the LTRWC.

The Logan Todd Regional system supplies water to the TCWD system in three locations. The southern feed point is located at the base of the LTRWC tank described above, while the others are located at the Allender's Hill tank in northern Todd County and at Trenton for the Hammackville tank area. Flow through each of these metering points is controlled by the LTRWC SCADA system. The northern pressure zone is controlled by water levels in the Clifty and Coal Bank Road tanks. The southern pressure zone is fed directly from the LTRWC tank, and the Trenton feed is controlled by the water level in the Hammackville tank.

#### 3.2 Regulatory Compliance

According to the Division of Water's remarks within the Clearinghouse Comments, the Todd County water system is currently in compliance with

appropriate regulatory agencies. No other remarks were given to suggest that the water system was in or near a noncompliance status.

### 3.3 Existing Financial Charges and Status

#### 3.3.1 *Current Rate Schedule (Effective 7-14-17)*

All Meter Sizes: Residential & Commercial

First	<u>2,000</u>	Gallons @	<u>\$ 24.61</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 12.88</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 11.49</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 10.09</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 8.38</u>	per 1,000 Gallons

#### 3.3.2 *Former Rate Schedule (Rates effective 3-1-14; audit period)*

All Meter Sizes: Residential & Commercial

First	<u>2,000</u>	Gallons @	<u>\$ 21.60</u>	Minimum
Next	<u>8,000</u>	Gallons @	<u>\$ 11.30</u>	per 1,000 Gallons
Next	<u>10,000</u>	Gallons @	<u>\$ 10.09</u>	per 1,000 Gallons
Next	<u>20,000</u>	Gallons @	<u>\$ 8.87</u>	per 1,000 Gallons
All Over	<u>40,000</u>	Gallons @	<u>\$ 7.39</u>	per 1,000 Gallons

#### 3.3.3 *O&M Costs (FYE 12/31/16)*

Item No.	Expense Item	Amount
1	Payroll Expenses & Benefits	\$ 483,491.00
2	Purchased Water	\$ 917,227.00
3	Distribution Expense	\$ 65,145.00
4	Contract & Professional Services	\$ 34,394.00
5	Utilities	\$ 30,049.00
6	Administrative Expense	\$ 36,733.00
7	Office Expenses	\$ 35,051.00
8	Depreciation	\$ 515,894.00
9	Insurance	\$ 31,634.00
10	Travel	\$ 14,722.00
11	Bad Debts	\$ 22,697.00
12	Miscellaneous	\$ 2,121.00
<b>Total Utility Expense</b>		<b>\$ 2,189,158.00</b>

#### 3.3.4 *Long Term Debts (as of 12/31/16)*

Date of Issue	Bond/Note Holder	Principal Balance	Maturity Date	Bond Type	Interest Rate
2005	Rural Dev	\$ 973,000	2045	Revenue	4.125%
2008	Rural Dev	\$ 1,664,500	2048	Revenue	4.125%
2010	Rural Dev	\$ 952,000	2050	Revenue	3.000%
2012	KY Rural Water	\$ 1,815,000	2033	Revenue	2.875%
Total		\$ 5,404,500			

## 4.0 NEED FOR PROJECT

### 4.1 Health and Safety

The primary purpose of this project is to provide a reliable supply of potable water to the new Novelis industrial complex. This facility is under construction, and it is expected to be in production by 2020, with utilities needed in place by Spring 2019. In early 2018, the Todd County Water District committed to local and state economic development officials that they would supply the required flow and pressure to the industrial site, if chosen. Based on initial operational expectations, the facility expects average water consumption in the neighborhood of 56,250 gpd.

Secondly, the District completed their last significant expansion project in 2013. Prior to then and since, the water system has received several requests for water service (extensions). Hence, all of the water lines, including alternates, slated for Contract 3 are proposed to bring water service to nearly 20 new customers that currently rely on groundwater sources or hauled water. Providing water to these potential residences is consistent with Todd County's approved Water Supply Plan as well as the state's initiative to provide adequate and potable water to all homes. Other alternates could improve current service to as many as 85 existing customers.

### 4.2 System O&M

There are three primary reasons or benefits for the District's proposed project. The first of which is to fulfill their obligation to supply an ample flow of water to meet the demands of the new industrial client (Novelis). The construction of approximately 11,000 LF of 12-inch pipeline and a 500,000 gallon elevated tank will insure their ability to adequately serve the new customer while improving hydraulics in the immediate area of the project. Also, with the addition of a new water tank and resulting pressure zone, the District will be able to remove a portion of their South Todd customer base from the current, direct feed of Logan Todd's South Todd tank. Furthermore, the tank and pipeline system is being designed to accommodate what is projected to be an ultimate 1 MGD water demand when the Novelis facility is completely built out.

The second portion of the project will involve the relocation of a short section of an existing 6-inch waterline. The relocation is necessary due to the Kentucky Transportation Cabinet's proposed highway widening of US Highway 79 and relocation of an intersection (Old Railroad Lane and US Highway 79). The KYTC project does not include funds for the relocation of existing utilities.

The third benefit of the project is to provide a reliable and potable water source to as many as 20 potential residences as described in the preceding section. Many of these residences have been on a waiting list for some time with requests for service from the District. Other alternates would improve current service to as many as 85 existing customers. Also, if funds allow, the District plans to replace or install new master meters equipped with SCADA components and features to better monitor the overall system from their headquarters and remotely.

### 4.3 Growth

As mentioned earlier, the population of Todd County should grow nearly 7.5% over the next 25 years based upon reliable census records and expected growth. The proposed project is necessary to provide continued and reliable water service to all its nearly 3,466 current customers plus to properly serve the new industry. All of the new infrastructure will insure the District's ability to properly serve the existing customer base plus future growth in the US Highway 79 corridor near Guthrie.

## 5.0 ALTERNATIVES CONSIDERED

A resolution to the needs faced by the Todd County Water District is a relatively simple project with two alternatives.

### 5.1 Alternative 1

The first obvious alternative is to do nothing or a smaller variation of the project. However, the District would be unable to comply with their obligations to provide adequate water service for the Novelis facility, and it would not address the new company's potable water needs. Therefore, the 'do nothing' alternative is not a viable option.

### 5.2 Alternative 2

The second alternative considered includes building a new water storage tank and connecting with the Logan Todd Regional Water Commission's transmission line, which runs along KY Highway 848. This connection point is approximately 2 miles from the LTRWC water treatment plant and just over 2 miles from LTRWC's South Todd water tank (Penick site), which is north of the Novelis site along Old Railroad Lane. The proximity to an abundant supply of potable water plus the District's ability to transition a significant portion of their Southern Todd County customers off the current direct feed at the Penick site and adequately serve the new industrial customer offered the most advantages to the current operation of the system while insuring enhanced abilities to serve future industrial growth of the Novelis facility. Also, the project offers the ability to provide an extension of service along at least 3 other roadways to serve 5 new customers and add SCADA equipped master meter sites.

#### 5.2.1 Description

The project will include the installation of a new metering station and SCADA equipment with LTRWC to control and monitor flow into a new 500,000 gallon elevated water tank, which will be built near the intersection of US Highway 79 and the CSX railroad. The project will include connecting the new meter station and tank with nearly 11,000 LF of 12" waterline that will run along US Highway 79.

Secondarily, the project provides the District the opportunity and funds to relocate approximately 1,000 LF of existing 6" waterline due to a proposed road widening project by the Kentucky Transportation Cabinet (KYTC). KYTC

will not be funding utility relocations associated with the highway project, leaving the District the burden of performing the required improvements. The project also provides expansion of the water system along portions of 3 roadways by installing 3" PVC treated water lines.

### 5.2.2 *Environmental Impacts and Land Requirements*

The alternative has little to no impact upon the environment and land resources because the proposed construction will be done along existing easements and highways. The line relocations and extension of Contract 1 and Contract 3 are proposed for construction in pipeline easements where possible or in county/state right-of-way. The tank addition (Contract 2) is proposed on a 100'x100' site reserved for the District on the Novelis site. As mentioned earlier, the project will affect six main resources during construction: residential, commercial, agriculture, grazing, transportation and industrial (under construction). The general construction effect to these resources is the disturbances associated with building the facilities. However, no long-term impact is expected to any environmental resource.

### 5.2.3 *Construction Problems*

There are no severe construction problems foreseen for the project. The Todd County service area has varying soil conditions ranging from near ideal in some of the southern parts of the county, to sporadic instances of rock outcrops in the north. All of the pipeline routes and the proposed tank sites are very accessible, and there is little evidence of a high water table. Mobilization issues should be minimal for Contract 1 since the work is contained along the same corridor throughout, but it will be more significant for Contract 3 as that work is more spread throughout the county.

### 5.2.4 *Cost Estimates*

The Todd County Water District's Novelis Water Supply Project is estimated to have a total cost of \$3,600,000. The project cost consists of construction, non-construction and contingency costs, which are approximately \$2,975,270, \$552,800 and \$71,930 respectively. The project is anticipated to be funded in part by a \$390,000 grant and \$3,210,000 loan, all from Rural Development.

## 6.0 PROPOSED PROJECT

### 6.1 Project Design

#### 6.1.1 *Water Supply*

The Logan Todd Regional Water Commission's plant will serve the proposed project. Based upon 2017 figures from LTRWC, the water treatment plant is producing nearly 4,000,000 gallons per day, which is approximately 40% of the design capacity. Therefore, sufficient capacity exists to serve the District since the average

demand of the new industrial customer is estimated to be at 56,250 gallons per day, and the maximum number of new residential customers (19) from Contract 3 should only add an additional 4,900 gpd to the total demand, based on average usage.

### 6.1.2 *Storage*

The proposed project will involve the construction of a new 500,000-gallon elevated storage tank (OF = ~801'). This new tank will be constructed on the edge of the Novelis site, which is located just outside the northern city limits of Guthrie, Kentucky. The new tank will place a second sufficiently sized water storage supply in the southern half of the District's water system, which will lessen the direct demand from their Logan Todd feed at the South Todd Meter Station. Overall, the water system's total storage capacity will increase to 1,717,800 gallons. The proposed tank site is illustrated in Exhibit E-2.

### 6.1.3 *Distribution Layout*

The waterline construction of the Todd County Water District improvement project will be spread out over nearly 4 miles of rural roadways in two distinct contracts. In addition, nearly 15 miles of alternate extensions have been identified for project inclusion should extra funds be available after initial of all contracts. The affected roadways are not clustered together as typical in most system upgrades, but they are mostly "fill-in" lines to serve new customers and offer hydraulic improvements for water quality and flow.

For the waterline construction of Contract No. 1, the nearest available connection point with the Logan Todd Regional Water Commission's transmission line is nearly 2 miles northeast of the Novelis industrial site. The obvious route for a new distribution main in the District's water system is along US Highway 79 between the CSX railroad and KY Highway 848. There is minimal change in elevation along the route, and nearly all of the route is open agriculture ground. Both PVC and ductile iron pipe pricing will be solicited in the bidding.

The waterline construction of Contract No. 3 (System-wide Extensions & Improvements) will be contained along 3 roadways (base bid). The base bid work will include the new installation of approximately 6,150 LF of 3" PVC treated water line.

Few challenges are expected along the routes of the project. There are no noticeable rock outcrops, and only one significant road bore is needed to cross US Highway 79 onto the Novelis site itself. The project will require a few stream crossings, but the streams are of the wet weather variety and crossings can likely be achieved during dry periods.

The project area is illustrated in Exhibit E-1 through E-10.

#### 6.1.4 *Regulatory Compliance*

A portion of the proposed project has been submitted to the Kentucky State Clearinghouse for their comments. Those clearinghouse comments are included in Appendix A. The clearinghouse review of the proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Furthermore, no notices have been received and none are expected to suggest that the water system is in or near a noncompliance status.

#### 6.1.5 *Hydraulic Calculations*

For preliminary planning purposes, the computer hydraulic simulator, KYPIPE 2000, has been used to construct a system wide model to determine the hydraulic characteristics of the Todd County Water District system as it currently exists. The model includes all of the existing lines from the water supply connection with Logan Todd, plus the proposed line upgrades and other features of the project. The modeling indicates that the waterlines may be constructed as proposed. Detailed model results are available upon request.



## 6.2 Cost Estimate

The proposed itemized cost estimate of Todd County Water District's Novelis Water Supply Project is shown in Table 3 and proposed funding package is shown in Table 4.

Table 3  
Project Cost Estimate

<b>CONSTRUCTION</b>		
<b>Contract/Roads</b>	<b>Original Budget</b>	<b>Rev. Budget</b>
Contract 1 - Novelis Waterline Extensions & Meter Station (Horsley)	\$ 820,000	\$ 699,270
Contract 2 - Novelis Tank Addition (Caldwell Tanks)	\$ 1,980,000	\$ 1,976,000
Contract 3 - Miscellaneous Line Extensions & SCADA (Future bidding)	\$ -	\$ 300,000
<b>Total Construction Cost</b>	<b>\$ 2,800,000</b>	<b>\$ 2,975,270</b>
<b>NON-CONSTRUCTION</b>		
Administrative	\$ 3,000	\$ 4,000
Land & Right-of-Way	\$ 20,000	\$ 20,000
Legal	\$ 24,000	\$ 24,000
Preliminary Engineering	\$ 22,000	\$ 22,000
Environmental, Surveys, Studies & Permitting	\$ 48,000	\$ 54,000
Design Engineering	\$ 142,000	\$ 153,300
Construction Phase Engineering Services	\$ 61,000	\$ 65,700
Construction Phase Testing	\$ 15,000	\$ 15,000
Construction Inspection	\$ 115,000	\$ 124,800
Construction Phase Interest & Financing	\$ 70,000	\$ 70,000
<b>SUBTOTAL - Non-Construction</b>	<b>\$ 520,000</b>	<b>\$ 552,800</b>
Contingency	\$ 280,000	\$ 71,930
<b>TOTAL PROJECT COST</b>	<b>\$ 3,600,000</b>	<b>\$ 3,600,000</b>

Table 4  
Proposed Funding Package

<b>FUNDING SOURCES</b>	
Rural Development Grant	\$390,000
Rural Development Loan	\$3,210,000
<b>TOTAL ESTIMATED PROJECT COST</b>	<b>\$3,600,000</b>

Additionally, a detailed cost estimate of the alternative work items are shown in Table 5. These work items are included for review in the event extra funds, including contingency, are available after bidding the primary scope of work.

Table 5  
Alternative Work Items: Cost Estimate

Road	Quantity	Units	Estimated Cost
Johnson Mill Road	1	LS	\$ 28,600
Lack Road	1	LS	\$ 40,300
Lawson-Poindexter Road	1	LS	\$ 33,200
B. White Road	1	LS	\$ 59,000
Crawford Road	1	LS	\$ 31,100
Hall-Latham Road	1	LS	\$ 32,700
Hammacksville Road	1	LS	\$ 38,250
Maton Road	1	LS	\$ 63,700
Morton Lane	1	LS	\$ 79,800
Squire Grove Loop	1	LS	\$ 47,450
Starnes Road	1	LS	\$ 24,600
KY Highway 508 (Butler Road Replacement)	1	LS	\$ 375,000
KY Highway 171 (Allegre Road Replacement)	1	LS	\$ 47,000
<b>TOTAL - Construction (All Alternate Roads)</b>			<b>\$ 900,700</b>

### 6.3 Annual Operating Budget

The proposed annual operating budget for the Todd County Water District's Novelis Water Supply Project is shown in Table 6.

**Table 6**  
**Proposed Operating Budget**

	Existing <sup>(1)</sup>	KY Hwy 181 Project	Novelis Project	Future
<b>Operating Income</b>				
Water Sales	\$2,007,944	\$15,720 <sup>(3)</sup>	\$254,883 <sup>(10)</sup>	\$2,629,923 <sup>(8)</sup>
Late Charges	\$29,162	\$0	\$0	\$29,162
Other Charges	\$43,574	\$0	\$0	\$43,574
<b>Total Operating Income</b>	<b>\$2,080,680</b>	<b>\$15,720</b>	<b>\$254,883</b>	<b>\$2,702,659</b>
<b>Operating and Maintenance Expense</b>				
Purchased Water	\$917,227	\$4,880 <sup>(3)</sup>	\$80,277 <sup>(10)</sup>	\$1,002,384
Payroll Expense & Benefits	\$483,491	\$14,500 <sup>(4)</sup>	\$0	\$497,991
Distribution Expense	\$65,145	\$1,950 <sup>(4)</sup>	\$0	\$67,095
Contract Services & Prof. Fees	\$34,394	\$1,030 <sup>(4)</sup>	\$0	\$35,424
Utilities & Telephone	\$30,049	\$900 <sup>(4)</sup>	\$0	\$30,949
Administrative Expense	\$36,733	\$1,100 <sup>(4)</sup>	\$0	\$37,833
Office Expenses	\$35,051	\$1,050 <sup>(4)</sup>	\$0	\$36,101
Insurance	\$31,634	\$950 <sup>(4)</sup>	\$0	\$32,584
Travel	\$14,722	\$440 <sup>(4)</sup>	\$0	\$15,162
Bad Debts	\$22,697	\$680 <sup>(4)</sup>	\$0	\$23,377
Miscellaneous	\$2,121	\$60 <sup>(4)</sup>	\$0	\$2,181
<b>Total Operating Expenses</b>	<b>\$1,673,264</b>	<b>\$27,540</b>	<b>\$80,277</b>	<b>\$1,781,081</b>
<b>Net Operating Income</b>	<b>\$407,416</b>	<b>(\$11,820)</b>	<b>\$174,606</b>	<b>\$921,578</b>
<b>Non-Operating Income (Expense)</b>				
Interest Income	\$3,782	\$0	\$0	\$3,782
RUS Interest (Bonds pre-2017)	(\$143,724)	\$0	\$0	(\$131,362) <sup>(6)</sup>
RUS Principal (Bonds pre-2017)	(\$56,500)	\$0	\$0	(\$63,000) <sup>(6)</sup>
RUS Interest (KY 181 Project)	\$0	(\$84,370) <sup>(5)</sup>	\$0	(\$84,370) <sup>(5)</sup>
RUS Principal (KY 181 Project)	\$0	(\$46,780) <sup>(5)</sup>	\$0	(\$46,780) <sup>(5)</sup>
RUS Interest (Novelis Issue)	\$0	\$0	(\$100,325) <sup>(9)</sup>	(\$100,325) <sup>(9)</sup>
RUS Principal (Novelis Issue)	\$0	\$0	(\$45,180) <sup>(9)</sup>	(\$45,180) <sup>(9)</sup>
Non-RUS Interest	(\$55,325)	\$0	\$0	(\$48,863) <sup>(6)</sup>
Non-RUS Principal	(\$100,000)	\$0	\$0	(\$110,000) <sup>(6)</sup>
<b>Total Non-Operating Income &amp; Debt</b>	<b>(\$351,767)</b>	<b>(\$131,150)</b>	<b>(\$145,505)</b>	<b>(\$626,098)</b>
<b>Net for Coverage &amp; Depreciation</b>	<b>\$55,649</b>	<b>(\$142,970)</b>	<b>\$29,101</b>	<b>\$295,480</b>
<b>10% Debt Service Coverage</b>	<b>(\$35,555)</b>	<b>(\$13,115)</b>	<b>(\$14,551)</b>	<b>(\$62,988)</b>
<b>Subtotal</b>	<b>\$20,094</b>	<b>(\$156,085)</b>	<b>\$14,550</b>	<b>\$232,492</b>
<b>Short Lived Assets <sup>(2)</sup></b>	<b>(\$65,349)</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$60,000)</b>
<b>Net for Depreciation</b>	<b>(\$45,255) <sup>(7)</sup></b>	<b>(\$156,085)</b>	<b>\$14,550</b>	<b>\$172,492</b>

**Notes:**

1. Based on the December 31, 2016 Audit Report.
  2. The District presently places, & plans to continue with, approximately \$5,000 per month into a "Depreciation Reserve" account.
  3. Based on 26 new customers (Contract 2) using 4,000 gal/month at current TCWD rates & current LTRWC wholesale rate (\$3.91)
  4. Based on 3% nominal increase due to anticipated annual cost increases.
  5. Estimated Project Debt Service: Based on a **\$3,068,000 RUS loan** at 2.75% and 38 payments
  6. Debt Service per Amortization Schedules. 2019 Figures used for Future.
  7. The 2016 Depreciation Expense was **\$515,894** per the 2016 Audit.
  8. Combined Project Revenues: New Residential Customers (26) + New Industrial Customer (56,250 gpd); all with new rates
  9. Estimated Project Debt Service: Based on a **\$3,210,000 RUS loan** at 3.125% and 38 payments
  10. Based on new industrial customer using 56,250 gpd at proposed TCWD rate & current LTRWC wholesale rate (\$3.91).
- Usage values based on the lowest estimated demand, mentioned in Novelis memo (See Appendix C)

Table 7 illustrates the project's rate schedule with the requested RUS Grant, which was outlined in USDA's Letter of Conditions, issued to the District on September 28, 2018.

Table 7  
Project Rate Schedule per USDA Letter of Conditions

Residential & Commercial Customers: All Meter Sizes

First	<u>2,000</u>	Gallons @	<u>\$ 24.00</u>	Minimum
Next	<u>18,000</u>	Gallons @	<u>\$ 12.00</u>	per 1,000 Gallons
All Over	<u>20,000</u>	Gallons @	<u>\$ 8.25</u>	per 1,000 Gallons

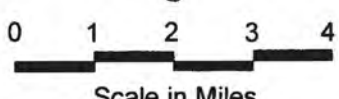
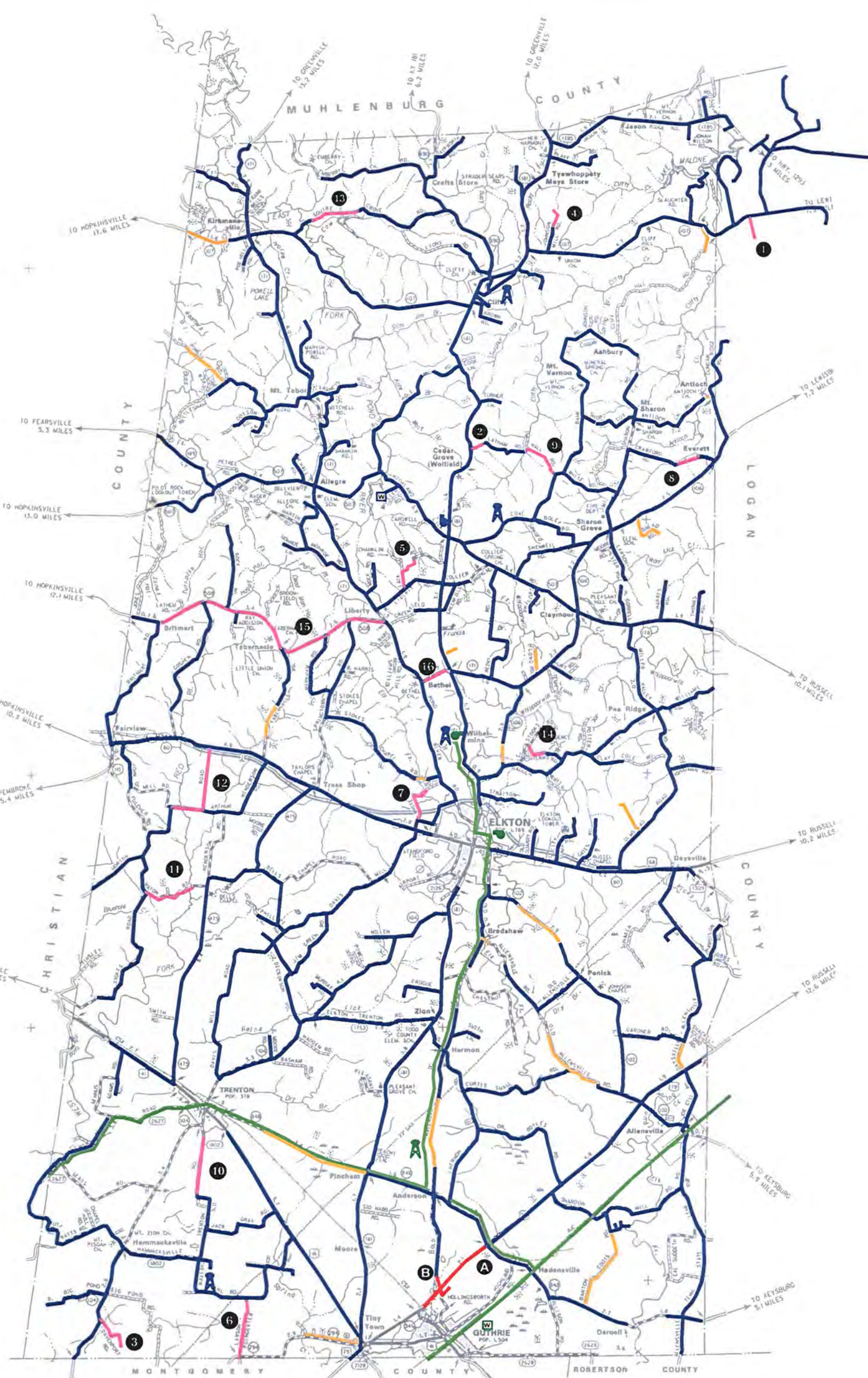
Industrial Customers: Large Meter

First	<u>1,500,000</u>	Gallons @	<u>\$19,500.00</u>	Minimum
All Over	<u>1,500,000</u>	Gallons @	<u>\$ 8.25</u>	per 1,000 Gallons

**7.0 RECOMMENDED SOLUTION**

In order to address the problems and needs of the water system, the Todd County Water District should do the following:

- Construct a 500,000-gallon elevated water storage tank (OF = ~801') in the Guthrie community to serve a significant portion of southern Todd County and the new Novelis industrial site.
- Construct approximately 2 miles of new 12" waterline to connect the new tank with the Logan Todd Regional Water Commission's transmission line at the intersection of US Highway 79 and KY Highway 848.
- Relocate approximately 0.2 miles of 6" waterline to accommodate highway improvements at the intersection of US Highway 79 and Old Railroad Lane.
- Construct a LTRWC metering station/vault with an electronic control valve to control the flow and filling of the proposed Novelis tank.
- Construct approximately 3 miles of new waterline along various roadways to serve a potential of 5 residences and install multiple master meters with SCADA features (Contract 3).
- Continue the application process for \$390,000 in grant and \$3,210,000 in loan from Rural Development.
- Conduct any required archaeological or other environmental investigations to insure the proposed line extensions (Contract 3) are compliant with federally funded project guidelines.
- Initiate discussion among the District's Board of Directors concerning public awareness and implementation of raising water rates to fund the project if grant funds are unavailable.
- Continue pursuing different means of financing through other available agencies and methods.



Background Map: KyDOT Todd County General Highway Map—1998

**LEGEND**

- Existing Water Line—TCWD
- Novelis Project Contract 1 Proposed Waterline Upgrade—TCWD
- Existing Water Line—LTRWC
- KY Hwy 181 Project Contract 2 Waterline Upgrade or Alternate—TCWD
- Novelis Project Contract 3 Proposed Waterline Upgrade or Alternate—TCWD
- Existing Water Storage Tank
- Existing Pump Station
- Existing Pump Station
- Waterline ID

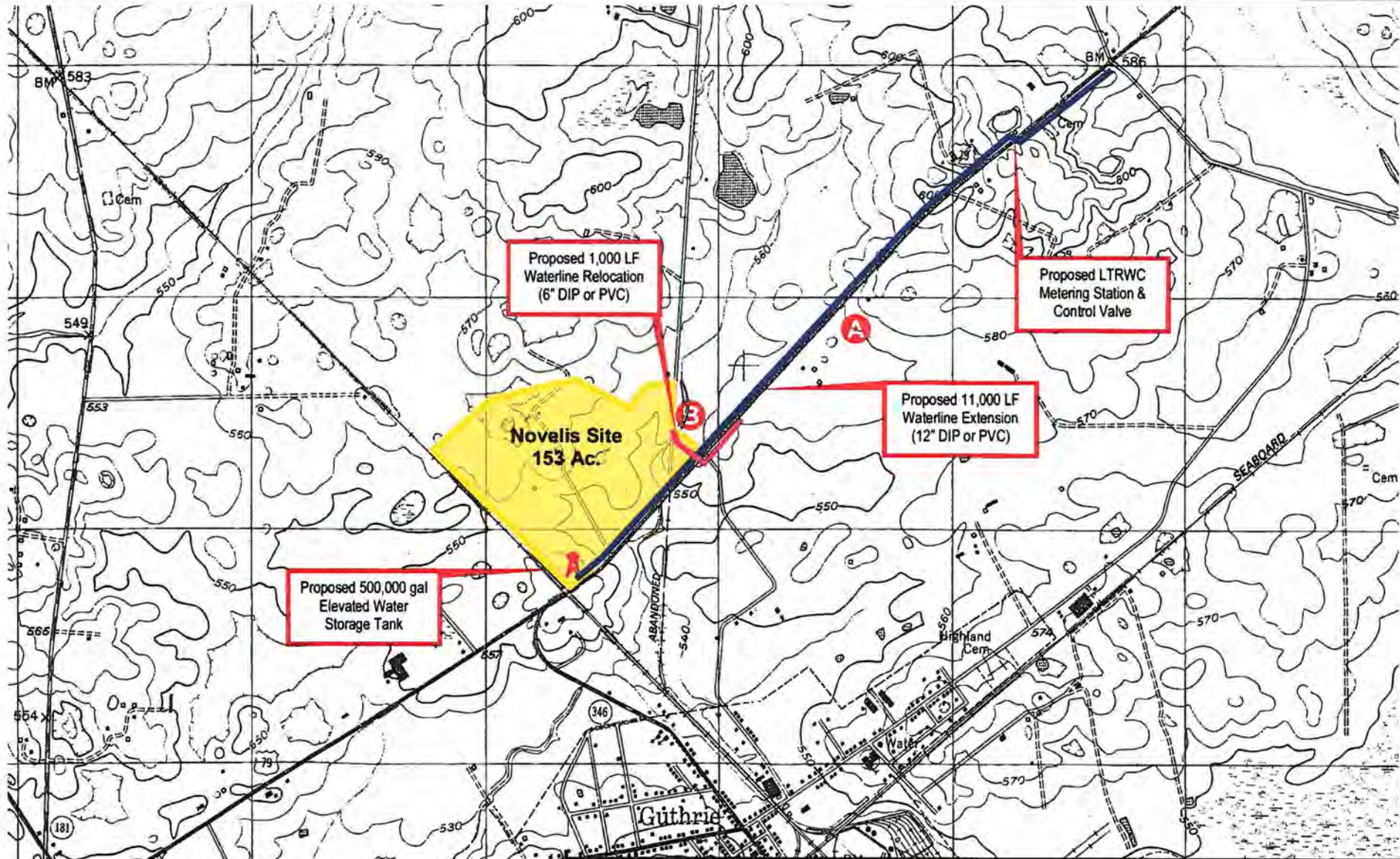


**MCGHEE ENGINEERING, INC.**

Guthrie, Kentucky

Todd County Water District  
**Novelis Water Supply Project**  
**OVERALL PROJECT LAYOUT**

By: Wilcutt	Scale: As Noted	Date: Feb. 2019	Page: E-1
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Proposed 1,000 LF  
Waterline Relocation  
(6" DIP or PVC)

Proposed LTRWC  
Metering Station &  
Control Valve

Proposed 11,000 LF  
Waterline Extension  
(12" DIP or PVC)

Proposed 500,000 gal  
Elevated Water  
Storage Tank

**Novelis Site**  
153 Ac.



**LEGEND**

Water Line Extension ————

Water Line Relocation ————

Water Tank Addition **A**

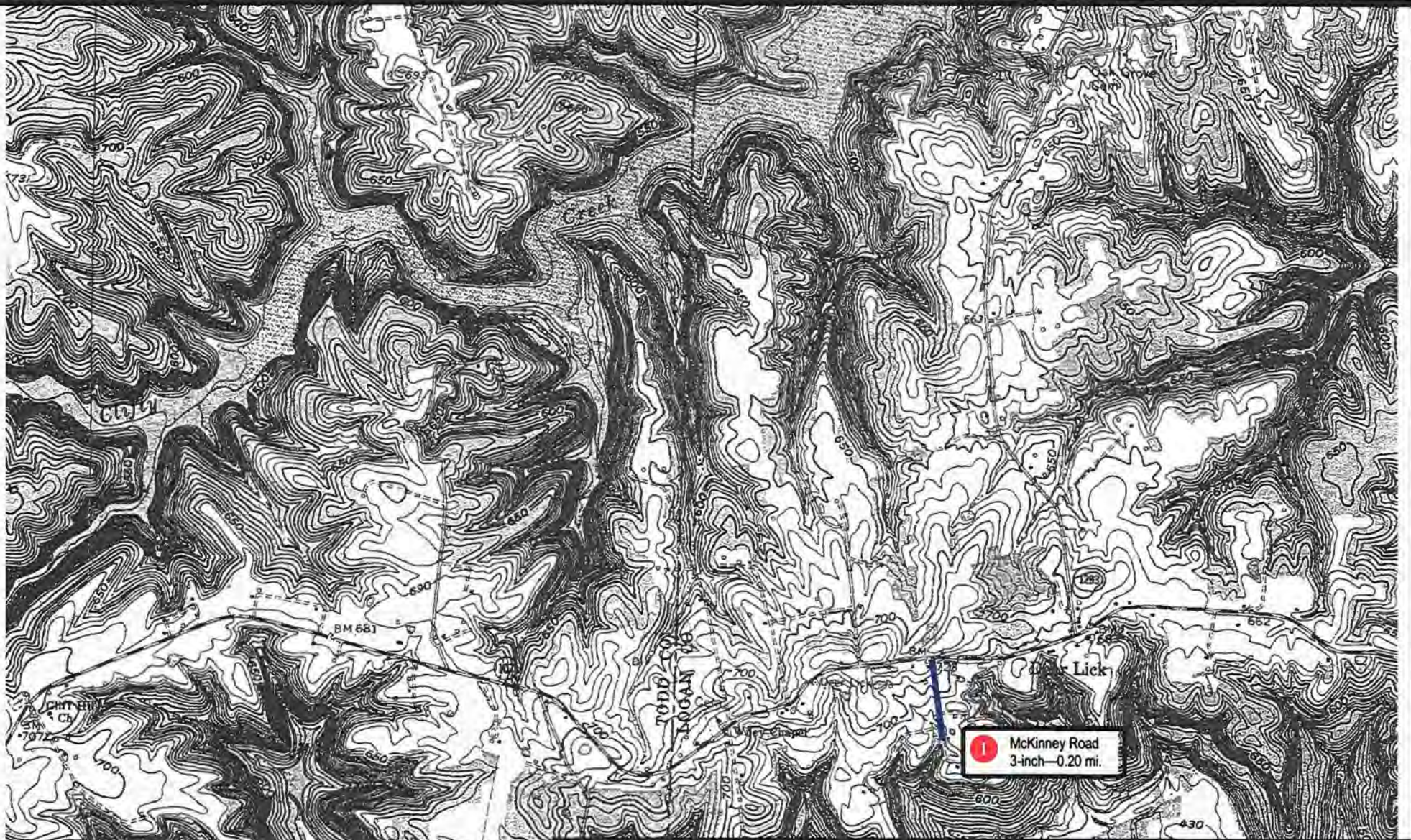
Source: USGS "Guthrie, KY-TN" 7 1/2" Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
PROJECT LAYOUT—Contract 1 & 2**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale 1"=2,000'	Drawn by C. Wilcutt	Date May 2018	Page E-2
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**A** McKinney Road  
3-inch—0.20 mi.



**LEGEND**

- Water Line Extension
- Water Line Relocation
- Water Tank Addition

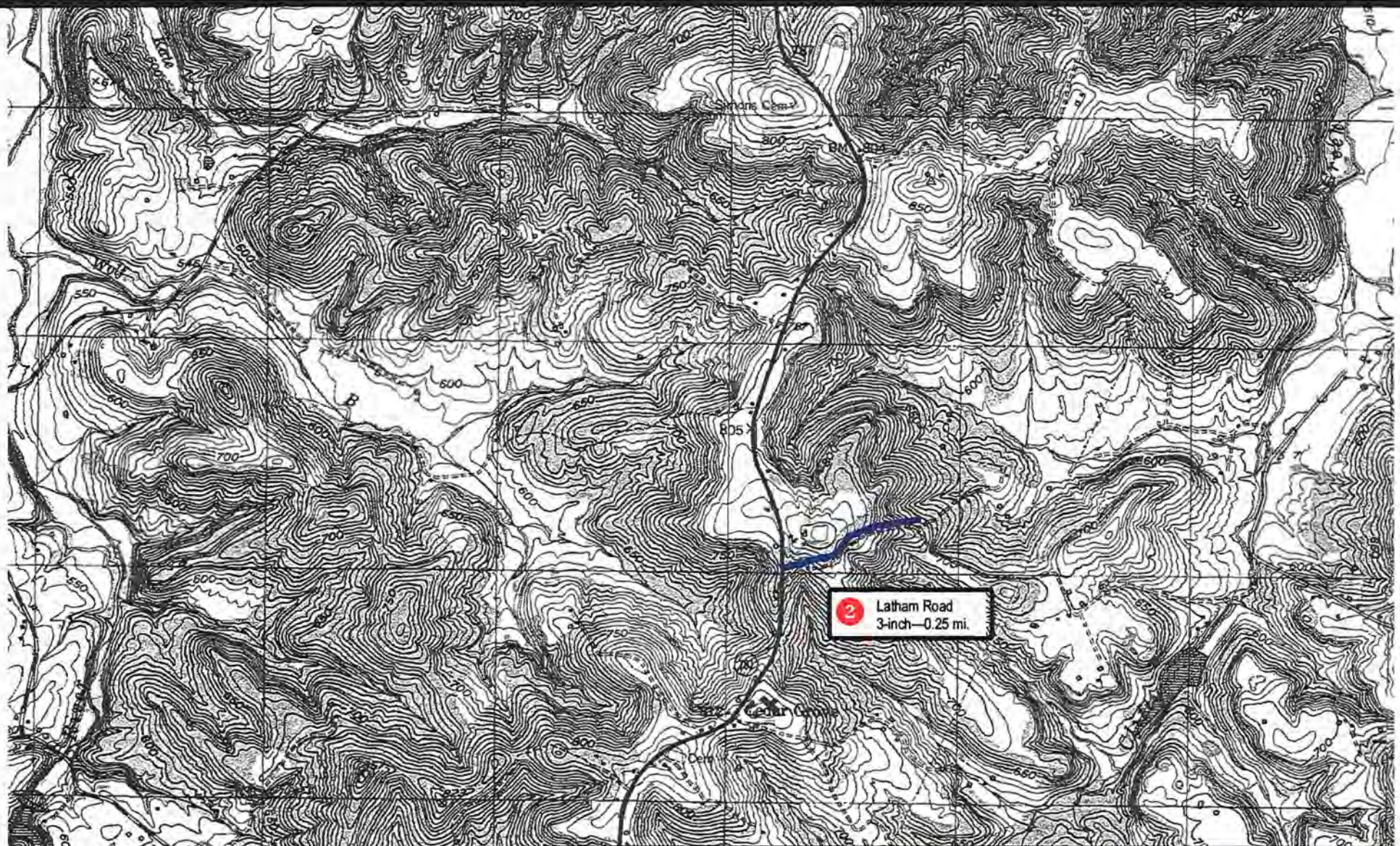
Source: USGS "Rosewood, KY-TN" 7 1/2' Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
McKinney Road—Contract 3**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale 1"=2,000'	Drawn By C. Wilcutt	Date May 2018	Page E-3
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2 Latham Road  
3-inch—0.25 mi.



**LEGEND**

- Water Line Extension
- Water Line Relocation
- Water Tank Addition

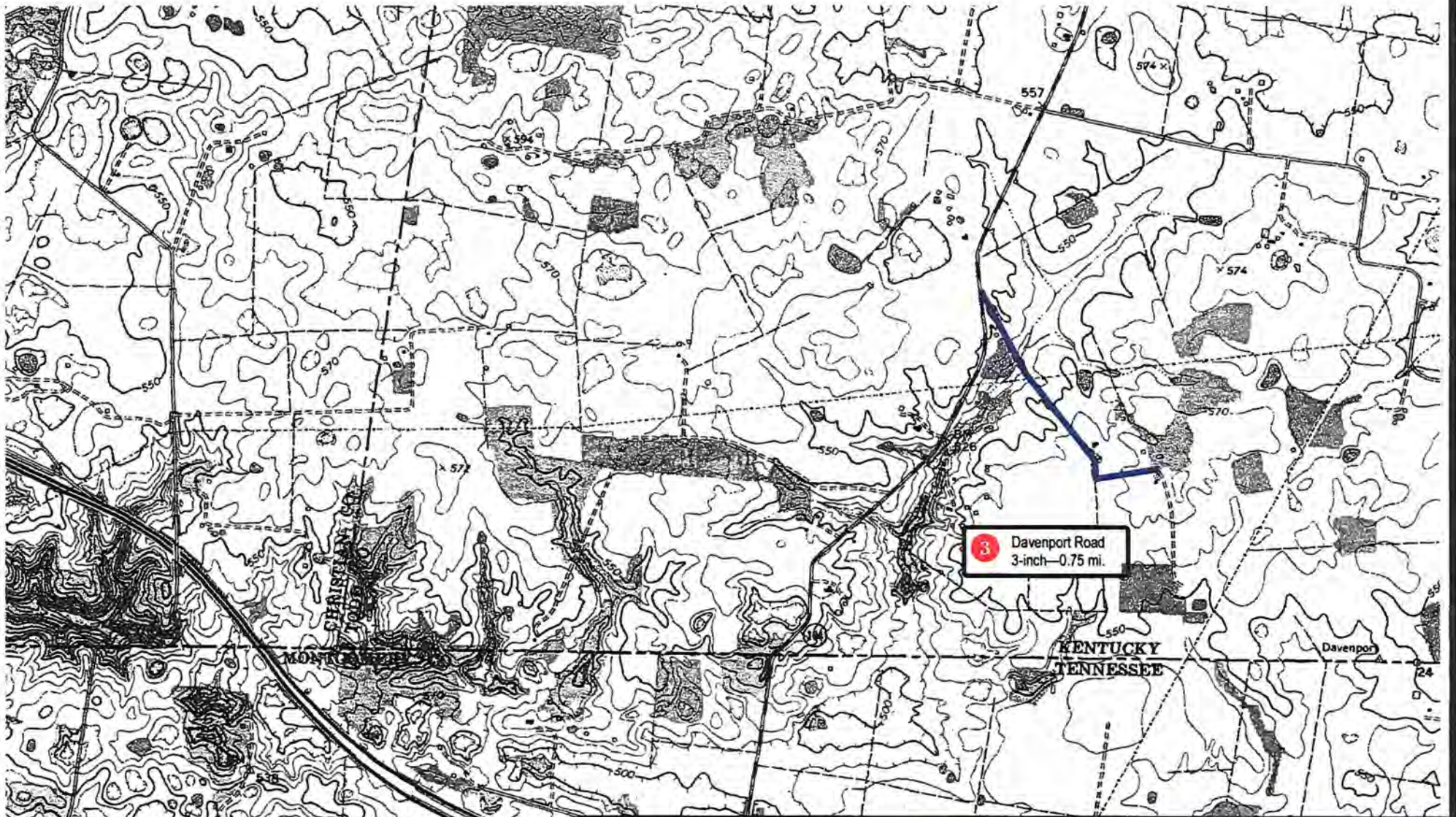
Source: USGS 'Allegh, KY-TN' 7 1/2' Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
Latham Road—Contract 3**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky





**3** Davenport Road  
3-inch—0.75 mi.

KENTUCKY  
TENNESSEE

Davenport



**LEGEND**

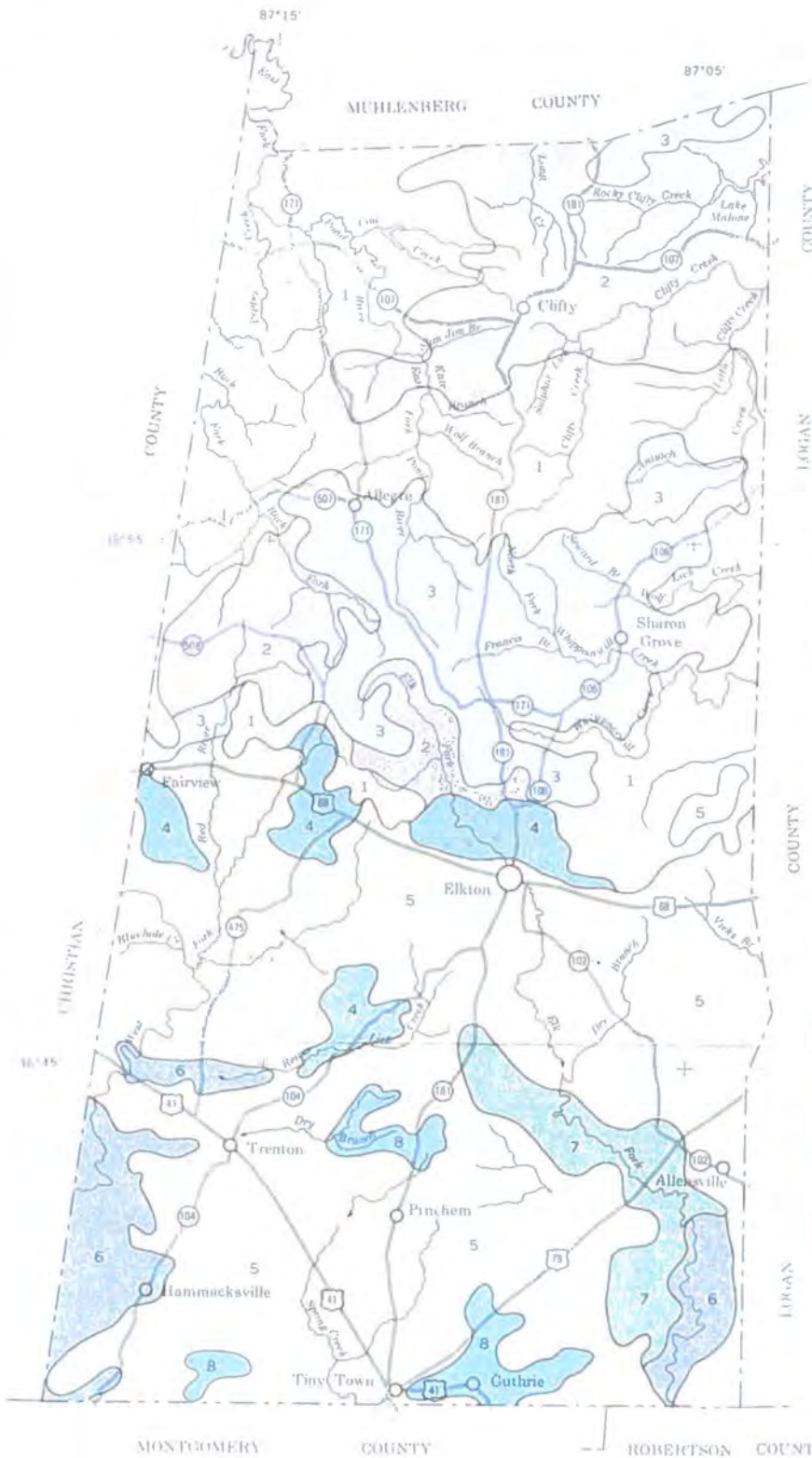
- Water Line Extension
- Water Line Relocation
- Water Tank Addition

Source: USGS "Trenton, KY-TN" 7 1/2" Topographic Quadrangle - 1983

**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
Davenport Road—Contract 3**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky



**LEGEND**

- WELL DRAINED AND MODERATELY WELL DRAINED, VERY STEEP TO NEARLY LEVEL SOILS, UNDERLAIN BY SANDSTONE, SILTSTONE, SHALE OR LIMESTONE
- 1 Caneyville-Fronton-Wellston Well drained, steep to sloping, moderately deep and deep soils that are loamy and have a clayey or loamy subsoil, formed in residuum or in loess and residuum from limestone, sandstone, siltstone, or shale, on side slopes and ridges
  - 2 Fronton-Wellston-Zanesville Well drained and moderately well drained, very steep to gently sloping, deep to shallow soils that are loamy and have a loamy subsoil, formed in loess and residuum or in residuum from sandstone, siltstone, or shale, on ridges and side slopes
  - 3 Sadler-Zanesville Moderately well drained and well drained, nearly level to sloping, deep soils that are loamy and have a loamy subsoil, formed in loess and residuum from sandstone, siltstone, or shale, on ridges
- WELL DRAINED TO POORLY DRAINED, NEARLY LEVEL TO MODERATELY STEEP SOILS, UNDERLAIN BY LIMESTONE
- 4 Fredonia-Pembroke-Caneyville Well drained, gently sloping and sloping, moderately deep and deep soils that are loamy and have a loamy or clayey subsoil, formed in residuum or in loess and residuum from limestone, on broad karst upland plains
  - 5 Pembroke-Nicholson-Crider Well drained and moderately well drained, nearly level to sloping, deep soils that are loamy and have dominantly a loamy subsoil, formed in loess and residuum from limestone, on broad upland plains
  - 6 Hammack-Baxter-Crider Well drained, gently sloping to moderately steep, deep soils that are loamy and have a loamy or clayey subsoil, formed in loess and residuum or in residuum from cherty limestone, on karst upland plains
  - 7 Pembroke-Vertrees Well drained, nearly level to sloping, deep soils that are loamy and have a loamy or clayey subsoil, formed in loess and residuum or in residuum from limestone, on karst upland plains
  - 8 Robertsville-Lawrence Poorly drained and somewhat poorly drained, nearly level, deep soils that are loamy and have a loamy subsoil, formed in alluvium or colluvium, on concave upland basins or stream terraces

COMPILED 1986

Source: US Department of Agriculture, Soil Conservation Service, GENERAL SOIL MAP—Todd County, Kentucky—1986

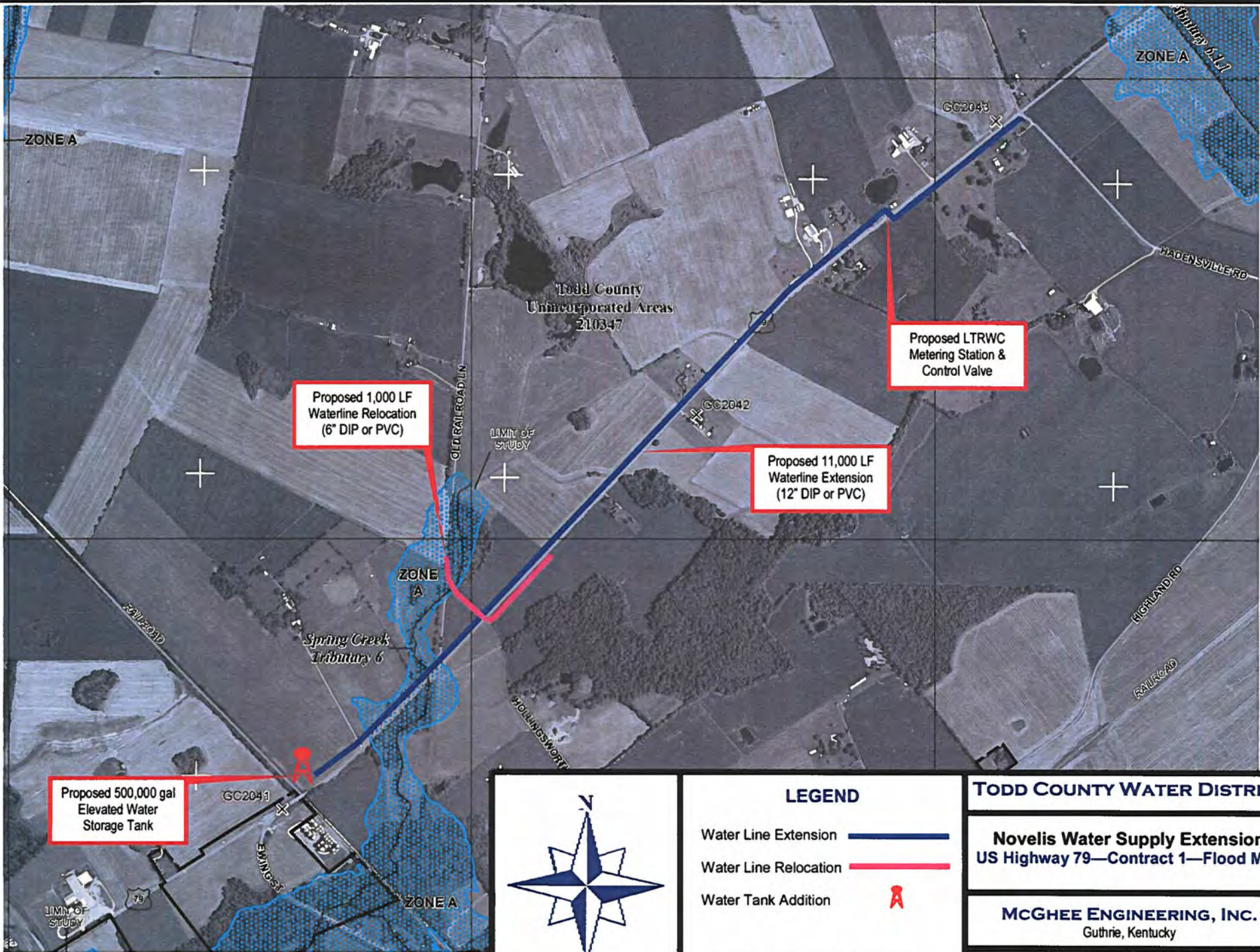


**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
SOIL MAP**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale 1"=4 miles	Drawn By C. Wilcutt	Date May 2018	Page E-6
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**LEGEND**

- Water Line Extension —
- Water Line Relocation —
- Water Tank Addition Ⓜ

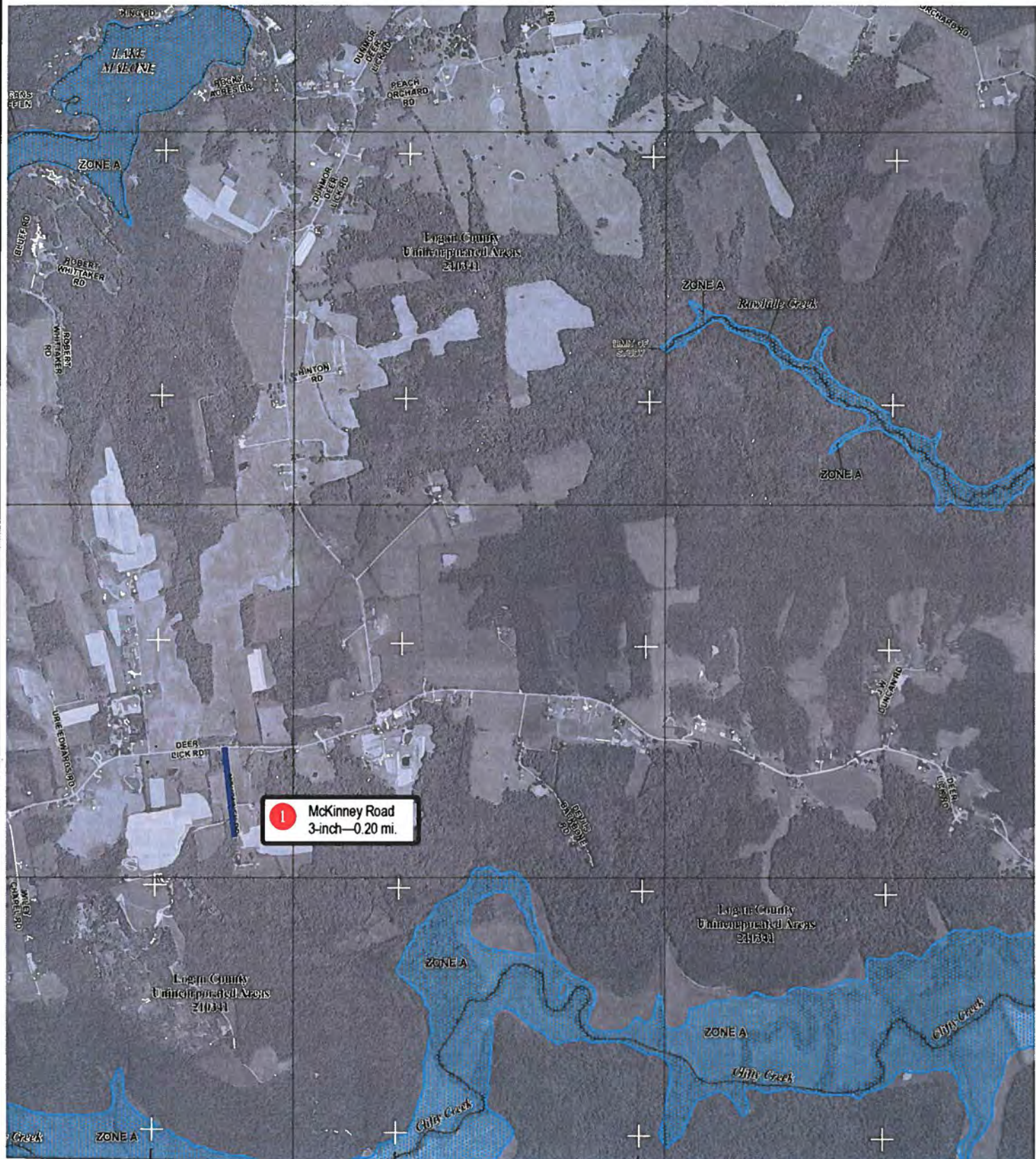
Source: FEMA-Flood Insurance Rate Map #21219C0270C

**TODD COUNTY WATER DISTRICT**

**Novelis Water Supply Extension  
US Highway 79—Contract 1—Flood Map**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	Drawn By	Date	Page
None	C. Wilcutt	May 2018	E-7



**1** McKinney Road  
3-inch—0.20 mi.



**LEGEND**

- Proposed Water Line
- Waterline Priority ID
- Existing Water Tank
- Existing Pump Station

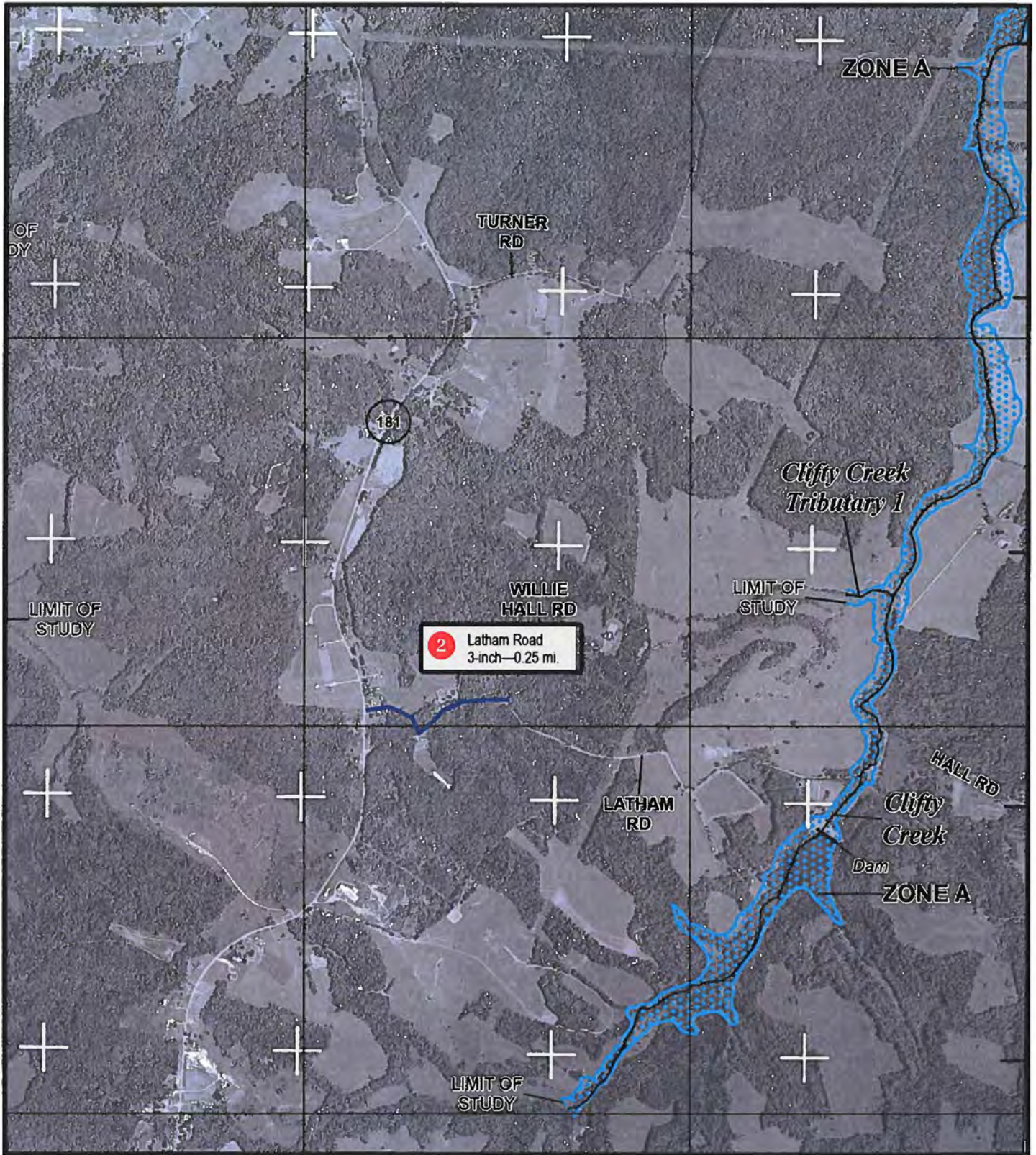
Source: FEMA-Flood Insurance Rate Map #FM2114C0020D  
Logan County-October 2, 2012

**TODD COUNTY WATER DISTRICT**

Novelis Water Supply Extension  
**McKinney Road—Contract 3—Flood Map**

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	None	Drawn By	C. Wilcullt	Date	Feb. 2019	Page	E-8
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**LEGEND**

- Proposed Water Line
- Waterline Priority ID
- Existing Water Tank
- Existing Pump Station

Source: FEMA-Flood Insurance Rate Map #FM21219C0125C  
Todd County-June 1, 2017

**TODD COUNTY WATER DISTRICT**

Novelis Water Supply Extension  
Latham Road—Contract 3—Flood Map

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	None	Drawn By	C. Wilcutt	Date	Feb. 2019	Page	E-9
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**LEGEND**

- Proposed Water Line
- Waterline Priority ID
- Existing Water Tank
- Existing Pump Station

Source: FEMA-Flood Insurance Rate Map #FM21219C0250C  
Todd County-July 22, 2010

**TODD COUNTY WATER DISTRICT**

Novelis Water Supply Extension  
Davenport Rd—Contract 3—Flood Map

**MCGHEE ENGINEERING, INC.**  
Guthrie, Kentucky

Scale	None	Drawn By	C. Wilcuff	Date	Feb. 2019	Page	E-10
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**Appendix A**

*Kentucky State Clearinghouse Comments*



MATTHEW G. BEVIN  
GOVERNOR

DEPARTMENT FOR LOCAL GOVERNMENT  
OFFICE OF THE GOVERNOR

1024 CAPITAL CENTER DRIVE, SUITE 340  
FRANKFORT, KENTUCKY 40601-8204  
PHONE (502) 573-2382 FAX (502) 573-2939  
TOLL FREE (800) 346-5606 TDD-711  
WWW.kydlgweb.ky.gov

SANDRA K. DUNAHOO  
COMMISSIONER

April 12, 2018

Mr. John Haley  
Todd County Water District  
P.O. Box 520  
Elkton, KY 42220

RE: Novelis Water System Extension Project  
WX21219028  
SAI# KY201803160136  
CFDA# 90.201

Dear Mr. Haley:

The Kentucky State e-Clearinghouse is the official designated Single Point of Contact (SPOC) for the Commonwealth pursuant to Presidential Executive Order 12372, and supported by Kentucky Statutes KRS 45.03. The primary function of the SPOC is to streamline the review aforementioned process for the applicant and the funding agency. This process helps in vocalizing the statutory and regulatory requirements. Information in the form of comments, if any, will be attached to this correspondence.

This proposal has been reviewed by the appropriate state agencies in the e-Clearinghouse for conflicts with state or local plans, goals and objectives. After receiving this letter, you should make it available to the funding agency and continue with the funding agencies application process. This e-clearinghouse SPOC letter signifies only that the project has followed the state reviewing requirements, and is neither a commitment of funds from this agency or any other state or federal agency. Please remember if any federal reviews are required the applicant must follow through with those federal agencies.

The results of this review are valid for one year from the date of this letter. If the project is not submitted to the funding agency or not approved within one year after the completion of this review, the applicant can request an extension by email to [Lee.Nalley@ky.gov](mailto:Lee.Nalley@ky.gov). If the project changes in any way after the review, the applicant must reapply through the eclearinghouse for a new review. There are no exceptions.

If you have any questions regarding this letter or the review process please contact the e-Clearinghouse office at 502-573-2382, ext. 274.

Sincerely,

A handwritten signature in black ink that reads "Lee Nalley".

Lee Nalley, SPOC  
Kentucky State Clearinghouse

Attachment



**Department of Housing, Buildings and Construction**

Kevin Carlin

The Department of Housing Buildings and Construction, Division of Building Code Enforcement has no comments concerning the proposed project.

**Division of Enforcement**

Tim Harrod

The Division of Enforcement does not object to the project proposed by the applicant.  
Tim Harrod, Enforcement Specialist Division of Enforcement Timothy.Harrod@ky.gov

**Division of Water**

Andrea Fredenburg

Best management practices should be utilized to reduce runoff from project construction activities into nearby waters.

**Division of Water**

Julia Harrod

A 'stream construction permit application' will need to be submitted to the Division of Water for further review of this project. Water withdrawals are overseen by the by the State of TN. Okay Water Management Planning.

**Division of Water**

Abba Pourghasemi

No objections to the proposed project. Plans and specifications along with hydraulic analysis of the proposed project (including fill/drain cycles of the tank to justify adequate tank turn over) must be submitted to the Division of Water's Water Infrastructure Branch by a registered professional engineer in Kentucky. Must receive a written approval from the Division of Water prior to the beginning of the construction.

**DOW**

Daniel Fraley

No comment

**DOW**

Wei Ji

The proposed work is endorsed by the Groundwater Section of the Watershed Management Branch. However, the proposed work is located in an area with a high potential for karst development where groundwater is susceptible to direct contamination from surface activities. It is our recommendation that proposed work be made aware of the requirements of 401 KAR 5:037 and the need to develop a Groundwater Protection Plan (GPP) for the protection of groundwater resources within that area. Questions should be directed to Wei Ji (502-782-6934) or Section Supervisor David Jackson (502-782-6986).

### **Fish and Wildlife**

Dan Stoelb

To minimize impacts to the aquatic environment the Kentucky Dept. of Fish & Wildlife Resources recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be installed prior to construction and should be inspected and repaired regularly as needed. Please contact Dan Stoelb @ 502-564-7109 ex. 4453 or Daniel.Stoelb@ky.gov if you have further questions or require additional information.

### **Kentucky Transportation Cabinet (D3)**

Deneatra Henderson

The Kentucky Transportation Cabinet, Highway Department, District 3 has no comments concerning the proposed project. No impact to KYTC right-of-way

### **KIA**

Jocelyn Gross

This project was reviewed in the WRIS Portal by KIA staff.

### **KY Department for Environmental Protection**

Ronald Price

This review is based upon the information that was provided by the applicant through the Clearinghouse for this project. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments.

The proposed project is subject to Division of Water (DOW) jurisdiction because the following are or appear to be involved: water lines and appurtenances and water storage tank construction. Prior approval must be obtained from the DOW before construction can begin. The applicant must cite the State Application Identifier (SAI #KY201803160136) when submitting plans and specifications.

This project is consistent with the Todd County Water Management Plan. It is approved for water management planning. It is approved for water withdrawal by the Water Quantity Management Section of DOW. From the application data, DOW ascertains that the proposed project is located in a floodplain area; therefore, a floodplain construction permit is required for this project. Julia Harrod, Watershed Management Branch, (502) 782-6967, Julia.Harrod@ky.gov.

Project calls for the installation of a new 500,000 elevated water storage tank, supervisory control and data acquisition (SCADA) controls and approximately 2 miles of 12-inch ductile iron pipe (DIP) water main, all to serve the proposed location of the Novelis Aluminum facility, one mile north of Guthrie along US Highway 79. The facility is expected to employ nearly 125 employees. The proposed water project is expected to cost \$3,047,000.

There are no objections to the proposed project. Plans and specifications along with hydraulic analysis of the proposed project (including fill/drain cycles of the tank to justify adequate tank turn over) must be submitted to the DOW's Water Infrastructure Branch by a registered professional engineer in Kentucky. The applicant must

receive a written approval from the DOW prior to the beginning of the construction. Abbas Pourghasemi, Water Infrastructure Branch, (502) 782-7041, Abbas.Pourghasemi@ky.gov

During the last sanitary survey (2016) there were no deficiencies and the system was found to have technical, financial, and managerial capacity. Todd County purchases from Logan-Todd Regional Water Commission and has no purchase limit. Currently Logan-Todd Regional Water Commission is operating at 48.4% of its rated Gallon Per Day production capacity. There do not appear to be any capacity related issues. Jason Lambert, Water Infrastructure Branch, (502) 782-7001, Jason.Lambert2@ky.gov.

Best management practices should be utilized to reduce runoff from project construction activities into nearby waters. Andrea Fredenburg, Water Quality Branch, (502) 782-6950, Andrea.Fredenburg@ky.gov.

No comment. Daniel Fraley, Compliance and Technical Assistance Branch, (606) 783-8655, Daniel.Fraley@ky.gov.

The Division of Enforcement does not object to the project proposed by the applicant. Tim Harrod, Division of Enforcement, (502) 782-6858, Timothy.Harrod@ky.gov.

The proposed work is endorsed by the Groundwater Section of the Watershed Management Branch. However, the proposed work is located in an area with a high potential for karst development where groundwater is susceptible to direct contamination from surface activities. It is our recommendation that proposed work be made aware of the requirements of 401 KAR 5:037 and the need to develop a Groundwater Protection Plan (GPP) for the protection of groundwater resources within that area. Wei Ji, Watershed Management Branch, (502) 782-6934, Wei.Ji@ky.gov.

If the construction area disturbed is equal to or greater than 1 acre, the applicant will need to apply for a Kentucky Pollutant Discharge Elimination System (KPDES) storm water discharge permit.

Utility line projects that cross a stream will require a Section 404 permit from the US Army Corps of Engineers and a 401 Water Quality Certification from DOW.

The Kentucky Division of Water supports the goals of EPA's Sustainable Infrastructure Initiative. This Initiative seeks to promote sustainable practices that will help to reduce the potential gap between funding needs and spending at the local and national level. The Sustainable Infrastructure Initiative will guide our efforts in changing how Kentucky views, values, manages, and invests in its water infrastructure. This website, [www.epa.gov/waterinfrastructure/](http://www.epa.gov/waterinfrastructure/), contains information that will help you ensure your facility and operations are consistent with and can benefit from the aims of the Sustainable Infrastructure Initiative.

### **KY Heritage Council**

Yvonne Sherrick

To receive a review from the KY Heritage Council/State Historical Preservation Office (SHPO) you must follow the instructions located on their website at <http://www.heritage.ky.gov/siteprotect/>. There you will find the required documents for the Section 106 Review and Compliance for 36 CFR Part 800. This Section 106 submission process to SHPO will assist applicants and agencies in providing the appropriate level of information to receive comments from SHPO. If you have any questions please contact Yvonne Sherrick, Administrative Specialist III, (502) 564-7005, Ext. 113, yvonne.sherrick@ky.gov.

Please note: If your project is funded through Transportation Alternative (TAP), Transportation Enhancements (TE), Congestion, Mitigation, Air Quality (CMAQ), or Safe Routes to School (SRTS) you will need to send this information to Michael Jones, Historic Preservation Program Administrator with the Kentucky Transportation Cabinet via email MichaelR.Jones2@ky.gov or hard copy to Michael Jones, Office of Local Programs, KY Transportation Cabinet, 200 Mero Street Frankfort, KY 40622. Do not send materials directly to SHPO if your project involves funding from these four sources as it will cause delays in the review process. Michael Jones will consult directly with the SHPO on projects with these funding sources to complete the Section 106 review.

**Pennyrile ADD**  
Melody Goodwin

Kyle Cunningham - Endorse with Comments Endorsed. Amy Frogue - Endorse with Comments No comment

**Water**  
Jason Lambert

During the last sanitary survey (2016) there were no deficiencies and the system was found to have technical, financial, and managerial capacity. Todd Co. purchases from Logan-Todd Regional Water Commission and has no purchase limit. Currently Logan-Todd R.W.C. is operating at 48.4% of its rated GPD production capacity. There do not appear to be any capacity related issues.  
Endorse

**Appendix B**

*Incentive Letter from Todd County Water District to Novelis Industries*

January 22, 2018

Lucas Witt  
Kentucky Cabinet for Economic Development  
300 West Broadway  
Frankfort, Kentucky 40601

RE: Project Cardinal/Novelis  
Potable Water Service

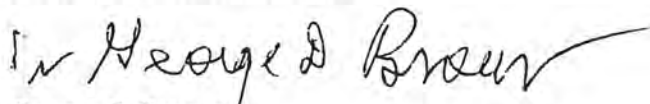
Dear Mr. Witt:

The Todd County Water District hereby offers to extend a 12-inch potable water service line from the Todd County Water District System to the Project Cardinal/Novelis site, and to construct a 500,000 gallon elevated water storage tank on or adjacent to the site. These improvements will be paid for by the Todd County Water District and will be in place and ready for service no later than May 15, 2019. The proposed water line and tank will have sufficient capacity to supply the projected initial demand of 50,000 gallons per day (GPD), up to the ultimate projected 1,000,000 GPD project demand.

Novelis will be required to pay monthly usage charges for all water used. Rates charged for water service will be based on the cost of providing such service and will not be higher than those charged to other like customers of the system.

This offer is contingent on the usage projections being accurate, and the project generating at least 100 permanent, full-time jobs at the site within 3 years of the date of this letter.

Sincerely,  
**Todd County Water District**

  
Dr. George D. Brown  
Chairman

**Appendix C**

*Correspondence from Todd Gertz, Director of Engineering, regarding Water Demands*

## Mike McGhee

---

**From:** Mike McGhee <mike.mcghee@mcgheeengineering.com>  
**Sent:** Thursday, May 17, 2018 11:28 AM  
**To:** 'Todd Gertz'  
**Cc:** 'Jerry McManus'; 'Nicholas Thomas'; 'Bradford Bailey'; 'Gregory Oram'; John Haley; Benn Andrew Stahl  
**Subject:** RE: Novelis Water Consumption and Sewer Discharge Information

Todd:

Based on our phone conversation, I understand these demands to be based on a new process that you may or may not employ at the Guthrie facility, and that the decision to employ this process will not be made for approximately six months. If this new process is not used, the water and sewer demands would be approximately half of these numbers.

We will proceed with our design of the water and sewer extensions to the site anticipating the higher demands. However, for revenue projections that the utilities will make in support of financing of the utility extensions, we will use the lower numbers.

I just heard back from my geotechnical engineer and he would like to be on site on Tuesday or Wednesday of next week. Let me know if we can get him access to the tank site on those days.

Thanks.

Michael W. McGhee, PE  
MCGHEE ENGINEERING, INC.  
(270) 426-9142 (Office - Direct)  
(270) 873-0499 (Cell)  
mike.mcghee@mcgheeengineering.com

**From:** Todd Gertz [mailto:Todd.Gertz@novelis.adityabirla.com]  
**Sent:** Wednesday, May 16, 2018 12:31 PM  
**To:** Mike McGhee (mike.mcghee@mcgheeengineering.com) <mike.mcghee@mcgheeengineering.com>  
**Cc:** Jerry McManus <Jerry.McManus@novelis.adityabirla.com>; Nicholas Thomas <nicholas.thomas@novelis.adityabirla.com>; Bradford Bailey <Bradford.Bailey@novelis.adityabirla.com>; Gregory Oram <gregory.oram@novelis.adityabirla.com>  
**Subject:** Novelis Water Consumption and Sewer Discharge Information

Mike,

As a follow-up to our discussion from earlier today, please see the following information regarding our city water consumption and sewer discharge flow rates:

1. **Water Consumption:**
  - a. Peak – 225,000 gallons per day
  - b. Average – 50-60% of the peak or 112,500 – 135,000 gallons per day
2. **Sewer discharge flow rates:**
  - a. Peak – 180,000 gallons per day
  - b. Average – 50-60% of the peak or 90,000 – 108,000 gallons per day
3. **Evaporation** – In our process, we have approximately a 20% evaporation loss. Thus, the lower sewer discharge rates versus our water consumption rates.



In late July or early August we will provide you with a characterization of our effluent going to the sewer discharge for your review. Would you provide us with your waste water discharge limits, such that we ensure we are design to any limits we may have imposed on us.

We hope this clarifies the water consumption and sewer discharge flow rates. Should you have any additional questions, please let us know.

Thanks,

**Todd A. Gertz**

Director of Engineering, Novelis North America

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Novelis Corporation  
3560 Lenox Road, Suite 2000  
Atlanta, GA 30326

Office Atlanta: 1 770-688-1981  
Office Oswego: 1 315-349-0356  
Mobile: 1 812-249-8992  
[todd.gertz@novelis.com](mailto:todd.gertz@novelis.com)  
[www.novelis.com](http://www.novelis.com)

Not just aluminum, Novelis Aluminum.™

**Specifications and Contract Documents**  
**Novelis Water Supply Project**  
**Contract No. 1 – Waterline Extensions**

*prepared for the*

**Todd  
County  
Water  
District**



**Dr. George Brown**  
*Chairman*

**Billy Lear**  
*Board Member*

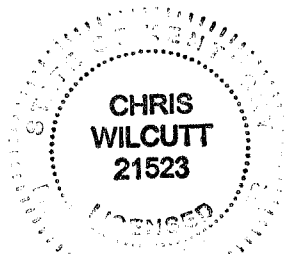
**Ed Slack**  
*Board Member*

**Tony Adler**  
*Board Member*

**Lois Brown**  
*Board Member*

*prepared by*

**McGhee Engineering, Inc.**  
202 Ewing Street, P. O. Box 267  
Guthrie, Kentucky 42234  
(270) 483-9985



*Chris Wilcutt*  
10/16/18

**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT: CONTRACT 1 – LINE EXTENSIONS**

**CONTRACT DOCUMENTS**

**Table of Contents**

<b><u>Bidding Documents</u></b>	<b><u>Pages</u></b>
Advertisement for Bids	1
Instructions to Bidders	12
Bid Bond (EJCDC C-430)	2
Bid Form (EJCDC C-410)	9
Statement of Experience	1
Certification for Contracts, Grants and Loans (RD 1940-Q)	1
Certification Regarding Debarment, etc (AD 1048)	2
Compliance Statement (RD 400-6)	2
<b><u>Agreement Section</u></b>	
Notice of Award	1
Agreement (EJCDC C-520)	6
Performance Bond (EJCDC C-610)	3
Payment Bond (EJCDC C-615)	3
Power of Attorney (Provided by Contractor)	-
Notice to Proceed	1
Certificate of Insurance (Provided by Contractor)	-
<b><u>Conditions Section</u></b>	
General Conditions (EJCDC C-700)	66
Certificate of Owner's Attorney & Funding Agency Concurrence	1
Supplementary Conditions	25
Contract Change Order Form (RD 1924-7)	1
Project Sign Detail	1
Project Special Conditions	3
<b><u>Technical Specifications</u></b>	
01-100 Summary of Work	4
01-200 Submittals	2
01-210 Materials Purchased Directly By Owner	2
01-900 Construction Layout & Record Drawings	2
02-100 Water Main General Requirements	5
02-200 Water Main Materials	6
02-300 Water Main Construction	11
02-400 Water Main Testing and Acceptance	2
02-500 Water Main Measurement and Payment	8
03-100 Concrete Formwork	4
03-150 Joints in Cast-in-Place Concrete	2
03-210 Concrete Reinforcement	2
03-310 Cast-in-Place Concrete	12
15-200 Metering Station Installation (Existing or New)	5
15-201 Metering Station Equipment (New Installations Only)	20

**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT: CONTRACT 1 – LINE EXTENSIONS**

**CONTRACT DOCUMENTS**

**Table of Contents (cont-)**

**Appendix**

- Appendix 1 - KPDES Form NOI-SW (Notice of Intent for Storm Water Discharges)
- Appendix 2 – USDA Kentucky Bulletin info regarding American Iron & Steel (AIS Requirement)
- Appendix 3 – Miscellaneous Project Permits (Army Corp, KDOW, KYTC, County, USF&W, etc)

**Contract Drawings**

Contract Drawings consist of 12 sheets bound separately from this document.  
See the index on the cover sheet of the Contract Drawings.

## ADVERTISEMENT FOR BIDS

Todd County Water District  
P.O. Box 520  
2201 New Highway 68 West  
Elkton, KY 42220

**RE:     Novelis Water Supply Project: Contract No. 1 – Waterline Extensions**

The **Todd County Water District** will receive separate, sealed Bids for their **Novelis Water Supply Project: Contract No. 1 – Waterline Extensions** until **3:00 p.m., Friday, February 1, 2019** at the office of Todd County Water District, 2201 New Highway 68 West, P.O. Box 520, Elkton, Kentucky 42220, at which time they will be publicly opened and read aloud.

The work to be performed involves the installation of nearly 12,000 LF of 12-inch waterline extension plus other appurtenances generally along US Highway 79 in Todd County (KY). Bids will be received for a single prime Contract. Bids shall be on a unit price basis, with separate PVC and ductile iron material options, and additive alternate bid items 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. Prospective 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](http://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](http://www.mcgheeengineering.com).

"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 listed 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."

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

Published by the authority of the     Todd County Water District  
   John Haley, Manager

Dated: January 3, 2019

## **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

Article 15 – Submittal of Bid

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, including but not limited to American Iron and Steel requirements as mandated and subsequent statutes mandating domestic preference which apply to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have

been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

## ARTICLE 6 – PRE-BID CONFERENCE

6.01 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.
- C. In deciding to award a construction contract, the Owner will consider a life-cycle cost analysis performed by the Engineer evaluating the bid prices for the two bidding options, and the total

estimated operational, maintenance and replacement costs over the anticipated service life of the materials.

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.

#### 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 less the value of materials purchased directly by OWNER/COMMISSION.

#### 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 Delta Regional Authority and the United States Department of Agriculture, Rural Utilities Service (RUS). RUS requirements will apply to the Project.**

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

## 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 Pursuant to 2017 Kentucky House Bill 3, State prevailing wages do not apply to this Contract.

24.03 Federal Davis Bacon wage rates do not apply to this Contract.

## ARTICLE 25 – OTHER BID REQUIREMENTS

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

- Statement of Experience
- Certification Regarding Debarment, etc.
- Compliance Statement
- Certification for Contract Grants and Loans

## 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 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. "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 deminimis and minor components waiver apply to this contract.

#### 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 FORM

Project Identification: Todd County Water District's  
Novelis Water Supply Project: Contract No. 1 – Waterlines

Contract Identification: Contract No. 1 – Waterline Extensions

### ARTICLE 1 – BID RECIPIENT

1.01 This Bid is Submitted to: Todd County Water District  
2201 New Highway 68 West; PO Box 520  
Elkton, Kentucky 42220

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 and including all American Iron and Steel requirements.

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

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

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

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

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

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of 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 may bid either of the base bid options, or both. See Instructions to Bidders Article 19 for information on evaluation of bids and award of contract.

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

Base Bid: Ductile Iron Pipe Option					
Item No.	Item	Quantity	Units	Unit Price	Total Price
A001	12-inch Class 350 DIP water line, in place and ready for use, including testing and clean up. <i>{Note pay limits per Spec 02-500, Section 2.0}</i>	11,555	LF	\$ _____	\$ _____
A002	12-inch Restraining Gaskets for Class 350 Ductile Iron Pipe, installed in designated areas, in place, complete and ready for use.	45	EA	\$ _____	\$ _____
A003	6-inch Class 200 PVC water line, in place and ready for use, including testing and clean up. <i>{Note pay limits per Spec 02-500, Section 2.0}</i>	650	LF	\$ _____	\$ _____
A004	6-inch Class 200 PVC Yelomine Certa-Lok waterline, ready to use, including testing & clean up. <i>{Note pay limits per Spec 02-500, 2.0}</i>	100	LF	\$ _____	\$ _____
A005	Final Cleanup of affected line route ( <u>Exclude Bores &amp; paved areas</u> ) in accordance with Spec 02-500, Sect. 3.0 <i>{Note minimum unit price stipulation.}</i>	11,871	LF	\$ _____ <i>{ \$2.00 Minimum }</i>	\$ _____
A006	Uncased driveway bore, all line sizes, in place, complete and ready for use.	39	LF	\$ _____	\$ _____
A007	Steel cased Highway bore, 20" casing (excluding 12" carrier) in place, complete & ready for use.	260	LF	\$ _____	\$ _____
A008	Steel cased Highway bore, 10" casing (excluding 6" carrier) in place, complete & ready for use.	135	LF	\$ _____	\$ _____
A009	Wetland Crossing & Restoration of affected uncased pipeline route in accordance with KDOV/ACOE permit and Detail 5, Sheet D-2.	1,225	LF	\$ _____	\$ _____
A010	Wide Stream Crossing with 20" Steel Casing, (12" carrier), in place complete & ready for use.	100	LF	\$ _____	\$ _____
A011	Shallow Ditch/Creek Crossing, all line sizes, in place, complete and ready for use.	55	LF	\$ _____	\$ _____
A012	20"x12" tapping sleeve, valve and box, in place, complete and ready for use.	1	EA	\$ _____	\$ _____
A013	12" gate valve and box, including applicable fittings, in place, complete and ready for use	7	EA	\$ _____	\$ _____
A014	8" gate valve and box, including applicable fittings, in place, complete and ready for use	2	EA	\$ _____	\$ _____

A015	6" gate valve and box, including applicable fittings, in place, complete and ready for use	3	EA	\$ _____	\$ _____
A016	Large Flush Hydrant, including 6" gate valve, in place, complete and ready for use.	5	EA	\$ _____	\$ _____
A017	Air Release Valve & Box, including applicable fittings, in place, complete and ready for use.	1	EA	\$ _____	\$ _____
A018	Isolated EZ Valve Insertion on Existing 6" waterline including surface restoration in place, complete & ready for use.	1	EA	\$ _____	\$ _____
A019	Remove appurtenance &/or connect to exist. 6-inch line/valve with applicable piping and fittings, in place, complete and ready for use	3	EA	\$ _____	\$ _____
A020	Plug & Cap existing 6" waterline, upon project completion, including thrust block, in place, complete and ready for use	2	EA	\$ _____	\$ _____
A021	Plug & Cap (temporary) 12" waterline, upon project completion, including thrust block, in place, complete and ready for use	1	EA	\$ _____	\$ _____
A022	Relocate & Install Existing Factory built, above ground meter station, including fittings, piping, site work, power connections & appurtenances	1	LS	\$ _____	\$ _____
A023	Construction Staking, Layout, and Record Survey & Drawings <i>(in accordance with Spec 01-900)</i>	1	LS	\$ _____	\$ _____

**TOTAL AMOUNT OF BASE BID – Ductile Iron Pipe Option**

\$ _____
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Base Bid Method: PVC Pipe Option					
Item No.	Item	Quantity	Units	Unit Price	Total Price
B001	12-inch Class 200 PVC water line, in place and ready for use, including testing and clean up. <i>{Note pay limits per Spec 02-500, Section 2.0}</i>	11,175	LF	\$ _____	\$ _____
B002	12-inch Class 200 PVC Yelomine Certa-Lok waterline, ready to use, including testing & clean up. <i>{Note pay limits per Spec 02-500, 2.0}</i>	380	LF	\$ _____	\$ _____
B003	6-inch Class 200 PVC water line, in place and ready for use, including testing and clean up. <i>{Note pay limits per Spec 02-500, Section 2.0}</i>	650	LF	\$ _____	\$ _____
B004	6-inch Class 200 PVC Yelomine Certa-Lok waterline, ready to use, including testing & clean up. <i>{Note pay limits per Spec 02-500, 2.0}</i>	100	LF	\$ _____	\$ _____

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

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B005	Final Cleanup of affected line route (Exclude Bores & paved areas) in accordance with Spec 02-500, Sect. 3.0 <i>{Note minimum unit price stipulation.}</i>	11,871	LF	\$ _____ <i>{\$2.00 Minimum}</i>	\$ _____
B006	Uncased driveway bore, all line sizes, in place, complete and ready for use.	39	LF	\$ _____	\$ _____
B007	Steel cased Highway bore, 20" casing (excluding 12" carrier) in place, complete & ready for use.	260	LF	\$ _____	\$ _____
B008	Steel cased Highway bore, 10" casing (excluding 6" carrier) in place, complete & ready for use.	135	LF	\$ _____	\$ _____
B009	Wetland Crossing & Restoration of affected uncased pipeline route in accordance with KDOW/ACOE permit and Detail 5, Sheet D-2.	1,225	LF	\$ _____	\$ _____
B010	Wide Stream Crossing with 20" Steel Casing, (12" carrier), in place complete & ready for use	100	LF	\$ _____	\$ _____
B011	Shallow Ditch/Creek Crossing, all line sizes, in place, complete and ready for use.	55	LF	\$ _____	\$ _____
B012	20"x12" tapping sleeve, valve and box, in place, complete and ready for use.	1	EA	\$ _____	\$ _____
B013	12" gate valve and box, including applicable fittings, in place, complete and ready for use	7	EA	\$ _____	\$ _____
B014	8" gate valve and box, including applicable fittings, in place, complete and ready for use	2	EA	\$ _____	\$ _____
B015	6" gate valve and box, including applicable fittings, in place, complete and ready for use	3	EA	\$ _____	\$ _____
B016	Large Flush Hydrant, including 6" gate valve, in place, complete and ready for use.	5	EA	\$ _____	\$ _____
B017	Air Release Valve & Box, including applicable fittings, in place, complete and ready for use.	1	EA	\$ _____	\$ _____
B018	Isolated EZ Valve Insertion on Existing 6" waterline including surface restoration in place, complete & ready for use.	1	EA	\$ _____	\$ _____
B019	Remove appurtenance &/or connect to exist. 6-inch line/valve with applicable piping and fittings, in place, complete and ready for use	3	EA	\$ _____	\$ _____
B020	Plug & Cap existing 6" waterline, upon project completion, including thrust block, in place, complete and ready for use	2	EA	\$ _____	\$ _____

B021	Plug & Cap (temporary) 12" waterline, upon project completion, including thrust block, in place, complete and ready for use	1	EA	\$ _____	\$ _____
B022	Relocate & Install Existing Factory built, above ground meter station, including fittings, piping, site work, power connections & appurtenances	1	LS	\$ _____	\$ _____
B023	Construction Staking, Layout, and Record Survey & Drawings ( <i>in accordance with Spec 01-900</i> )	1	LS	\$ _____	\$ _____

**TOTAL AMOUNT OF BASE BID – PVC Pipe Option**

\$ \_\_\_\_\_

- 5.03 Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) 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.
- 5.04 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.
- 5.04 ADDITIVE ALTERNATE WORK ITEMS: The following Additive Alternatives are listed as an enhanced option to Bid Item 19. 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. A single price shall be bid for each item.

Additive Alternate Bid Items: Meter Station Equipment & Installation					
Item #	Item	Quantity	Units	Unit Price	Total Price
C001	Equipment Only: <b>New</b> Factory built, above-ground, walk-in meter station, delivered, complete & ready for installation.	1	LS	\$ _____	\$ _____
C002	Installation Only: <b>New</b> Factory built, above-ground, meter station, including fittings, piping, site work, power connections & appurtenances	1	LS	\$ _____	\$ _____

- 5.05 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 #	Item Description	Units	Unit Bid Price
S1	Unclassified undercut, where ordered by the Engineer.	CY	\$ _____
S2	No. 57 aggregate refill, where ordered by the Engineer.	Ton	\$ _____

S3	Class "B" concrete refill, where ordered by the Engineer. the Engineer	CY	\$ _____.
S4	Polyethylene Wrap of Ductile Iron Pipe, excluding pipe, where ordered by Engineer.	LF	\$ _____.
S5	Miscellaneous Waterline Marker installed, where ordered by Engineer	EA	\$ _____.
S6	Reconnect existing near side meter with new ¾" service line; in place, complete and ready for use	EA	\$ _____.
S7	Reconnect existing far side meter with new ¾" service line from main to meter, encased under road; in place, complete & ready for use	EA	\$ _____.
S8	Relocate & Reconnect Near Side Water Meter to new main & existing customer-side service line with new tubing, new meter box, new setter & fittings; in place & ready for use.	EA	\$ _____.

5.04 MATERIALS PURCHASED DIRECTLY BY OWNER: Provide bid pricing for materials to be purchased directly by the Owner (reference Specification Section 01-210). Contractor has included in the unit bid prices for the work under part 5.02, the following material costs.

Bid Item #	Material Item	Vendor	Units	Unit Price
A001	12-inch Class 350 Ductile Iron Pipe		LF	\$ _____
A002	24-inch Class 350 Restraining Gaskets for Ductile Iron Pipe		EA	\$ _____
A003/ B003	6-inch Class 200 PVC Pipe		LF	\$ _____
A004/ B004	6-inch Class 200 PVC Yelomine Certa-Lok Pipe		LF	\$ _____
B001	12-inch Class 200 PVC Pipe		LF	\$ _____
B002	12-inch Class 200 PVC Yelomine Certa-Lok Pipe		LF	\$ _____
A005/7 B005/7	20-inch Steel Casing Pipe		LF	\$ _____
A008/ B008	10-inch Steel Casing Pipe		LF	\$ _____



C001	New Factory built, above-ground, meter station (if applicable)		LS	\$ _____
------	--	--	----	----------

**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. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplemental General Conditions;
  - C. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
  - D. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans;
  - E. Manufacturers' Certification letter (See Appendix) on any approved "or equal" or substitute request to ensure compliance with AIS requirements and any subsequent statues mandating domestic preference.
  - F. Statement of Experience

**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 \_\_\_\_\_, 2019.

Seal below (if required)

## BID BOND

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

**Todd County Water District**  
**PO Box 520**  
**Elkton, KY 42220**

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum

\$

(Words)

(Figures)

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

**BIDDER**

**SURETY**

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

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

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

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

## STATEMENT 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.

<b>No.</b>	<b>Contact Person, Company &amp; Phone No.</b>	<b>Project Description, Date &amp; Approximate Value of Work</b>
1.	_____ _____ _____	_____ _____ _____
2.	_____ _____ _____	_____ _____ _____
3.	_____ _____ _____	_____ _____ _____
4.	_____ _____ _____	_____ _____ _____
5.	_____ _____ _____	_____ _____ _____
6.	_____ _____ _____	_____ _____ _____

\_\_\_\_\_  
Bidder

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

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

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

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

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

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

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

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

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

oOo

**U.S. DEPARTMENT OF AGRICULTURE**

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

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This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

**(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)**

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

---

Organization Name

PR/Award Number or Project Name

---

Name(s) and Title(s) of Authorized Representative(s)

---

Signature(s)

Date

## Instructions for Certification

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



## COMPLIANCE STATEMENT

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

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

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

1. I  have,  have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I  have,  have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

If the proposed contract is for \$50,000 or more and I have 50 or more employees, I also represent that:

3. I  have,  have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, I  have,  have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

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

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

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

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

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

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

DATE \_\_\_\_\_

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

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

**NOTICE OF AWARD**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT Description: **Todd County Water District  
Novelis Water Supply Project  
Contract No. 1 – Waterline Extensions**

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated \_\_\_\_\_ and Instructions to Bidders.

You are hereby notified that your BID has been accepted for DIP 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 \_\_\_\_\_.

**TODD COUNTY WATER DISTRICT**

\_\_\_\_\_  
John Haley, System Manager

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE OF AWARD is hereby acknowledged and dated this \_\_\_\_ day of \_\_\_\_\_ 2018.

**(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 Todd County Water District (“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 installation of nearly 12,000 LF of 12-inch waterline extensions plus other appurtenances along US Highway 79 in Todd County (KY).**

**ARTICLE 2 – THE PROJECT**

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

**Novelis Water Supply Project: Contract No. 1 – Waterline 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 **90** 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 **90** 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

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**EJCDC® C-520 (Rev. 1), Agreement Between Owner and Contractor for Construction Contract (Stipulated Price).**

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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 (*Ductile Iron Option*) 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 consisting of 10 sheets with each sheet bearing the following general title: Novelis Water Supply Project: Contract No. 1 – Waterline Extensions
  9. Addenda (numbers \* to \*, inclusive).
  10. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages 1 to 8 inclusive).
    - b. Documents submitted by Contractor prior to Notice of Award – List of Subcontractors.
    - c. Documents submitted by Contractor prior to Notice of Award – Statement of Experience.
  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

**Todd County Water District** \_\_\_\_\_

\_\_\_\_\_

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

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

Title: **Dr. George Brown, Chairman** \_\_\_\_\_

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

[CORPORATE SEAL]

[CORPORATE SEAL]

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

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

Title: **John Haley, System Manager** \_\_\_\_\_

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

Address for giving notices:

Address for giving notices:

PO Box 520 \_\_\_\_\_

\_\_\_\_\_

Elkton, KY 42220 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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**

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

**Todd County Water District  
 PO Box 520  
 Elkton, KY 42220**

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

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

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

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

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

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

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

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Title

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

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

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Title

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### 14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including

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

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

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

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

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

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

16. Modifications to this Bond are as follows:

**PAYMENT BOND**

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

**Todd County Water District  
 PO Box 520  
 Elkton, KY 42220**

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

**BOND**

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

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

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

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

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

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

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

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Title

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

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

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Title

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

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

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
  - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
    1. The name of the Claimant;
    2. The name of the person for whom the labor was done, or materials or equipment furnished;
    3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    4. A brief description of the labor, materials, or equipment furnished;
    5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
  - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
  - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
  - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

**NOTICE TO PROCEED**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

PROJECT: **Todd County Water District  
Novelis Water Supply Project  
Contract No. 1 – Waterline Extensions**

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_ on or before \_\_\_\_\_. In accordance with the Agreement, the date of substantial completion is \_\_\_\_\_, and the number of days needed to achieve readiness for final payment is **90**.

Before starting work at the site, Contractor must comply with the following:  
Not applicable.

**TODD COUNTY WATER DISTRICT**

\_\_\_\_\_  
John Haley, Manager

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED is hereby acknowledged and dated this \_\_\_\_ day of \_\_\_\_\_ 2018.

**(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.

Certificate of Owner's Attorney & Agency Concurrence

**CERTIFICATE OF OWNER'S ATTORNEY**

PROJECT NAME: Novelis Water Supply Project: Contract No. 1 – Waterline Extensions

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

I, the undersigned, Harold Mac Johns, the duly authorized and acting legal representative of Todd County Water District, do hereby certify as follows:

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

\_\_\_\_\_  
Name

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

**AGENCY CONCURRENCE:**

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

Agency: \_\_\_\_\_

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

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

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

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 \$ 5,000,000

Products - Completed Operations Aggregate	\$ <u>5,000,000</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. Manufacturer's 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.

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)

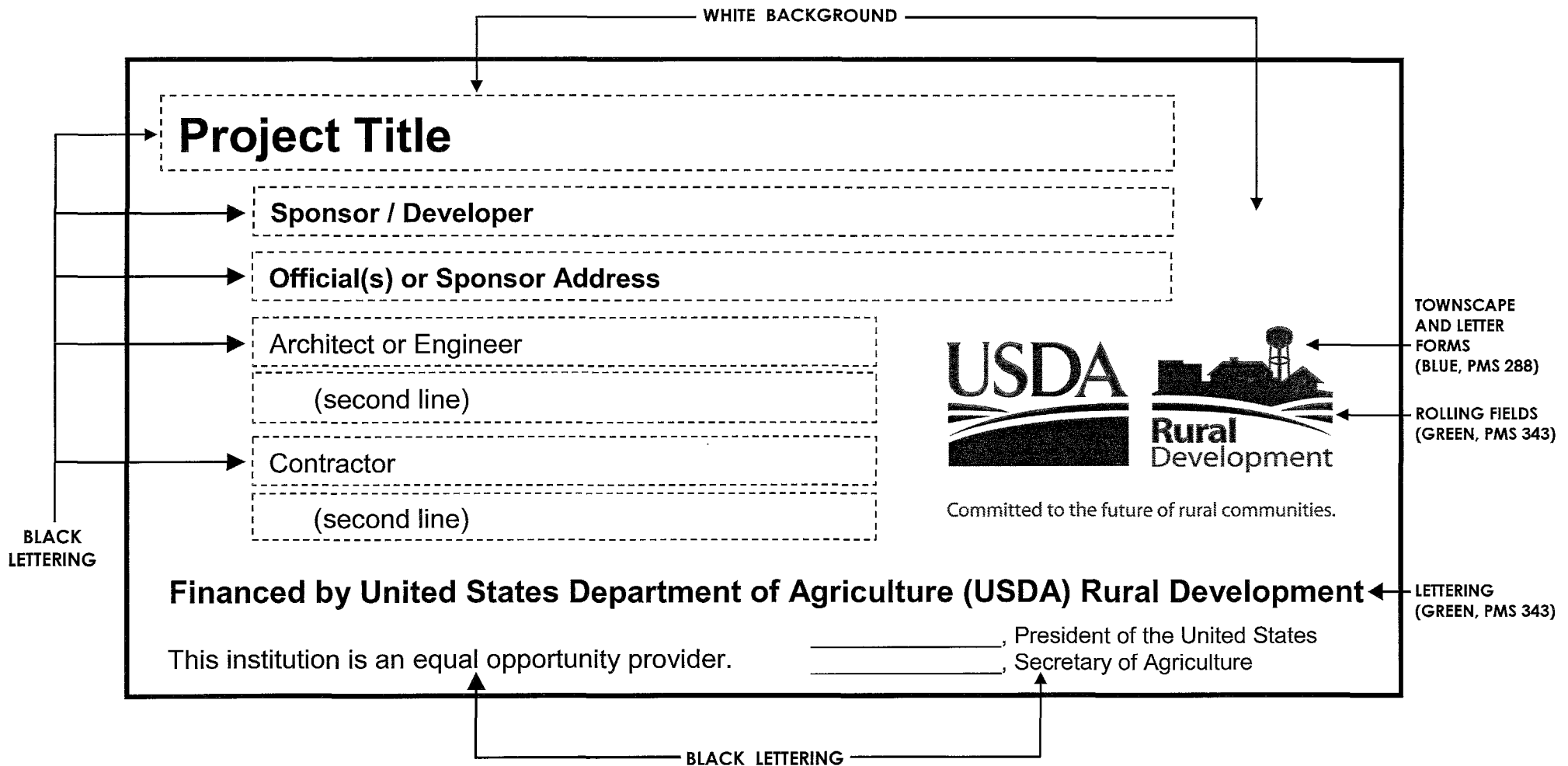
Recommended \_\_\_\_\_ (Owner's Architect/Engineer) \_\_\_\_\_ (Date)

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 CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS



**SIGN DIMENSIONS:** 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")  
 PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)

## 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.
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.

END OF SECTION

## SUMMARY OF WORK

### 1.0 GENERAL

#### 1.1 Work Included

The work to be performed involves the installation of nearly 11,000 LF of new treated water pipelines and appurtenances along US Highway 79 near Guthrie in the Todd County Water District service area all within Todd County, Kentucky, 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.

**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 listed 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.**

The Bidder/Contractor shall submit Manufacturers' Certification letter of compliance with 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 for all equals or substitutes approved by Addenda for American Iron and Steel products as provided in these Contract Documents.

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 comply with all stream and road crossing permits, which if applicable are attached within the Appendix.

## 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.

## 2.9 Project Sign

The Contractor shall prepare and install one project sign as shown herein, shall maintain the sign in good repair for the duration of the project, and shall remove and dispose of the sign upon completion of the work.

## 3.0 CONTRACTOR'S USE OF PREMISES

Todd 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

Typically, 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 PROGRESS MEETINGS**

The Contractor shall provide a representative to attend regular monthly progress meetings, and if requested also attend regular monthly Board meetings to report on project progress and to respond to questions from the Board of Directors and the public. Monthly board meetings are conducted on the last Monday evening of each month at the District's office, and monthly progress meetings will also be conducted the same day at a time to be determined. The Contractor shall attend other project related meetings from time to time as designated by the Engineer.

### **2.0 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

#### **2.1 General**

Submit six copies of all required shop drawings to the 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 Engineer's review.

#### **2.2 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.

#### **2.3 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 and fittings.
- b. Pipe Certifications and Test Results.
- c. All valves (gate, air release, etc.)
- d. All hydrants.
- e. Aggregates used as bedding or backfill (source and gradation).
- f. Concrete mix designs.
- g. Reinforcing steel details and placement.
- h. Precast concrete items.
- i. Access hatch and covers.
- j. Tracer wire.
- k. Tracer wire splice kit material.
- l. Pipeline markers.
- m. Casing Pipe, Casing End Seals & Spacers
- n. Polywrap for DIP
- o. Mechanical Joint Restraints
- p. Factory-built, Above-ground Meter Station (if applicable)

### 3.0 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. Meter Station & appurtenances

Manuals shall include, as applicable, a parts list, exploded or sectional views, recommended maintenance program, internal piping and wiring details, operating procedures, complete description of the item including manufacturer (including address and telephone number), model number, style, options, etc., and name, address and telephone number of a local supplier or parts distributor.

### 4.0 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. Disinfection testing results as outlined in Section 02-400.
4. **As-built drawings. (Marked-up set of construction drawings showing actual line location and any deviations from the plans. These drawings will be separate from those notes and measurements made by the resident inspector.)**

END OF SECTION 01-200

## MATERIALS PURCHASED DIRECTLY BY OWNER

### 1.0 GENERAL

The OWNER will purchase certain materials directly from the Vendor in order to take advantage of sales tax savings. For those materials, the Contractor will be responsible for negotiating on behalf of the Owner the purchase price, delivery arrangements, payment terms and all other details of the transaction with a materials vendor of his choosing, as long as the materials purchased comply fully with the Specifications, and the terms do not conflict with the requirements set forth herein.

### 2.0 PRODUCTS

The Owner shall purchase directly waterline pipe (DIP or PVC), casing pipe and/or factory built meter station (if selected). The Bidder's unit price for installation of such pipeline, casing pipe, and/or structure shall include all costs of materials necessary for a complete installation, but it shall EXCLUDE sales tax for the materials specified as follows:

- a. Ductile iron pipe.
- b. Ductile iron pipe restraining gaskets.
- c. PVC pipe
- d. Steel casing pipe.
- e. Factory built, above-ground meter station

All other materials required for the Project are to be purchased and supplied by the Contractor, and will be subject to applicable taxes.

### 3.0 PROCEDURE

The following procedure shall be used for materials purchased directly by the Owner.

#### 3.1 Negotiations with Vendors

The Contractor shall negotiate on the behalf of the Owner the purchase price, delivery arrangements, payment terms and other details of the purchase transaction with a vendor of his choosing, provided the materials fully comply with the Specifications, and the payment terms do not conflict with the requirements set forth in this Specification, and all such negotiated terms meet with the approval of the Owner.

#### 3.2 Bidding

The Contractor shall include the name of the vendor(s) and separate materials pricing for those items to be purchased directly on the place designated on the Bid Form. All bonds shall be for the total amount of the bid price including the cost of those materials to be purchased directly by the Owner.

#### 3.3 Request for Purchase Order

Once the purchase transaction is arranged, the Contractor shall complete an Authorization for Purchase Order form (supplied by Owner) and submit it to the Owner. The Request for Purchase Order shall set forth the quantities of materials to be purchased, the purchase price, and all other terms of the proposed purchase agreement. By submitting the Request for Purchase Order, the Contractor represents that the materials will fully comply with the Specifications, and are acceptable to him for use in the Project. The Owner's Engineer will review the Request for Purchase Order and, if acceptable, arrange the issuance of a Purchase Order directly from the Owner to the Vendor with the purchase terms negotiated by the Contractor. Allow 30 days for the issuance of the Purchase Order after the Owner's receipt of an acceptable Request for Purchase Order.



### 3.4 Review of Submittals

The requirements for review and approval of shop drawings, materials specifications and other submittals set forth in Section 01-200 remain in full effect for items purchased directly by the Owner.

### 3.5 Delivery of Materials

All arrangements for delivery of materials purchased directly by the Owner shall be made and coordinated by the Contractor. The Contractor shall provide all services pertaining to expediting of orders, receipt, unloading and storage of materials, transport of materials to their point of use in the Project, and protection of the materials during storage. The Contractor shall provide insurance coverage for the materials commencing at the time of their delivery by the Vendor.

The Contractor shall keep a written record of the quantities and timing of delivery of all materials. The Contractor shall inspect the materials promptly upon delivery and provide the Engineer and Construction Supervisor with copies of his delivery reports on a timely basis.

### 3.6 Payment

After materials are delivered in satisfactory condition, the Vendor may present an invoice for the materials in accordance with the terms set forth in the Purchase Order. Vendor should allow 30 days for payment after acceptance and approval of the invoice. A copy of the invoice will be transmitted to the Contractor for his review and approval. Payment will not be made to the Vendor without written approval of the invoice by the Contractor.

### 3.7 Adjustment of the Contractor's Payment

The Contractor's respective unit price bid items are to include the cost of materials, excluding sales tax, purchased directly by the Owner in the same manner as if the Contractor were purchasing the items himself. As the materials are incorporated in the work, the cost of those materials used will be deducted from the payment due the Contractor. At completion of the work, the Owner may elect to retain all, part, or none of any materials purchased directly by the Owner. The cost of any materials not retained by the Owner will be deducted from the final payment due the Contractor, and those materials shall become the property of the Contractor.

3.7 The Contractor retains full responsibility for performance of the materials and of the completed pipeline system, and for the required warranty of the work.

END OF SECTION 01-210

## CONSTRUCTION LAYOUT AND RECORD DRAWINGS

### 1.0 WORK COVERED BY CONTRACT DOCUMENTS

The work to be performed involves all survey, calculations and measurement work for providing layout and staking of the construction work to be performed, and as-built survey and documentation of the finished work.

### 2.0 QUALIFICATIONS OF THE SURVEYOR

2.1 All work performed under this section shall be performed by or under the supervision of a Land Surveyor actively licensed to practice in the state in which the work is to be performed.

2.2 The Land Surveyor shall maintain the following insurance coverages for the duration of the work.

<u>Coverage</u>	<u>Minimum Coverage Limit</u>
General Liability	\$1,000,000
Professional Liability	\$1,000,000
Commercial Auto	\$1,000,000
Workers Compensation	Statutory Limit

2.3 Contractor shall submit for approval the name of the surveyor, evidence of professional licensure, a summary of the surveyor's professional experience relevant to the Project, and evidence of the required insurance in accordance with Section 01-300 prior to the performance of any work under this section.

### 3.0 PRIMARY PROJECT CONTROL

2.1 The Engineer has established primary project control points for use in design of the Work. These control points are noted on the Drawings. No additional control points will be set by the Engineer.

2.2 The Contractor's surveyor shall locate all primary control points and perform such measurements as may be required to confirm that no primary control point has been disturbed. In the event that any primary control point is missing, destroyed, or suspected of being disturbed, the Engineer shall be promptly notified.

### 3.0 LOCATION ACCURACY

3.1 The pipeline shall be installed at the horizontal location shown on the project plans, and at a depth as indicated on the plans. The horizontal centerline location of the installed pipeline shall not vary more than +/- 2 feet from the required location. The vertical location of the installed pipeline shall not vary more than +6 inches/-1 foot, provided that the depth of cover of the installed pipeline may not be less than 42 inches in any case.

3.2 Deviations outside of the required location accuracy shall be approved in advance by the Engineer.

3.3 Unapproved deviations from the required location accuracy shall be corrected at the Contractor's expense.

### 4.0 CONSTRUCTION STAKING

4.1 All project control in excess of the primary project control initially established by the Engineer shall be provided by the Contractor's surveyor.

4.2 All layout and staking required for construction of the Work shall be provided by the Contractor's surveyor.

4.3 Staking and layout work shall be performed by competent and experienced personnel using equipment as required to achieve accurate results. Precision of the survey work shall be consistent with industry standards for similar work.

4.4 After verification of the integrity of the primary project control, the Contractor will be responsible for replacing

any control points or staking lost as a result of construction operations, vandalism, tampering, or other occurrences.

4.5 The Contractor's surveyor shall be responsible for establishing lines and grades to assure that the work is constructed according to the project plans, and to locate property boundary lines, easements, etc. as required to assure that the work is constructed within or upon the appropriate property or easements.

4.6 The Engineer will provide project drawings and right-of-way drawings in AutoCAD format for the construction surveyor's use.

#### 5.0 RECORD DRAWINGS

5.1 The Contractor's surveyor shall prepare an as-built survey of the completed work. The survey shall locate project features (e.g. valves, fittings, meters, structures, casings, etc.) in three dimensions relative to the primary project control. Buried pipelines shall be located in three dimensions at each change of direction, at an interval not exceeding 300 feet along straight runs, and at an interval such that the actual location of the pipeline shall not vary by more than 1 foot at any point along the chord resulting from a straight line connecting two location points.

5.2 An overlay record drawing shall be produced in AutoCAD format showing the as-built locations surveyed. An electronic file and one paper copy of the record drawing survey shall be submitted to the Engineer.

END OF SECTION 01 900

## 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 six 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 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.

### 2.0 CONCRETE

- 2.1 Cement- Cement shall be Portland cement of a brand approved by the 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 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 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 BLUE in color**, and it shall be Class 200 or Class 250 polyvinyl chloride plastic (PVC 1120) SDR-21 or SDR-17, respectively. 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>
17	250	800
21	200	630

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 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.

Restrained joint PVC pipe shall meet all other requirements for PVC pipe set forth above, plus having a positive means of restraining the pipeline joint against separation due to internal pressure. The joint restraint system shall be equal to CertainTeed Certa-Lok Yelomine pipe systems.

#### 4.2 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 a maximum internal working pressure equal to 350 psi. 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, US Pipe MJ Field Lok restrained joint gaskets, or an equivalent 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. All components shall be manufactured in the United States of America.

#### 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 US Pipe Metroseal 250 or Mueller A-2360. All components shall be manufactured in the United States of America.

#### 7.0 TAPPING SLEEVES AND VALVES

Tapping sleeves shall consist of a mechanical joint tapping sleeve equal to Mueller H-615 (for non-PVC tapped pipe) or Ford FAST-xxx-x-MJ Style (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.

#### 8.0 AIR RELEASE VALVE

Automatic air release valves shall be designed to allow a quantity of air to escape out of the orifice when air accumulates at high points in the water line. The air release valve shall be equipped with a vent line to atmosphere as shown in the Standard Details. Valves shall be tested for service to pressures of 300 psi and shall be made of cast iron housings. Valves shall be equal to APCO 200 A. 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. Contract 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 equal to Russco B-129. The Cover shall be marked "Water". All components shall be manufactured in the United States of America.

#### 10.0 SERVICE CLAMPS AND CORPORATION STOPS

Service clamps shall be used for all taps made to the water line. Service clamps shall be all brass construction with neoprene gasket, equal to Ford S70. Corporation stops shall include a quick nut assembly, the corporation stop shall be Ford F1000-X-G-NL or approved equal. All components shall be manufactured in the United States of America.

#### 11.0 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 coated with a quick drying asphalt gilsonite paint. Pipe shall be welded according to AWWA Standard C206-91 unless otherwise specified. All components shall be manufactured in the United States of America.

#### 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 periodically shall be 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.

Where tracer wire is installed for far-side water service tubing and connected to the pipeline tracer wire at the corporation stop, the pipeline tracer wire SHALL NOT be cut. The contractor shall strip back the pipeline tracer wire's insulation cover and connect the branching wire utilizing a waterproof splice kit equal to King Innovation's Dryconn Series (Model #90220). All components shall be manufactured in the United States of America.

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. All components shall be manufactured in the United States of America.

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 FLUSHING HYDRANT

For 4-inch and larger waterlines, Flushing hydrants shall be 6" nominal diameter with 5 1/4" NST outlet equal to Mueller Centurion A-423. All components shall be manufactured in the United States of America.

#### 15.0 WATER METERS AND SETTERS

Water meters (5/8" x 3/4") for residential applications shall be radio-read capable equal to I-Pearl Radio Read Meter by Sensus with I-Tron Connection & I-Tron Radio, and each meter shall be equal to the existing applications used by the Water District. The meter setter shall include a dual check valve, ball valve, and grip nut. The single setters shall be Ford VBHH-72-7W-41-33-G-NL or equal. In cases where a tandem setter is required the setter shall be Ford TVBHH-72-7W-41-33-G-NL or equal. All meter setters shall be "copper tube size". The ball valve shall be Ford VBHH-72 or equal. The Water Meter shall include a 12-inch nipple attached to the setter, which extends outside the meter box.

Individual pressure reducing valves shall be supplied for any NEW water meter, and it shall be brass body, direct operating valves 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, and shall be equal to Watts 3/4 N-250.

#### 16.0 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.

#### 17.0 VALVE MARKERS

Plastic blue valve markers shall be TriView marker as manufactured by Rhino with owner's name and phone number imprinted on the marker. The 54 inch TriView markers shall be anchored by a 6 foot, 1.2 lb (2" dia. max.) steel U-channel. The U-channel shall be driven into the ground 2 feet with 48 inches left above ground to allow for the TriView marker to be installed over the top and fastened at the base.

#### 18.0 METER BOXES

Meter boxes with lids shall be rectangular in shape and 24" in depth equal to the most current applications used by the Todd County Water District. Meter boxes shall be manufactured by Carson Industries LLC, model #BC-1015-24. The flush cover lids shall be solid ductile iron material with no reader. 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. All components shall be manufactured in the United States of America.

#### 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. Valve Insertions shall be equal to Advanced Valve Technologies EZ Valve II Insertion. All components shall be manufactured in the United States of America.

END OF SECTION 02-200

## WATER MAIN CONSTRUCTION

### 1.0 PRELIMINARY WORK

#### 1.1 Location of Lines

The roads along which lines are to be laid, and the general location of the proposed lines is indicated on the plans. The Contractor shall install the proposed lines and appurtenances in the locations indicated on the plans, except where field conditions are encountered which warrant relocation. Any field relocation of the pipelines and 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.

#### 1.2 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.

#### 1.3 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.

#### 1.4 Clearing and Grubbing

The contractor shall be responsible for cutting and removal of any trees, brush, stumps, roots, and weeds within the construction easement as required for installation of the work. Contractor shall remove only those trees that are required to perform the work, and shall avoid removal of or damage to mature trees to the greatest extent possible. Any marketable logs generated by the removal of mature trees shall be made available to the landowner. Limbs, brush and other cut debris shall be mechanically chipped and spread as mulch on the easement within the disturbed areas within 7 days of cutting. All other materials shall be disposed of by means of mechanical chipping, landfill disposal, or other approved methods not in conflict with Federal, State or local laws, ordinances or regulations. No brush or debris may be burned on site. No intact brush, trash, debris or large rock may be left on the easement, even if approved by the landowner.

#### 1.5 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 clean-up shall consist of final grading of disturbed areas and seeding of areas where grass growth was damaged or destroyed by the Contractor's operation. In areas of established lawns no rock shall be left in the top 6" of soil and the finished grade shall be that which existed before construction began. In all cases, lawn 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 at least equal to the condition which existed before construction began. In established lawn areas new grass shall be strawed, and watered as necessary and required to establish a good stand.

## 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.

### 6.2 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.

### 6.3 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, 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 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.
- ii. Row-Crop Fields: The disturbed water main areas shall be free of all rocks. All areas shall be leveled and trench settlement shall be sufficiently backfilled to bring the areas back to their original grade. Additionally, if the Contractor hauls off and disposes a load of waste material (i.e. rock) from a particular location, 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. Upon completion of the final cleanup, the Contractor shall provide evidence of crop damage restitution with each affected landowner, and the Contractor shall obtain and supply the Owner with a signed acceptance notice from each affected landowner (Sample included in the Appendix).
- iii. Pasture Fields: The disturbed water main areas shall be free of all rocks, and the area shall be graded and seeded sown in accordance with Specification 02-300, Section 5.2. Additionally, if the Contractor hauls off and disposes a load of waste material (i.e. rock) from a particular field, 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, 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 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), casing spacers, end seals, excavation, installation and backfill of the pipes, 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, including bonding requirements, specifically instructed by Federal/State/County/City Highway Officials and the encroachment permit(s) obtained by the Owner.

#### 6.0 OPEN CUT CASED ROAD CROSSING (If applicable)

- 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), casing spacers, end seals, excavation, installation and backfill (as specified) 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, including bonding requirements, specifically instructed by County/State/City Highway Officials and the encroachment permit(s) obtained by the Owner.

#### 7.0 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.

#### 8.0 NEW HYDRANT ON NEW WATERLINE (All sizes)

- 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 (unless specified otherwise), valve box, piping, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation.

#### 9.0 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, 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.

#### 10.0 NEW METER AND SERVICE (If applicable)

- 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, 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.

#### 11.0 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 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 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 tracer wire and 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, 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 with tracer wire, all beneath the affected roadway as detailed in the contract drawings.

#### 12.0 RELOCATION & RECONNECTION OF EXISTING METER & SERVICE

- A. Measurement – Relocation & Reconnection of current meters & services 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 tracer wire and 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 water meter (with read features) as illustrated, tapping the main, new service tubing from the tap to the new location, new individual PRV (if existing), new setter, new meter box with lid, all applicable fittings/piping for reconnection to the customer's existing service line, encasement for far side meter tubing (if applicable), 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 with tracer wire, all beneath the affected roadway as detailed in the contract drawings.

#### 13.0 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 and incidental piping that may be required for the connection plus backfilling, other accessories and work necessary for a complete and working installation.

14.0 TERMINATE EXISTING LINE WITH A PLUG & CAP (All Line Sizes; if applicable)

- A. Measurement – Plugging and Capping of existing lines shall be measured by count, all line sizes, 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.

15.0 TERMINATE EXISTING LINE WITH LARGE FLUSH HYDRANT

- A. Measurement – Terminating an existing line with a Large Flush Hydrant shall be measured by count, all line sizes, 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, gate valve as sized (unless specified otherwise), restraint gland packs or other items as may be required to make the connection. Payment shall include providing fittings that may be required, flush hydrant, piping, and all accessories referenced by the plans and specifications, including excavation, installation and backfill as required for a complete and working installation.

16.0 REPLACEMENT/ADDITION OF NEW GATE VALVE ON EXISTING WATERLINE (CUT-IN, if applicable)

- A. Measurement – Replacement or Addition of new gate valves on existing waterlines 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, 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. 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.

17.0 ADDITION OF NEW SHUTOFF ON EXISTING WATERLINE (VALVE INSERTION, 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, as well as all associated pavement (including sidewalks) and surface repairs required for a complete installation.



18.0 AIR VALVES

- A. Measurement - Air release valves and combination air valves shall be measured by count of valves actually installed (including valve marker) 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 air valve, valve vault or box and all accessories referenced by the plans and specifications, and excavation, installation and backfill as required for a complete and working installation.

19.0 SHALLOW DITCH CROSSING (All line Sizes)

- A. Measurement - Shallow Ditch Crossings 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 PVC casing pipe where required by rock depth, 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 channel and 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 river.

20.0 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 river.

21.0 ASPHALT PAVEMENT REPAIR & BACKFILL (If applicable)

- A. Measurement - The replacement of asphalt surface, in uncased sections of waterline, shall be measured for payment by horizontal measurements or station distances along the centerline of the pipe to the nearest 1 foot (all depths).
- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall be total compensation for 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.

22.0 CONCRETE PAVEMENT REPAIR & BACKFILL (If applicable)

- A. Measurement - The replacement of concrete surface, in uncased sections of waterline, shall be measured for payment by horizontal measurements or station distances along the centerline of the pipe to the nearest 1 foot (all depths).

- B. Payment - Payment shall be at the unit bid price for the measured quantity. Payment shall be total compensation for saw cutting, granular backfill or flowable concrete fill (as specified), furnishing and placing all base and surfacing materials, including reinforcement 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.

#### 23.0 WETLAND CROSSING & RESTORATION

- A. Measurement – Wetland Crossings & Restoration 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 trench plugs, protection/preservation of vegetation, erosion control measures justified by the construction as well as any measures needed to preclude sediment entering wetland areas, stripping/salvaging and backfilling native topsoil in each area, and replanting/reseeding the areas with indigenous wetland plants or native seedlings. Payment shall also include all accessories and related work referenced by the plans and specifications or otherwise required for a complete and working installation. Payment shall also include adhering to any special provisions specifically instructed by the Army Corp of Engineer &/or the KDOW Permit, obtained by the Owner.

#### 24.0 WATER LINE MARKERS (If applicable)

- A. Measurement – Isolated pipeline markers shall be measured as the actual number installed.
- B. Payment – Payment will be made at the unit bid price for the measured quantity.

#### 25.0 POLYETHYLENE ENCASEMENT (If applicable)

- A. Measurement – Polyethylene encasement shall be measured to the nearest 1 linear foot of poly wrap 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 polyethylene encasement wrap and all accessories referenced by the plans and specifications as required for a complete and working installation.

#### 26.0 OPEN CUT CASED GAS LINE CROSSING (If applicable)

- A. Measurement - Open cut cased gas line crossing shall be measured to the nearest 1 linear foot of crossing as shown on the Contract 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 PVC casing pipe (excluding the carrier pipe), casing spacers, end seals, 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.

#### 27.0 INSTALLATION OF RESTRAINING GASKET ON DUCTILE IRON WATERLINE

- A. Measurement – Installation of restraining gaskets on ductile iron waterlines shall be measured by count and size of gasket 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 installed. Payment shall include the gasket and all accessories referenced by 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-mil 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 slimmed to grade and the 1-inch void filled with nonshrink epoxy grout.

END OF SECTION 03-310

## METERING STATION INSTALLATION GENERAL REQUIREMENTS (Existing or New Station)

### 1.0 SCOPE

This section describes general project requirements that apply to the installation of the US Highway 79 Meter/Control Valve station. The work to be performed involves miscellaneous site work, piping, electrical service and the installation of one packaged meter station (existing or new), allowing a water sale point with the Logan Todd Regional Water Commission, as described by the Contract Drawings and Specifications.

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 installation of water lines, appurtenances, roadways, and meter station equipment.

### 2.0 QUALIFICATIONS OF BIDDERS

These specifications, contract drawings and related contract provisions are intended to establish a minimum acceptable level of quality, serviceability and performance. The contract drawings and specifications allow for the providing and assembling of materials and components that are readily available and non-proprietary; likewise, these specifications and drawings allow for complete construction and installation of the packaged municipal water distribution equipment using techniques common to the potable water construction market.

### 3.0 SHOP DRAWINGS

The successful bidder will be required to submit 6 sets of complete shop drawings as specified within Technical Specification 01-200 (Submittals) including full dimensional drawings for the structural foundation of each site, and other descriptive information as required to fully describe the materials intended for use with the installation of the proposed metering and pump stations. Three sets will be returned with comments or approvals as appropriate. No materials shall be ordered before approval of shop drawings.

### 4.0 PROJECT COORDINATION

#### 4.1 Completion Time & Coordination with the Equipment Manufacturer

The Owner and Engineer reserve the right to dictate the sequence and order of installation of the various pieces of equipment. It is the intent that Work shall progress so the installing contractor can schedule work without interruption based on an expeditious schedule for production and delivery of the various pieces of equipment by the manufacturer, if applicable. For a new station, the delivery is to be coordinated with the equipment manufacturer.

The Contractor shall submit a work schedule after contract award indicating installation date for the equipment, plus all other site work, considering the targeted delivery date, if applicable. The schedule shall also include dates for shop drawing submittal and review for each station, if applicable.

#### 4.2 Coordination with the Instrumentation Contractor/Supplier/Electrician

Coordination with the instrumentation contractor/supplier/electricians shall be an essential part of the requirement of the station installer. A mandatory pre-construction meeting and one or several coordination meetings may be required to make sure the interface between each site's site work/structural foundation and the instrumentation/electrical wiring is seamless. Failure to consider and account for this expected need for coordination and interfacing, as a cost factor, will not be accepted as a reason for a request for extra monies or a failure to complete the project as required. Such coordination will involve the electrician's installation of conduits and wiring for the equipment itself.



#### 4.3 Coordination of Start-up and Training Services

The engineer and/or a representative of the Logan Todd Regional Water Commission will dictate the coordination of equipment start-up, operator training and follow-up operational check out visits. The engineer will provide proper notice for the start-up and initiation activities so that all parties have the proper personnel and equipment in place for a coordinated start-up of each piece of equipment.

A representative of the Contractor (Installer) will not be required to attend such services unless a problem arises which is attributable to the installation contract's scope of work. Start-up of the manufacturer's equipment shall be done only by factory personnel, who are direct employees of the manufacturer of record.

#### 4.4 Project Manager

To insure requirements of the project coordination are met, the Contractor shall stipulate one individual within the company who has an acceptable level of training and experience to be the project manager for this work over the full term of the contract.

#### 5.0 STATION INSTALLATION COMPLIANCE

All treated water lines, appurtenances, and the Metering Station equipment are to be constructed and installed in full conformance with the requirements of the Kentucky Natural Resources and Environmental Protection Cabinet, Division of Water in addition to all applicable specifications and drawings.

#### 6.0 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.

#### 7.0 INSURANCE

The Contractor will be required to provide a certificate of insurance with various coverages and limits as specifically mentioned within SC-5.04 of the Supplementary Conditions.

#### 8.0 RECEIPT OF STATIONS

##### 8.1 Base Bid Method: Relocate Existing Meter Station from Allensville

The existing Allensville meter station is to be disconnected, loaded, transported and delivered to the site by the Contractor. All costs associated with the relocation and delivery are to be incurred by the Contractor. Unloading of the station at the site will be performed by the installing contractor. The installing contractor is responsible for coordinating the disconnection of the station with the Owner, plus assuring the availability of suitable equipment and personnel to unload the station, and to assure that the site and foundation are properly prepared to receive the station.

## 8.2 Alternate Bid Method: New Meter Station

The new station is to be delivered to the site by the Manufacturer. All costs associated with the delivery are to be incurred by the Manufacturer. Unloading of the station at the site will be performed by the installing contractor. The installing contractor is responsible for coordinating deliveries with the manufacturer to assure the availability of suitable equipment and personnel to unload the station, and to assure that the site and foundation are properly prepared to receive the station.

## 9.0 SITE, ACCESS, TEMPORARY FACILITIES, & UTILITIES

### 9.1 Site

The packaged equipment skid will be installed near Guthrie, Kentucky as depicted in the contract drawings.

- a. **RIGHTS-OF-WAY AND EASEMENTS:** The owner has legal authority to construct these facilities on property owned by the Todd County Water District, within easements on private property, and on existing public rights-of-way and will provide any other required permanent and construction easements. Access to the site of the work is the responsibility of the Contractor.
- b. **LOCATION OF TEMPORARY FACILITIES:** Owner's temporary office facilities, Contractor's Field offices, Sub-Contractors' Field Offices, Engineer's Field Office, Material Storage Buildings, Material and Equipment Storage Yards, and parking areas for all project workers shall be located in areas approved by the Engineer.
- 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.
- d. The Contractor shall protect all existing structures and property from damage and shall provide bracing, shoring, or other work necessary for such protection.

### 9.2 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. The access road 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 the public roads shall be considered a matter of the Contractor's or his suppliers' public liability outside the purview of this Contract.

Contractor shall provide adequate barricades, warning signs, lights, etc., for construction operations hazardous to traffic and public safety.

### 9.3 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 on-site 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. On-site parking shall be limited to that space available in the assigned work and storage area. Additional 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.

#### 9.4 Utilities & Services

- a. WATER: Water for disinfection and testing of the meter station inlet will be available one time from the Owner via the Logan Todd Regional Water Commission without charge. Water for any other 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 for permanent power and electrical service appurtenances to the meter station. These costs shall be included within the Contractor's installation lump sum bid price.**
- 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.

#### 10.0 TAXES AND PERMITS

The Contractor shall pay all required sales, consumer and use taxes, payroll taxes, and other taxes relating to the work of the project. Also, the contractor shall secure and pay for all legally required permits, licenses and fees associated with the construction.

#### 11.0 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.

#### 13.0 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.

#### 14.0 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 work (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 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 entire project.

15.0 MEASUREMENT AND PAYMENT

The Master Meter Station installations 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. Payment shall be at the lump sum basis for the items specified. Payment shall be total compensation for receipt or relocation of the station, all components (including piping, electrical service utilities, fittings, valves, access road, site work, etc. specified for the meter site) and all accessories referenced by the plans and specifications, including excavation, installation, backfill and incidentals necessary for a complete and working installation, all in accordance with the plans and specifications.

END OF SECTION 15-200

## METERING STATION EQUIPMENT GENERAL REQUIREMENTS (Alternate Bid Item: New Installation)

### 1.0 SCOPE

The contractor/manufacturer shall furnish and deliver the specified factory built, above ground meter/control valve station in a modular building, with all the necessary internal piping, controls and appurtenances as shown on the plans in the various configurations and as specified herein. The completed meter/control valve station shall be one (1) piece when delivered and require only off loading, installation on the prescribed foundation, pipeline hook up and electrical service hook up to complete the installation. The specified equipment will be an addition to the existing Logan Todd Regional Water Commission's distribution system to allow for the sale of water to the Todd County Water District in the US Highway 79 area of Guthrie.

### 2.0 MANUFACTURER RELATED ITEMS

#### 2.1 Qualifications Of Station Manufacturer

These specifications, contract drawings and related contract provisions are intended to establish a minimum acceptable level of quality, serviceability and performance. The contract drawings and specifications allow for the providing and assembling of materials and components that are readily available and non-proprietary; likewise, these specifications and drawings allow for complete shop assembling, construction and fabrication of the specified equipment using process techniques common to the packaged municipal water distribution equipment market.

Stations shall be as manufactured by Engineered Fluid Inc., Flowtronex/PSI or approved equal

Manufacturers that may be unfamiliar to the Owner or Engineer may be requested to provide additional documentation after opening of bids. The additional documentation request may include:

1. Submit information documenting successful manufacture of multiple municipal metering and/or pump stations of the size and type proposed.
2. Submit at least 10 references for installed and operational units of the sizes and types proposed.
3. Demonstrate the availability of in-house engineering resources in all required disciplines to design, and oversee the manufacture, start-up and operation of the stations.
4. Demonstrate a thorough quality control program.
5. Describe in detail the personnel and facilities available for manufacture of the equipment, specifically addressing the capabilities of the manufacturer to perform work in-house, and any part of the manufacturing process to be subcontracted or outsourced.
6. Make available the manufacturer's facilities for inspection by the Engineer and/or Owner's Representative.
7. Demonstrate the financial capability of the manufacturer to undertake the work, including bonding capacity, insurance coverage and credit rating.
8. Demonstrate the manufacturer's ability to provide on-going service for the equipment.
9. Demonstrate the manufacturer's ability to affix an UNDERWRITER'S LABORATORIES (UL) LABEL attesting to the compliance of that assembled equipment under the PACKAGED PUMPING SYSTEMS (QCZJ) UL Listing Category. This label shall be inclusive of the entire station with enclosure so as to demonstrate compliance with the National Electrical Code (NEC) requirements for working clearances and wiring procedures. Equipment manufactured without this third party certification label or equipment manufactured by an outside source or "brokered equipment" defined as systems not assembled on the premises of the named manufacturer by that company's employees WILL NOT be allowed.

#### 2.2 Pre-Award Submittal

After the bid opening, each Bidder shall submit, within 7 days written request therefore by the Engineer, the following project specific submittal made up of:

- A. A fully to scale, 24"x 36", set of dimensioned, denoted and project specific mechanical drawings showing plan, front and end views and specific details for the equipment/station covered by this specification section; as well as illustrate the National Electrical Code (NEC) clearances per Section 110-26 of the Code.
- B. A fully detailed, 24" x 36", electrical schematic of the power side including all 120/240/480VAC, single and three phase devices;
- C. A fully listed and enumerated Process and Instrumentation Drawing (P&ID) showing all control and sensing devices and their relation as I/O to the owner supplied RTU;
- D. The listing of the major components set forth in the specification by manufacturer and model number; as well as the UL file number under which the manufacturer is listed.
- E. A statement of equipment/station warranty equaling or exceeding the warranty requirement set forth in this specification, said warranty statement being clear and direct as to the extent of warranty coverage and the time period of warranty coverage so the manufacturer's warranty can be compared with the specified warranty.

Note that this bid submittal is not a substitute for the full project submittal to be required of the awarded manufacturer.

### 2.3 Shop Drawings

The successful bidder will be required to submit 6 sets of complete shop drawings including full dimensional drawings (including all mechanical, structural, electrical and controls drawings), materials specifications and descriptions, and other descriptive information as required to fully describe the proposed metering and pump stations. Two sets will be returned with comments or approvals as appropriate. No fabrication work is to be performed before approval of shop drawings.

### 2.4 Project Coordination

#### 2.4.1 Coordination with the Installing Contractor

The Owner and Engineer reserve the right to dictate the sequence and order of manufacture and delivery of the various pieces of equipment. Work shall progress so the installing contractor can schedule work without interruption based on an expeditious schedule for production and delivery of the various pieces of equipment. All deliveries are to be coordinated with the installing contractor.

The manufacturer shall submit a production schedule after contract award indicating a delivery date for the equipment. The schedule shall also include dates for shop drawing submittal.

#### 2.4.2 Coordination with the Instrumentation Contractor/Supplier

Coordination with the Logan Todd Regional Water Commission's instrumentation (SCADA) contractor supplier shall be an essential part of the requirement of the station manufacturer. A pre-construction meeting and one or several coordination meetings may be required to make sure the interface between the Meter and Control Valve Station and the Instrumentation is seamless. Failure to consider and account for this expected need for coordination and interfacing, as a cost factor will not be accepted as a reason for a request for extra monies or a failure to complete the project as required.

#### 2.4.3 Coordination of Start-up and Training Services

The coordination of equipment start-up, operator training and follow-up operational check out visits will be dictated by the engineer and/or the representative of the owner. Proper notice for the start-up and initiation activities will be provided by the engineer so all parties do have the proper personnel and equipment in place for a coordinated start-up of each piece of equipment.

As is stated in the Factory Start-up section of the specifications, start-up of the manufacturer's equipment shall be done only by factory personnel, who are direct employees of the manufacturer of record and who can demonstrate good and proper training and experience and who have been an employee of the manufacturer in a service capacity for at least two (2) years; an affidavit to this effect will be required.

Third party contractors or the personnel of a representative of the manufacturer will not be acceptable for doing the tasks involved in starting up the manufacturer's equipment. The failure of competent factory start-up personnel completing the required tasks on a timely basis gives rise to intolerable disputes and differences that are not in the owner's best interest.

#### 2.4.4 Project Manager

To insure requirements of the project coordination are met, the manufacturer shall stipulate one individual within the company who has an acceptable level of training and experience to be the project manager for this work over the full term of the contract.

### 2.5 Component Selection

Where within this specification certain components are identified by manufacturer's name or the product name or a model number, there will be no substitutions allowed for these named components. These are components of known quality level and serviceability and their use is to the benefit of the owner. Where "approved equal" items are allowed, the named items are to be used unless the manufacturer demonstrates conclusively prior to manufacture that the proposed component is equal or superior in all ways to the named equipment.

### 2.6 Shipment and Delivery

The manufacturer will be required to deliver the equipment fully completed and ready for picking up from the manufacturer's carrier and placement on the foundation and ready for electrical service connection and inlet and outlet piping connection at the flanges.

The manufacturer is responsible for getting the equipment to the site undamaged. The manufacturer will be responsible for reconnoitering each site so as to be aware of and plan for any unusual conditions that could influence delivery to the exact site over available and permitted streets, roads and highways. Failure to understand conditions of the site and site access will not alleviate the manufacturer from the responsibility to deliver the equipment to the site.

### 2.6 Protection In Shipment

The manufacturer shall cover each station for shipment; the cover shall consist of shrink-wrap, reinforced plastic bag placed over the roof and four sides and heat shrunk to fit securely over the station.

### 2.7 Station Certification and Compliance

The station manufacturer shall be required to affix to the station an UNDERWRITERS LABORATORIES (UL) LABEL attesting to the compliance of the station equipment under the PACKAGED SYSTEMS (QCZJ) UL Listing Category and/or INTERTEK TESTING SERVICES (ETL) LABEL attesting to the compliance of the station equipment under PACKAGED PUMPING SYSTEMS. The ETL label shall state the station conforms to UL STD 778 and is certified to CAN/CSA STD C22.2 NO. 108. These labels shall be inclusive of the entire station with enclosure so as to demonstrate compliance with the National Electrical Code requirements for working clearances and wiring procedures. Equipment manufactured without this third party certification will not be accepted.

The Metering Station is to be designed and constructed in full conformance with the requirements of the Kentucky Natural Resources and Environmental Protection Cabinet, Division of Water.

### 2.8 Factory Start-Up Service

Start-up and warranty service shall be performed by the manufacturer of record, no representative, contract service organization or third party of any sort shall be directed to perform such services by the manufacturer; any attempt to do so will mean forfeiture of the performance and/or warranty bonds.

1. Start-up and warranty service technician shall be a regular employee of the manufacturer of record.

2. As part of the submittal covering this equipment, list factory service manager, his employee number, his telephone number with extension and his number of years with the company. List also each start-up service technician, his employee number and years of service with the company.
3. Verify that one (1) or more of the service technicians listed above will perform the required start-up and warranty service on the equipment covered in the submittal.
4. One (1) full day at job site for start-up and training per station.
5. Start-up service to include two (2) bound O&M manuals for each unique station.
6. Start-up service report attested to by start-up technician and representative of owner or engineer.
7. Service report distributed to:
  - A. Manufacturer's File
  - B. Engineer's File
  - C. Contractor's File
  - D. Owner's File

## 2.9 Post Start-Up Support

Post start-up support shall include follow-up services during the warranty period as requested by the Owner for services and support that are not provided under warranty. This could include additional training, recalibration of equipment, assistance with control configuration and general support functions as requested by the Owner. These services are to be provided by the manufacturer's personnel as described for start-up services.

## 2.10 Warranty

The warranty is the sole responsibility of the station manufacturer and that warranty shall be provided in written form for inclusion with both the submittal covering the specified equipment and the O&M manuals provided with that equipment.

Said warranty shall at a minimum cover:

1. A period of three (3) years commencing upon station acceptance by the Owner and Engineer.
2. The three (3) years period shall be inviolate regardless of any component manufacturer's warranty for equipment and components within the station.
3. The warranty shall cover all equipment, components and systems provided in or with the station by the manufacturer of the station, but shall exclude those components supplied by and/or installed by other parties independent of the manufacturer of record for this station.
4. The warranty shall provide for the station manufacturer to bear the full cost of labor and materials for replacement and/or repair of faulty or defective components so there shall be no cost incurred by the owner for this work during the warranty period.

It is the intent of this warranty specification section to hold for the owner the station manufacturer as the single party responsible for warranting all components and all aspects of performance specified herein. "Second party" or "pass through" warranties will not be accepted.

## 3.0 ENCLOSURE AND EQUIPMENT SPACING

The equipment enclosure size shown on the contract drawings as to length, width, height, configuration and orientation is appropriate for National Standard mandated clearances and for proper clearances above, below and around equipment to provide for safe servicing, removal and reinstallation of that equipment.

Likewise, the equipment hatches where shown shall be sized to provide eventual removal and replacement of any component within the station without altering the station to accomplish that task.

The drawing for this equipment illustrates centerlines and spacing about major equipment items that are minimum for safe and effective servicing and maintenance. Dimensions less than those shown must be noted by the Manufacturer as a deviation from the specifications.



#### 4.0 EQUIPMENT

**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 listed 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 deminimis and minor components waiver apply to this contract**

The Factory-built Master Meter/Control Valve Station shall have, but not limited to, the following items within a packaged modular building:

- 8-inch diameter suction and discharge piping
- 8-inch butterfly valves
- 8-inch gate valves
- 8-inch Cla-Val control valve
- 6-inch Neptune HP turbine meter with strainer
- One (1) 2.5-inch meter test port
- UL Listed 240V, 1 phase, 3 wire 100 amp power panel
- Four (4) fluorescent lamps
- One (1) thermostat
- Two (2) GFCI receptacles
- One (1) intrusion alarm
- Unistrut and interface panel
- One (1) dehumidifier
- One (1) HVAC unit.

#### 5.0 DELIVERY OF STATIONS

The station shall be delivered to the installation site, near Guthrie, Kentucky by the Manufacturer. All costs associated with the delivery are to be covered by the Manufacturer. Unloading of the stations at the site will be performed by the installing contractor. The Manufacturer is responsible for coordinating deliveries with the installing contractor to assure the availability of suitable equipment and personnel to unload the station, and to assure that the site and foundation are properly prepared to receive the station. Additional costs resulting from the Manufacturer's failure to properly coordinate delivery will be charged to the Manufacturer.

#### 6.0 UNITIZED ENCLOSURE STRUCTURE

The meter station will be complete with a factory assembled, unitized building securely affixed to a steel base structure. The structural steel base with floor plate is for supporting the building and mechanical equipment as shown on the plans. Field erected buildings will not be acceptable.

#### 6.1 Building Certification

By Kentucky Commonwealth Law, all Modular Buildings Manufactured in or imported into the state must have Model Plan Approval by the Kentucky Office of Housing, Buildings & Construction (State Fire Marshal) as administered by the Kentucky Industrialized Building System (K.I.B.S.) Program. An authorized Manufacturer will have an assigned KIBS Factory Number, and each unit will bear a serialized label certifying it is "In Compliance with the Standards Adopted by the Authority of the 2002 Kentucky Residential Code or the 2002 Kentucky Building Code". The station Manufacturer will be required to provide the assigned KIBS Factory Number, and the Serial Number for each label which will be attached to the Modular Station. Stations lacking this serialized label at time of delivery will not be accepted

## 6.2 Construction and Materials

### 6.2.1 Building Design Criteria

The station building enclosure shall be a factory assembled, modular structure of one (1) compartment all attached to the station base structure and requiring no additional assembly at the job site. The building design criteria shall be: 1.) To withstand snow load based on ASCE 7-05 Ground Snow Loads for the state and county of installation (2.) To withstand wind loads based on ASCE 7-05 for wind speeds; (3.) Be designed for site specific seismic requirements based on local conditions as dictated by the Available Ground Motion Parameters according to ASCE 7 and IBC 2006 and 2009 established by zip code and a live floor load of 125 PSF; (4) Be designed to IECC 2015 version of the energy code.

The modular building enclosing each of the stations is shown at its minimum size so that National Standards mandated clearances are maintained above, below and around equipment for proper and safe servicing, removal and reinstallation of this equipment.

The building specified shall be of the size shown on the drawings. Building sizes less than those shown will not be allowed.

### 6.2.2 Building Construction

The materials specified are specifically chosen to be resistant to moisture degradation and infestation and to be maintainable.

Insulation values for the walls and roof structure shall be a minimum R-21 in the walls and the roof. Insulation within the roof and wall panels shall be foam-in-place polyurethane material applied between the interior and exterior sheathing forming a closed cell bounded by the steel framing. The insulation shall have a minimum density of 2.0 lbs/cu. ft. nominal and shall be applied to the thickness required to provide a minimum R value of 21. The insulation shall have an ASTM E-84 flame spread index of <10 and smoke developed of <195.

Building framing materials shall comply with the A.I.S.I. Specification for the Design of Cold-formed Steel Structural Members and to Standards ASTM C-955, ASTM C-1007, ASTM C-645, ASTM C-754 and ICBO 4782P. and 4784P. A framing design incorporating the members covered by the listed specifications and standards shall develop a structure meeting or exceeding the building design criteria listed previously.

Metal-clad, foam insulated panels or SIPS will not be allowed.

The building structure shall be fabricated using steel C-studs as wall framing members and C-joists for roof support. The size, placement and spacing of studs and joists shall be in accordance with the design criteria and material standards. The wall C-studs shall be a minimum 2" x 3 5/8" / 2" x 6" size of 16 gauge material minimum. The roof C-joists shall be a minimum 1-5/8" x 8" size of 16 gauge material minimum.

The exterior wall & roof sheathing shall be 1/2" thick, exterior, CDX grade plywood. The interior wall and ceiling sheathing shall be 3/4" thick, exterior, CDX grade plywood.

All interior wall & ceiling surfaces shall be covered with .090" thick FRP (fiberglass reinforced plastic) sheeting of pebble grain, gloss, white finish. The individual wall faces shall be covered with one continuous sheet. The FRP sheets shall be glued to the sheathing requiring no fasteners. Corner moldings of like FRP material shall be installed & finished in a workmanlike manner.

Openings in the sidewalls and/or roof shall be as shown and be fully framed out and supported using single or multiple framing members sufficient to support and fasten those devices or equipment items requiring a framed opening, these being access hatches, HVAC equipment, pipe passages, conduit passages, door and window openings and other special purpose openings as might be shown and required. The attaching of devices or equipment to the building at a framed opening shall be done fully according to the device manufacturers mounting instructions.

The building shall be warranted by the station manufacturer for a period of ten (10) years from the date of delivery.

### 6.3 PASSAGE OF PIPES THROUGH INTERNAL WALLS

Where suction and discharge piping, or any other pressure piping, passes through the station floor plate and base sub-structure, that area of the floor shall be provided with a grout sleeve made up of steel pipe of 9" height and of sufficient annular diameter to pass a full size pipe flange for the pipe size shown.

The steel sleeve shall be welded into the floor plate with a 1" projection above the floor in the station. Following installation of the inlet and outlet pipes, the installing contractor shall be responsible for furnishing and installing grout to close the opening around the installed pipe.

### 6.4 MOUNTING AND FASTENING

The building shall be fabricated up from and securely attached to a framework fabricated of 2" x 6" steel tubing welded at each corner to form a base frame serving as a stable base for handling and transporting the building prior to attaching the building to the station base skid. To hold the building framing to the 2" x 6" base frame, 5/8" anchor studs will be welded to the base frame. In assembling the building framing to the base frame a 3 1/4" x 4" x 1/4" thick anchor plate under a flat washer, lock washer and 5/8" nut shall be used to fasten the building framing to the framing base as shown. The base frame shall be grit blasted to a SP-6 finish and coated with the specified coating material.

The building enclosure shall be firmly and securely attached to the steel base structure by lag bolting from inside the station, through evenly spaced 9/32" holes pre-drilled into a 2" by 1-1/2" by 1/8" thick angle piece that has been continuously welded to the steel floor. The lag bolts shall screw into the 2" x 6" tubular base frame upon which the building has been built.

The lag bolts shall be plated steel, size 5/16" diameter x 2" long. The number and location of the lag bolts shall be as determined by structural analysis so as to maintain the live load and wind load ratings as specified and to resist shearing and tearing in the process of transporting and placing the finished station.

### 6.5 EXTERIOR FINISHES

#### 6.5.1 Exterior Treatment-Side Lap, Ribbed Metal Siding

The exterior sheathing shall be covered with 29 gauge metal siding. The siding shall have a trapezoidal rib on 9" centers. Each panel shall be of the exposed fastener, sidelap seam type and have a rib height of 7/16 inches and be 36" wide with a smooth texture. The steel siding shall be warranted for twenty years and shall be Max-Rib as manufactured by McElroy Metal.

#### 6.5.2 Metal Roof System

The roof sheathing shall be covered with a 26 gauge metal panel system to form a standing seam roof as shown. The panels shall have a Galvalume® substrate with a Kynar 500® finish. The panels shall meet UL Standard 2218, Class 4 impact resistant and Class A fire resistant rating. The system shall be complete with fascia and soffit. The minimum roof slope shall be 1/2:12.

The ridgeline of the roof shall be covered end to end with a broken edge panel open along the sides to create a roof vent along both sides of the entire ridge line. The top of the broken edge panel along the ridge line shall cover over the top of the standing seams to provide a finished appearance.

#### 6.5.3 Heavy Duty Steel Doors

Doors, single and double leaf and of the size shown, are manufactured of 18-gauge galvanealed steel. All doors shall be full flush construction and 1-3/4 inches thick. Doors shall be reinforced, stiffened, insulated, and sound deadened with a solid polystyrene foam board permanently bonded to the inside of each face skin. The lock and hinge edge of each door shall be welded with a center hairline seam the full height of the door. The lock edge shall be reinforced full height by a 14-gauge continuous one-piece channel

extruded templating. The hinge edge shall be reinforced full height by a 14-gauge continuous one-piece channel, formed and tapped for hinges. Top and bottom of the door shall be closed with 16-gauge channels. Doors shall be thoroughly cleaned and receive an iron phosphate treatment prior to receiving one coat of prime paint. Door closures and rim panics are reinforced with 14-gauge channels.

Doors shall be fully-mounted in frames produced for pre-hanging of commercial 1-3/4" doors. Frames are formed to 16-gauge commercial quality cold rolled steel conforming to ASTM A366 or A620 and A568. Frames are produced in two welded units, to be mechanically joined during installation. The base side is prepared for all required hardware. Both units, base and trim, are furnished with welded mitered faces. Frame anchoring includes compression anchors and stud screws. Door hinges shall be continuous gear hinges, fabricated of extruded 6063-T6 aluminum alloy/temper with pinless assembly. The doors shall have a lockset, exterior handle, and top mounted-door closer with hold-open device.

Doors and frames shall be finished with a two-component, aliphatic/acrylic polyurethane coating, white in color, with a high gloss finish. The coating shall be resistant to a wide range of solvents and chemicals under splash and spill conditions. The coating system is V.O.C. compliant.

Door sizes and locations are as shown on the drawings.

#### 6.5.4 Bridge Crane System Supports

The supports for the bridge crane running beams shall be attached into the building structure or shall be supported by structural steel, vertical columns placed along the sidewalls in sufficient numbers to fully support the bridge crane structure and any lifted load at any point within the building.

#### 6.5.5 Registered Professional Engineer Review

The base substructure, building and the bridge crane system and the means of attaching the building to the foundation shall be reviewed and stamped by an Kentucky Registered Professional Engineer.

#### 6.5.6 Building Substructure

The base/floor system substructure shall be made up of steel plate and standard structural steel shapes of the sizes and weights sufficient to bear the loading placed on the base by shipping and operation.

The substructure shall be designed to support the building live and dead loads plus the burden imposed by loading, transporting and unloading of this equipment.

All steel plates used in the substructure shall meet or exceed the requirements of ASTM-A36. The structural shapes (channels and angles) shall be of the thickness/weight as shown on the plans for this item and shall meet or exceed the requirements for ASTM A-36. The structural rectangular or square tubing shall be of the wall gauge as shown on the plans for this item and shall meet or exceed the requirements for ASTM A-500 Grade B.

On the substructure on the floor plate, indented approximately 6"/8", there shall be welded a 1-1/2" x 2" x 1/8" steel angle iron with drilled holes. This angle steel piece shall be the bracket through which the building is attached to the base substructure.

### 7.0 MISCELLANEOUS BUILDING COMPONENTS

#### 7.1 Floor Drains

The station shall have floor drains as shown on the drawing; The floor drains shall be a 4" grated opening with 4" I.D threaded hub for connection of a drain line up under the station floor..

#### 7.2 Floor Matting

The walkway areas (that space from the entrance ladder to the control panel and the entire NEC clearance area) shall be covered with a rubber drainage runner. The runner shall be medium duty, 1/2 inch

minimum thickness of open slot design allowing fluids to drain underneath or walking surfaces. The runner shall have a tread design to promote sure footing. The underside of the runner shall have a raised knob design to permit aeration and drainage, and to reduce runner fatigue. The runner shall not be glued to the floor.

### 7.3 Building Lifting Device

An adjustable spreader type lifting device, built to lift the modular building structure **without** impinging the lifting chains/cables on the modular building sidewalls, shall be provided by station manufacturer for use by the installing contractor for the purpose of unloading station from trailer.

Lifting from the ends of a structure that is either wider than 10 feet or longer than 15 feet is not allowed unless by fully developed structural calculations it can be shown that when lifted, the buildings base structure will deflect less than 1/4 inch between lift points.

### 8.0 CORROSION PROTECTION

All interior and exterior surfaces of the exposed steel structure, transmission piping, and fittings shall be gritblasted equal to commercial blast cleaning (SSPC-SP6). Following fabrication all exposed surfaces of the station, interior and exterior, shall be coated according to the following requirements.

**WELDMENT PRIME COATING:** All weldments will be pretreated by hand to provide additional corrosion protection using the same product as the base coat. Following the pretreatment full coating application shall take place.

**BASE COATING:** The base coating shall take place immediately after surface preparation. The protective coating shall consist of a two-component, high solids, high build, fast drying epoxy system for protection and finishing of steel and having excellent corrosion resistant properties. The epoxy system shall be self-priming and require no intermediate coatings.

**TOP COATING:** Following the base coating application, a full finish coating application shall take place. The protective coating shall consist of a two-component, high solids, high build, fast drying epoxy system for protection and finishing of steel and having excellent corrosion resistant properties. The epoxy system shall be self-priming and require no intermediate coatings. The base and finish coats shall provide a total dry mil thickness of 8.0 mils.

**POST-ASSEMBLY COATING:** Following assembly and just prior to shipping, there shall take place a thorough cleaning of the floor of the station followed by a rolled on coating of the two part epoxy coating to cover over any scuffing or scaring that might have occurred during assembly.

### 9.0 PIPING

Piping shall be steel and conform to material specification ASTM A-53(CW) for nominal pipe size four (4) inch and smaller and ASTM A-53(ERW) Grade B for nominal pipe size five (5) inches and larger. Steel butt-welding fittings shall conform to material specification ASTM A-234 Grade WPB and to the dimensions and tolerances of ANSI Standards B16.9 and B16.28 respectively.

Forged steel flanges shall conform to material specification ASTM A-105 Class 60 and/or ASTM A-181 for carbon steel forgings and to the dimensions and tolerances of ANSI Standards B16.5 as amended in 1992 for Class 150 and Class 300 flanges.

The piping sizes shall be as shown on the drawing.  
Size 10 inch and below - Schedule 40  
Size 12 inch thru 20 inch - Standard weight (.375" wall)  
Size 24 inch and above - Standard weight (.500" wall)

## 10.0 PIPE WELDING

All pipe welds shall be performed by certified welders employed by the station manufacturer. As part of the equipment submittal, the station manufacturer shall provide copies of the welding certificates of the employees who are to perform the pipe welds.

Shop welders shall be certified in accordance with ASME BPVC Section IX or AWS D1.1. Certification shall be done by an independent testing laboratory giving certification for the weld positions for which the tests were performed.

### 10.1 Pipe Surface Preparation

All piping inside and outside surfaces shall be prepared by grit blasting, or other abrasive blasting, prior to any welds taking place to minimum SP-6 finish.

### 10.2 Pipe Cutting

Piping of 4" diameter and smaller may be cut by saw. Piping of 6" diameter and larger shall be bevel cut, and Oxyfuel or Plasma-arc cutting techniques shall be used to assure and facilitate bevel pipe cuts.

### 10.3 Saddle Cuts And Welds

Saddle cuts in pipe made in preparation for a saddle weld of a pipe at an angle to a pipe shall be made with numerically controlled, plasma cutting machines. Similarly, saddle end cuts to pipes to make a saddle mating piece shall be done with the same numerically controlled plasma cutting equipment. When the two saddle cut pieces are mated and welded with the MIG process, the internal finished weld shall be smooth and free of inclusions, crevices and other corrosion sites.

### 10.4 Pipe Welding Techniques

Pipe welds shall be performed by metal added, inert gas shielded arc welding (MIG) techniques wherein the weld heat settings, the wire feed speed and the traverse speed of the work below the welding are numerically set to assure proper weld fusion and penetration and repeatable welds.

In all cases, short circuit transfer, spray transfer or pulse-arc transfer modes of the gas metal arc welding process shall be used. When utilizing the short circuit mode, shielding gas consisting of 50% carbon dioxide and 50% argon gas shall be used. When utilizing the spray or pulse-arc transfer modes, a shielding gas consisting of 5% carbon dioxide and 95% argon shall be used.

In all cases, welding wire with a minimum tensile strength of 70,000 psi shall be employed.

All flange welds and butt welds of equal size pipe shall be a single continuous nonstop weld around the complete circumference of the pipe. Whenever possible, vertical up weld passes will be applied to all pipe welds. No vertical down weld passes will be allowed.

Completed pipe welded assemblies shall create no internal obstruction, restriction or create any unintended sources of water deflection.

Piping of six (6) inch diameter and larger shall require a minimum of two (2) weld passes to complete each weld. The first pass, or root pass, shall be applied at the bottom of the bevel cut using the short circuit transfer welding mode, and the second pass, or cap pass, shall be applied over the root pass using the spray or pulse arc transfer welding modes to insure that at a minimum the total weld thickness shall be equal to thinnest of the two pieces being welded together.

The pipe shall be sand blasted, as specified elsewhere, before pipe weld and after pipe weld, before fusion bonded epoxy is applied.

## 10.5 Weld Standoffs

No welding shall be performed on fusion bonded coated piping after the coating process has been performed. Where any piping is to be welded after the application of fusion bonded epoxy coating to the inside of the pipe, at the point of the weld, a weld standoff must be welded to the pipe prior to the coating. The weld shall be made to the standoff and not onto the pipe.

## 10.6 Tank/Wall Penetration Coating Protection Sleeve

Where a fusion bonded epoxy interior coated pipe passes through the steel tank shell or a steel wall section, prior to fusion bonded coating of that pipe, a pipe sleeve shall be welded over the pipe in the area where the pipe passes through the steel sheet.

The sleeve shall be one-half (1/2") inch thickness and fit closely over the transmission pipe. The sleeve shall be seal welded to the transmission pipe at each end with a full and continuous fillet weld.

Following the welding of the sleeve to the transmission piping, the sleeve welds and the sleeve shall be grit blasted to an SP-6 finish so the pipe is prepared for fusion bonded epoxy coating by the process specified elsewhere in these documents.

## 11.0 PIPE SUPPORTS AND BRACING

Pipe supports by minimum sizing for:

- 8" and smaller piping shall be 2" x 3" x 3/16" wall rectangular tubing;
- 10" and larger piping shall be 3" x 4" x 1/4" wall rectangular tubing;
- 6" and larger piping shall be provided with "kick" bracing projecting fully from the underside of the pipe to the floor at an angle of no less than 15E from vertical out at a right angle to the run of the pipe being supported. These "kick" braces shall be in addition to the vertical pipe supports called out above.

Pipe supports are to be fully welded at both end points to the pipe and steel floor where required.

Where components are to be supported and may require disassembly at some time, the supports for these components shall be welded at the bottom and bolted at the top by use of a bolt yoke welded to the top of the support and bolted into the flange connection picking up at least three bolts.

## 12.0 FUSION BONDED EPOXY COATING - INTERNAL PIPING

The internal surfaces of piping to be fusion bonded coated shall be grit blasted to an SP-10 finish with the finish profile required by the coating material manufacturer.

The internal, wetted surfaces of the steel transmission piping shall have applied to it a Fusion Bonded Epoxy Coating on the interior pipe surface. The coating shall be applied and meet the testing requirements of Table 1 and Table 2 with the exception of Table 2 section 7 per AWWA C-213.

The powder coating product shall be National Sanitation Foundation (NSF) Standard 61 certified material.

Prior to shipment of the station, the station manufacturer shall provide in writing to the Engineer certification that the fusion bonded epoxy coating has been applied to all internal surfaces of the steel piping using the proper method. Said certification shall show under the station manufacturer's letterhead:

- Date of application;
- Material manufacturer and product designation including a product data sheet for the coating;
- Applier of the fusion bonded coating, name, address and phone number;
- Notarized signature of an officer of the station manufacturing company stating the fusion bonded epoxy coating was applied to AWWA Standard C213-91 or the latest revision.

### 13.0 Floor Coating and Corrosion Protection System

The exposed surfaces of the structural steel base shall have a non-skid coating of a two-component, 100% high performance aromatic polyurea spray elastomer system with zero VOC (Volatile Organic Compounds), 100% solid. The coating shall offer outstanding performance and superior elastomeric protection for various substrates. The coating shall be designed as a user-friendly product for moisture insensitive applications because of its pure polyurea chemistry, and offer exceptional adhesion properties for properly prepared substrates. The high performance formulation shall produce an excellent skin formation for chemical resistance and moisture protection.

Both the Iso "A" Side and Resin "B" Side shall be preconditioned between 70-90°F before application. Iso "A" and Polyol "B" components must be pumped by low-pressure transfer pumps to a suitable high-pressure proportional pumping system.

Temperature Settings:  
 Iso "A" Block Heater: 140-160°F  
 Resin "B" Block Heater: 140-160°F  
 Hoses (Iso and Polyol) 140-150°F

Hydraulic Pressure Setting:  
 Equipment Hydraulic Pressure: 2,000-2,500PSI

#### CHEMICAL TECHNICAL DATA:

Mix Ratio by Volume: Gel Time: 1A:1B 6-9 Sec  
 Tack Free Time: 9-12 Sec  
 Viscosity (cps) @ 77°F  
 "A" Iso Side: 1,000±100  
 "B" Resin Side: 370±50  
 Material Density (lbs/gal) @ 77°F "A" "A" Iso Side: 9.5 lbs/gal  
 "B" Resin Side: 8.4 lbs/gal.

#### BASIC PHYSICAL PROPERTIES:

All tests are performed by OCM Test Laboratories.

- ISO 17025 Certified
- American Association for Laboratory Accreditation (A2LA)

Test Name	Test Methods	Value
Hardness Shore D	ASTM D2240	60±1
Coefficient of Friction	ASTM D1894	
Static		0.305
Kinetic		0.127
Dielectric Const.	ASTM D150	3.6
Dissipation Factor	ASTM D150	0.031
Volume Resistance	ASTM D257	2.3x10 <sup>14</sup> ohm cm
Elongation	ASTM D412	162%
Flexural Strength ASTM D790		2,630 PSI
Flexural Modulus	ASTM D790	0.056 MSI
Fungus Test	MIL-STD 810F	Pass
Pull-off Test—Adhesion	ASTM C297	
To Metal – No Primer		1,800 PSI
To Metal – XPM Primer		1,910 PSI
To Metal – LXSF515 Primer		1,870 PSI
Taber Abrasion	ASTM D4060	0.06980
(gm Loss/1000 cycles)		
Tear Strength	ASTM D624	783 ppi
Tensile Strength	ASTM D412	3,432 PSI
Water Vapor Trans.	ASTM E96	0.499 Grains/Hr Sq.Ft.



The chemical resistance testing for the coating shall be per ASTM D543 for immersion in fluids methods. Additional product certifications shall include USFDA Coatings for Incidental Food Contact Applications Certified by Keller and Heckman LLP and MIL-STD-810F.

#### 14.0 SERVICE CONNECTIONS ON INTERNAL PIPING

All plumbed devices within the station eventually requiring service, such as meters, control valves, pumps and like equipment, shall be easily removed from the piping by the presence of appropriately placed and sufficient quantity of adaptors and couplings as shown on the drawings; no less than the quantity of couplings and adaptors shown shall be allowed.

#### 15.0 COMPRESSION COUPLINGS

The station piping shall include a variety of compression type, flexible coupling to prevent binding and facilitate removal of associated equipment. These couplings are to be where shown on the plans. In lieu of a compression coupling, a flanged coupling adapter (FCA) may be used.

Grooved fittings may not be used under any circumstance.

All compression couplings or flanged coupling adapters (FCA), and flexible connectors/expansion joints shall include a minimum of two (2) zinc coated steel threaded rods across the joint with appropriate bolted restraining points.

#### 16.0 INLET/OUTLET PIPE ATTACHMENT AND RESTRAINING POINTS

The main inlet and outlet piping to the station shall each be provided with two (2)/four (4) restraining points as welded on "eyes" or similar device welded to the underside of the base structure framing as shown to facilitate the attachment of joint restraint tie rods or other device to be used in retarding any pipe movement at the connections.

#### 17.0 COMBINATION PRESSURE GAUGES

Combination pressure gauges shall be glycerine filled with a built-in pressure snubber and have 4-1/2 inch minimum diameter faces and be turret style, black phenolic case with clear glass face. The movement shall be rotary, of 400 Series stainless steel with Teflon coated pinion gear and segment. The gauge shall be bottom connected and accept a 1/4" NPT female thread. Combination pressure gauge range and scale graduations shall be in psi and feet of water as follows:

INLET PRESSURE - 0 to 200 psi, 10 psi figure intervals, with graduating marks every 1 psi (0-230 feet).

OUTLET PRESSURE - 0 to 200 psi, 10 psi figure intervals, with graduating marks every 1 psi (0-230 feet).

#### 18.0 SENSING DEVICE MOUNTING

All gauge, switch and transmitter sensing lines shall be minimum 1/4" OD white polypropylene tubing run from the sensing point and a ball valve to the point of device mounting. The pilot tubing shall be run in a workmanlike manner with elastomeric/stainless steel mounting straps to securely hold the tubing to be free of stress and vibration. The alignment and organization of the sensing lines shall be continuously rising.

#### 19.0 SAMPLE TAPS & BALL VALVES

A single, right angle outlet, smooth nose, brass sample tap shall be affixed to the manual vent ball valve for the low suction lockout and suction pressure gauge assembly.

The ball valves will be 2-piece, full-port design with blow-out proof stem. The seats, packing and seal shall be PTFE. Ball valves shall be provided with an adjustable stem packing nut. The body and retainer shall be lead free brass (DZR). The ball shall be lead free brass (DZR), chrome plated for sizes 1/4"-1" and 316SS for sizes 1-1/4"-4". The handle shall have a distinctive white "lead free" handle grip and blue "lead free" hanging tag.

The valves will be NPTxNPT threaded pattern. Maximum working pressure shall be 600 psi up to 2" and 400 PSI for sizes 2-1/2" to 4".

## 20.0 HOSE BIBBS

There shall be provided a standard hose bibb with valve and vacuum breaker on the suction piping. The hose bibb connection shall be through a pressure regulator if the header pressure would exceed 60 psi.

## 21.0 BUTTERFLY VALVES

Valve body shall be wafer style, for ANSI Class 125/150 flange bolting and have a metal reinforced, dovetail seat for drip-tight, bi-directional shutoff. The valve stem shall be one piece connected to the disk by stainless steel torque plugs with upper and lower RTFE inboard stem bearings and heavy duty upper stem bushing.

The valve body shall be cast iron with stainless steel disk and stem, EPDM seat, polyester upper stem bushing and NBR stem seal. 6" and smaller valves shall be equipped with a lever operator with 10 degree throttle stops. 8" and larger valves shall be equipped with a weatherproof, heavy duty handwheel gear operator.

Butterfly valves shall be Keystone, Nibco, Dezurik or approved equal.

## 22.0 GATE VALVE

The isolating valve as shown shall be a full ported gate valve meeting the requirements of AWWA C-515. The body, bonnet, wedge and seal plate shall be ductile iron in accordance with ASTM A536. The wedge shall be totally encapsulated in rubber. The rubber coating shall be permanently bonded to the ductile iron wedge casting and shall meet ASTM D429 tests for rubber to metal bonding. No paint shall be allowed in the wedge and the wedge must not be hollow. All gaskets shall be O-ring seals. All fasteners are to be 304 stainless steel. The body, bonnet and seal plate shall be epoxy coated in accordance with ANSI/AWWA C550 certified to NSF 61. The coating shall be on the interior and exterior of the valve.

The valves are to be non-rising stem with handwheel operator, opening left.

The valve body shall be flanged and drilled to ANSI B16.1, Class 125.

Valve maximum working pressure rating shall be 250 psi.

Gate valves shall be by M&H Valve, Mueller, or approved equal.

## 23.0 FLOW CONTROL VALVE

### 23.1 Function

There shall be provided as shown a diaphragm type control valve serving the combined function of electronic interface control of flow under RTU direction and with pressure reducing function hydraulically operated and with solenoid override to put the valve under control of hydraulic pilots upon power failure or loss of outlet side communication at the RTU.

### 23.2 Main Valve

The valve shall be hydraulically operated, single diaphragm-actuated, globe pattern. The valve shall consist of three major components: the body with seat installed, the cover with bearings installed and the diaphragm assembly. The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure.

Valve shall be heat fusion bonded epoxy coated on its interior and exterior surfaces.

### 23.3 Main Valve Body

No separate chambers shall be allowed between the main valve cover and body. Valve body and cover shall be of cast ductile iron. The valve shall contain a resilient, synthetic rubber disc, with a rectangular cross-section contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The disc guide shall be of the contoured type to permit smooth transition of flow and shall hold the disc firmly in place. The disc retainer shall be of a sturdy one-piece design capable of withstanding opening and closing shocks. It must have straight edge sides and a radius at the top edge across this surface.

The diaphragm assembly containing a non-magnetic 303 stainless steel stem of sufficient diameter to withstand high hydraulic pressures shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. The seat shall be a solid, one-piece design and shall have a minimum of a five-degree taper on the seating surface for a positive, drip-tight shut off.

The diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure.

The flexible, non-wicking, FDA approved diaphragm shall consist of nylon fabric bonded with synthetic rubber compatible with the operating fluid. The center hole for the main valve stem must be sealed by the vulcanized process or a rubber grommet sealing the center stem hole from the operating pressure. The diaphragm must withstand a Mullins Burst Test of a minimum of 600 psi per layer of nylon fabric and shall be cycle tested 100,000 times to insure longevity. The diaphragm shall not be used as the seating surface. The diaphragm shall be fully supported in the valve body and cover by machined surfaces which support no less than one-half of the total surface area of the diaphragm in either the fully opened or fully closed position.

The main valve seat and the stem bearing in the valve cover shall be removable. The cover bearing and seat in 6" and smaller size valves shall be threaded into the cover and body. The valve seat in 8" and larger size valves shall be retained by flat head machine screws for ease of maintenance. The lower bearing of the valve stem shall be contained concentrically within the seat and shall be exposed to the flow on all sides to avoid deposits. To insure proper alignment of the valve stem, the valve body and cover shall be machined with a locating lip. Cover bearing, disc retainer, and seat shall be possible without removing the valve from the pipeline.

The valve manufacturer shall warrant the valve to be free of defects in material and workmanship for a period of three years in accordance with all applicable instructions. Electrical components shall have a one year warranty.

### 23.4 Pilot Control System

The pressure reducing pilot control shall be a direct-acting, adjustable, spring-loaded, normally open, diaphragm valve designed to permit flow when controlled pressure is less than the spring setting. The pilot control is held open by the force of the compression on the spring above the diaphragm and it closes when the delivery pressure acting on the underside of the diaphragm exceeds the spring setting. The pilot control system shall include a fixed orifice.

The valve shall include a set of solenoid valves to provide the required valve functions for positioning mode and for pilot operated mode. There shall be provided on each valve a dual, stem mounted, limit switch assembly wired to the RTU through the interface panel. The solenoid valves shall be equipped with manual bypass valve cocks.

**The valves shall be Cla-Val model equal to similar installations within the Logan Todd distribution system.**

### 24.0 WATER METER & STRAINER

The meter station shall include one (1) turbine type meters with programmable registers located as shown on the drawings. The size shall be 6" with flange mounted strainers directly upstream of the flow meter bodies. The turbine meter shall be flanged and shall conform to ANSI Class 125. The maincase and cover shall be cast of water works bronze containing not less than 75% copper. The cover shall contain a stainless steel calibration vane for the purpose of calibrating the turbine measuring element while in-line and under pressure. The

calibration vane shall contain no gear reduction and shall be covered by a protective cap that is attached in a tamper-resistant manner.

The external casing bolts shall be made of type 316 stainless steel. The register shall be permanently roll-sealed, straight reading, indicating in gallons. The register shall include a center-sweep test hand, a low flow indicator, and a glass lens. The register shall be serviceable without interruption of the meter's operation. Register boxes and covers shall be of bronze composition.

The register box shall be affixed to the top cover by means of a plastic tamperproof seal pin that must be destroyed in order to remove the register. The meter serial number shall be imprinted on the meter maincase as well as the register box cover.

The turbine measuring chamber shall be a self-contained unit attached to the cover for easy removal. The turbine rotor spindle shall be stainless steel. The bearings shall be graphite or ryton-coated graphite. The intermediate gear train shall be directly-coupled to the turbine rotor spindle and magnetically coupled to the register through the meter cover. The gear train shall be enclosed in the turbine rotor outlet and shall be capillary sealed. All moving parts of the gear train shall be made of a self-lubricating polymer or stainless steel for operation in water.

The meter/strainer register assembly shall include a Tricon E register to provide a flow proportional 4-20 ma output signal to the PLC system. Registration accuracy over the normal operating range shall be 98.5% to 101.5%. The turbine meter assembly shall be complete with a like size, stainless steel type, top clean-out strainer immediately upstream and flanged to the inlet of the turbine meter.

The meter/strainer assembly shall be a Neptune HP turbine as manufactured by Schlumberger Industries, or approved equal. **The Assembly shall be equal to similar installations within the Logan Todd distribution system.**

#### 25.0 METER TEST PORT

The meter installation shall be complete with a meter test port as shown on the plans for this item. The test port shall consist of a NPT coupling in the pipe downstream of the meter capable of accommodating a threaded by hose connection adapter. The connection shall be plugged.

#### 26.0 PRESSURE TESTING

When the station plumbing is completed, the pressure piping within the station, including valves, control valves, fittings, connections as make up the entire system shall be hydrostatically tested at a pressure of 150 psi or a pressure equal to the lowest test pressure rating of the equipment within the tested system, whichever is greater pressure. The test pressure shall be applied for a minimum of 20 minutes, during which time all joints, connections and seams shall be checked for leaking. Any deficiencies found shall be repaired & the system shall be retested.

The results of this testing shall be transmitted in writing to the Engineer prior to shipment of the station and shall note test pressure, time at full pressure and be signed by the Quality Control Manager or test technician.

#### 27.0 ELECTRICAL

##### 27.1 Electrical Apparatus - Design, Assembly & Test

The electrical apparatus and control panel design, assembly, and installation, and the integration of component parts will be the responsibility of the manufacturer of record for this equipment. That manufacturer shall maintain at his regular place of business a complete electrical design, assembly and test facility to assure continuity of electrical design with equipment application. Control panels designed, assembled or tested at other than the regular production facilities or by other than the regular production employees of the manufacturer of record for this equipment will not be approved.

## 27.2 Conformance To Basic Electrical Standards

The manufacturer of electrical control panels and their mounting and installation shall be done in strict accordance with the requirements of UL Standard 508A and the National Electrical Code (NEC), NFPA 70 latest revision so as to afford a measure of security as to the ability of the eventual owner to safely operate the equipment. No exceptions to the requirements of these codes and standards will be allowed; failure to meet these requirements will be cause to remove the equipment and correct the violation.

## 27.3 U.L. Listing

All service entrance, power distribution, control and starting equipment panels shall be constructed and installed in strict accordance with Underwriter's Laboratories (UL) Standard 508A "Industrial Control Equipment." The UL label shall also include an SE "Service Entrance" rating stating that the main distribution panel is suitable for use as service entrance equipment. The panels shall be shop inspected by UL, or constructed in a UL recognized facility. All panels shall bear a serialized UL label indicating acceptance under Standard 508A and under Enclosed Industrial Control Panel or Service Equipment Panel.

A photocopy of the UL labels for this specific project shall be transmitted to both the project engineer and the contractor for installation within their permanent project files, prior to shipment of the equipment covered under these specifications.

## 27.4 E.T.L. Listing

All control panels shall be E.T.L. Listed by Interek Testing Services (ITS) under the Industrial Control Panel (ICP) Category. Each completed control panel shall bear an ETL listing label stating that the panel conforms to UL STD 508A and is certified to CAN/CSA STD C22.2 NO. 14. The listing label shall include the station manufacturer's name, address and telephone number. The station manufacturer shall have quarterly inspections performed by ETL at the manufacturer's facility to ensure that the products being listed comply with the report and procedural guide for that product.

## 27.5 Equipment Grounding

Each electrical equipment item in the station shall be properly grounded per Section 250 of the National Electrical Code. Items to be grounded include, but are not limited to, pump motor frames, control panel, transformer, convenience receptacles, dedicated receptacle for heater, air conditioner, dehumidifier, lights, light switch, exhaust fans and pressure switches.

All ground wires from installed equipment shall be in conduit and shall lead back to the control panel to a copper ground buss specific for grounding purposes and so labeled. The ground buss shall be complete with a lug large enough to accept the installing electrician's bare copper earth ground wire. The bus shall serve as a bond between the earth ground and the equipment ground wires.

## 27.6 Panel Mounting Hardware

In all cases, metal framing channel shall be used exclusively for hanging and mounting of all electrical panels and electrical components except for those specifically designated as floor mounted. The framing channel shall rest on the floor and be bolted in the walls.

## 27.7 Electrical Apparatus - Power Panel

All secondary circuit breakers shall be incorporated into one (1) separate NEMA I power panel. The electrical service provided for this station will be 240 volt, 1 phase, 60 cycle, 3 wire.

There shall be provided, thermal-magnetic trip circuit breakers as follows:

- One (1) 3-pole, 125 amp main breaker;
- Seven (7) Auxiliary Circuit Breakers, as follows:
  1. 1p, 15amp Controls
  2. 1p, 15amp Lights

3. 1p, 15amp Convenience Outlets
4. 1p, 15amp Dehumidifier
5. 2p, 30amp HVAC
6. Spare
7. Spare

#### 27.8 Electrical Apparatus - Surge Arrestor

A secondary surge arrestor shall be provided. Housing shall be Noryl and be ultrasonically sealed. Valve blocks shall be silicon carbide with an insulating ceramic collar. Gap design shall be annular. The lead wire shall be permanently crimped to the upper electrode forming part of the gap structure. Arrestors shall be UL and CSA listed Lightning Protective Devices.

#### 27.9 Electrical Apparatus – Pressure Transmitters

Pressure transmitters shall be supplied to measure inlet and outlet pressure. The transmitters shall sense gauge pressure and transmit a 4-20 mA dc signal to the interface panel (Coordinate with the instrumentation/SCADA contractor). The instruments shall measure pressure of a predetermined span. Range is to be fully adjustable throughout using allowable span and range limits. The accuracy shall be  $\pm 0.20\%$  of span.

Each transmitter shall provide an analog output and include a standard LCD with pushbuttons to provide Intelligent transmitter configuration directly from the on-board pushbuttons. The two-line digital indicator shall display the measurement in any selected units. The pushbuttons shall provide calibration of zero and span, setting of linear output, forward or reverse direction, external zero enable or disable, damping, failsafe action and local display including upper and lower range value selection.

All process-wetted parts of each instrument shall be Type 316L stainless steel. The transmitter shall be protected by a gasketed, weatherproof NEMA 4X enclosure. The transmitter shall be approved for use in hazardous locations (Nonincendive for Class 1 and Class II, Division 2 locations; intrinsically safe or explosion-proof for Class 1 and Class II, Division 1 locations).

The transmitter shall have 1/2 inch NPT female threaded tapping ports. Acceptable Gauge Pressure Transmitter manufacturer:

- A. Foxboro Series IGP10
- B. Rosemount 2088G2S22A1M7B4S5.

#### 27.10 Electrical Apparatus - High Water Alarm

The water alarm shall be a 120 volt AC circuit driven by a float switch wall-mounted within the equipment capsule/building. The float switch shall be of the magnetic float type with the float moving up and down a guide tube. One half (1/2) inch of float movement shall actuate the SPST reed type switch inside the guide tube. The alarm will be sealed in through an auxiliary relay and will be manually reset via a push button station.

#### 27.11 Electrical Apparatus – Intrusion Alarm

Unauthorized entry alarms on hatches and doors - The unauthorized entry alarm shall be a 120 volt AC circuit driven by a hatch/door-mounted limit switch. The limit switch shall be the adjustable arm, roller contactor type which makes an internal SPST micro switch. The switch will be so mounted as to active anytime the entrance man way hatch/door is opened

#### 27.12 Electrical Apparatus – Telemetry Control – Interface Panel

It will be the responsibility of the station manufacturer to provide the following as an adjunct to the supplied telemetry equipment.

1. 1" telemetry entrance conduit complete to telemetry panel.
2. Size 12" x 12" NEMA 1 telemetry interface panel.

3. Separate 120 volt single phase power circuit in conduit to the telemetry interface panel.
4. Telemetry control circuits made up and in conduit from main control panel to telemetry interface panel terminal strip.
5. Metal framing channel to mount telemetry equipment.

#### 27.13 RTU Panel Mounting

The station manufacturer shall accept, mount and do the interconnecting wiring of the Instrumentation Contractor supplied RTU panel. This will include providing metal framing channel upon which to mount the telemetry equipment. (This requirement assumes the RTU as a completed assembly is UL listed.)

#### 27.14 Conduit, Wiring, Receptacles and Lighting

All service entrance conduits power and signal, shall be rigid steel conduit, individually sized to accept the inbound service conductors and telemetry/telephone/radio cables. These service entrance conduits shall be installed from the main power or control panel through the capsule steel sidewall or the building floor and terminate exterior to the equipment enclosure as a thread hub. The service entrance exterior conduit connection points shall be capped or plugged for shipment.

All wiring within the equipment enclosure and outside of the panel enclosures shall be run in conduit except where watertight flexible conduit is properly used to connect pump drivers, fan motors, solenoid valves, limit switches, etc., where flexible connections are best utilized. Devices and appliances where furnished by the original manufacturer and being equipped with a UL approved rubber cord and plug, may be plugged into a receptacle.

**EQUIPMENT ENCLOSURE CONDUIT** - Rigid, heavy wall, Schedule 40 PVC with solvent weld moisture-proof connections adequately sized to handle the type, number and size of equipment conductors to be carried - in compliance with Article 347 of the National Electrical Code (NEC) and NEMA TC-2, Federal WC-1094A and UL-651 Underwriters Laboratories Specifications.

**FLEXIBLE CONNECTIONS** - Where flexible conduit connections are necessary, the conduit used shall be liquid-tight, flexible, totally nonmetallic, corrosion resistant, nonconductive, U.L. listed conduit sized to handle the type, number and size of equipment conductors to be carried - in compliance with Article 351 of the National Electrical Code.

**MOTOR CIRCUIT CONDUCTORS** - Sized for load. All branch circuit conductors supplying a single motor of one (1) horsepower or more shall have an ampacity of not less than 125 percent of the motor full load current rating, dual rated type THHN/THWN, as set forth in Article 310 and 430-B of the National Electrical Code, Schedule 310-13 for flame retardant, heat resistant thermoplastic, copper conductors in a nylon or equivalent outer covering.

**CONTROL AND ACCESSORY WIRING** - Sized for load, type MTW/AWM (Machine tool wire/appliance wiring material) as set forth in Article 310 and 670 of the National Electrical Code, Schedule 310-13 and NFPA Standard 79 for flame retardant, moisture, heat and oil resistant thermoplastic, copper conductors in compliance with NMTBA, as listed by Underwriters Laboratories (AWM), except where accessories are furnished with a manufacturer supplied UL approved rubber cord and plug.

**RECEPTACLES** - Two (2) duplex, ground fault circuit interrupter type receptacles shall be furnished about the periphery of the meter room, with one (1) receptacle adjacent to the main control panel.

**LIGHTING** - There shall be one or more two-tube, 32 watt per tube, rapid start, enclosed and gasketed, forty-eight (48) inch minimum length fluorescent light fixtures installed within the equipment enclosure, as shown on the plan for this item. One (1) light fixture shall be located directly over the main control panel. The light switch shall be of the nightglow type switch located conveniently adjacent to the door. Open fluorescent or incandescent fixtures **will not** be accepted. An exterior light shall be provided as located on the drawing. The light shall be 50 watt high pressure sodium. Housing shall be one piece, injection molded, bronze polycarbonate. A button type photo control shall be provided.

EMERGENCY LIGHT - The station shall include an emergency light unit. The unit shall be housed in a heavy-duty steel case with a front access panel. The unit shall be complete with a 12 volt, long life, maintenance-free sealed lead calcium battery, solid state charger, low voltage disconnect, red charge monitor LED, momentary test switch and dual, high intensity incandescent lamps. The unit shall operate on 120 volt, single-phase power source.

28.0 ENVIRONMENTAL

28.1 Convenience Group - Dehumidifier

1. One (1) each, installed as shown.
2. Capacity 30 pints per 24 hours.
3. Compressor rated 115 volts, 60 Hz, 4.3 operating amps.
4. 106 CFM fan, 2 fan speed.
5. Humidity range 35 to 80% RH, ambient temperature range of 41 to 95 F, Type R410A refrigerant.
6. Washable filter.
7. Condensate piped direct to drain.
8. UL listed rubber cord.

28.2 Convenience Group – Heating/Cooling/Exhaust Unit

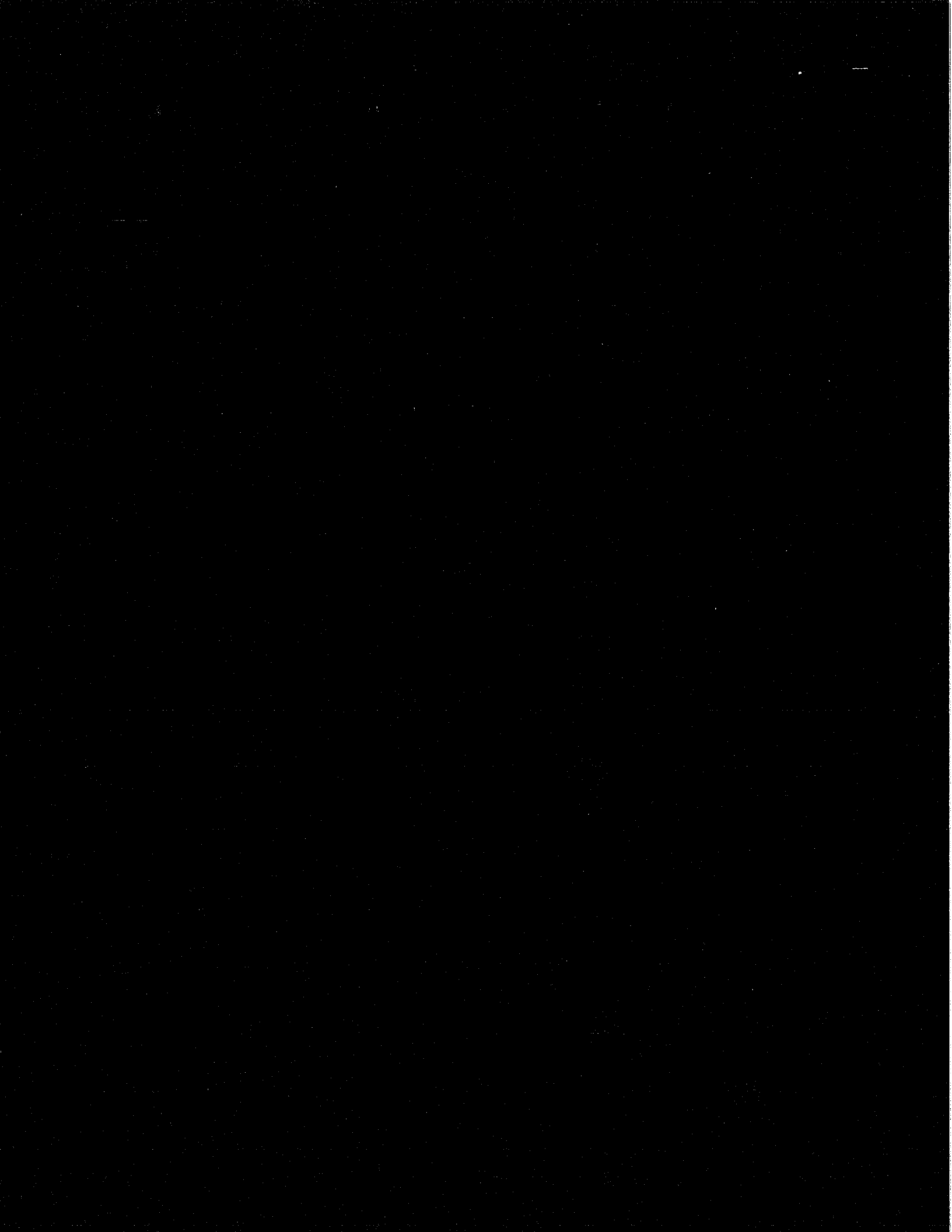
The unit shall be one-piece, wall-mounted, factory-assembled, pre-charged, prewired, tested and ready-to-operate. The unit shall have a limited warranty of 5-years on parts and 1-year on compressor. Capacity and EER certified in accordance with ANSI/ARI Standard390-2003.

1. One (1) each exterior wall mounted, hard-wired as shown;
2. Enclosed weatherproof casing constructed of 20 gauge galvanized steel, finished with baked-on polyester enamel paint;
3. One (1) washable filter;
4. Remote adjustable thermostat;
5. Refrigerant: 410A (HFC);
6. Minimum EER Rating: 9.00.

Cooling Capacity	BTUH	Breaker size	CFM @ 0.2" ESP, (Max/Min)	Heater	Bard Manufacturing Part Number
1.5 Ton	16,400	30	825/600	5 KW	W18A1-A05BW

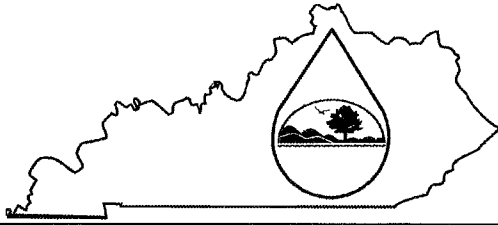
END OF SECTION 15-201





## 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**

<b>Name:</b>		<b>Phone:</b>	
<b>Address:</b>		<b>Status of Owner/Operator:</b>	
<b>City, State, Zip Code:</b>			

**II. Facility/Site Location Information**

<b>Name:</b>			
<b>Address:</b>			
<b>City, State, Zip Code:</b>			
<b>County:</b>			
<b>Site Latitude: (degrees/minutes/seconds)</b>		<b>Site Longitude: (degrees/minutes/seconds)</b>	

**III. Site Activity Information**

<b>MS4 Operator Name:</b>						
<b>Receiving Water Body:</b>						
<b>Are there existing quantitative data?</b>	Yes <input type="checkbox"/>	If Yes, submit with this form.				
	No <input type="checkbox"/>					
<b>SIC or Designated Activity Code Primary</b>		<b>2nd</b>		<b>3rd</b>		<b>4<sup>th</sup></b>
<b>If this facility is a member of a Group Application, enter Group Application Number:</b>						
<b>If you have other existing KPDES Permits, enter Permit Numbers:</b>						

**IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY**

<b>Project Start Date:</b>		<b>Completion Date:</b>	
<b>Estimated Area to be disturbed (in acres):</b>			
<b>Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?</b>	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.

<b>Printed or Typed Name:</b>		
<b>Signature:</b>	<b>Date:</b>	

**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

**AMERICAN IRON AND STEEL COMPLIANCE STATEMENT**

"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 parties are required to comply with these requirements and to ensure that all iron and steel products used on this project are produced in the United States. The term "iron and steel products" means the following products made of primarily 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."

\_\_\_\_\_  
**RD Specialist Signature**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
**Borrower Signature or Approved Representative**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
**Engineer's Signature**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
**Contractor's Signature**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

**ENGINEER'S CERTIFICATION LETTER**

DATE:

RE: APPLICANT  
PROJECT NAME  
CONTRACT NUMBER

I hereby certify that to the best of my knowledge and belief, iron and steel products referenced in the Plans, Specifications, and Bidding Documents for this project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 and any subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee. This certification is not intended to be a warranty in any way, but rather the designer's professional opinion that to the best of their knowledge, the products comply.

I hereby commit that to the best of my ability, all iron and steel products that will be referenced in the Bid Addenda, Executed contracts, and Change Orders will comply with Section 746 of the Title VII of the Consolidated Appropriations Act, 2017 and any subsequent statutes mandating domestic preference or are/will be the subject of a waiver approved by the Secretary of Agriculture or designee.

\_\_\_\_\_  
Name of Engineering Firm (Print)

\_\_\_\_\_  
By Authorized Representative (Signature)

\_\_\_\_\_  
Title

This document is to be submitted prior to Agency authorization for Advertisement for Bids.

**CONTRACTOR'S CERTIFICATION LETTER**

DATE:

**RE: APPLICANT  
PROJECT NAME  
CONTRACT NUMBER**

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

\_\_\_\_\_  
Name of Construction Company (Print)

\_\_\_\_\_  
By Authorized Representative (Signature)

\_\_\_\_\_  
Title

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



**MANUFACTURER'S CERTIFICATION LETTER**

Date:

Company Name:

Company Address:

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

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

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

- 1.
- 2.
- 3.

Such process for AIS took place in the following location:

\_\_\_\_\_  
City, State

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

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

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

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

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

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

**EXAMPLES OF CONSTRUCTION MATERIALS (included but not limited to)**

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

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

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

Pumps

Motors

Gear Reducers

Drives (including variable frequency drives (VFD's))

Electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators).

Mixers

Gates (e.g. sluice and slide gates)

Motorized screens (such as traveling screens)

Blowers/aeration equipment

Compressors

Meters (flow and water meters)

Sensors

Controls and switches

Supervisory control data acquisition (SCADA)

Membrane filtration systems (includes RO package plants)

Filters

Clarifier arms and clarifier mechanisms

Rakes

Grinders

Disinfection systems

Presses (including belt presses)

Conveyors

Cranes

HVAC (excluding network)

Water heaters

Heat exchangers

Generators

Cabinetry and housing (such as electrical boxes/enclosures)

Lighting fixtures

Electrical conduit

Emergency life systems

Metal office furniture

Shelving

Laboratory equipment

Analytical instrumentation

Dewatering equipment

**INFORMATIONAL CHECKLIST FOR PROJECT SPECIFIC WAIVER REQUEST**

Please reference the specifications of the product.

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

EXAMPLE COST TABLE FOR A PROJECT COST WAIVER

AIS/Non-AIS Cost Comparison Table							
Specification	Item or Description	Quantity	Unit	Unit Price	Cost if applying AIS	Cost if a waiver to AIS is applied	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	

TOTAL COST:

\$0.00

\$0.00



## APPENDIX 3





MATTHEW G. BEVIN  
GOVERNOR

CHARLES G. SNAVELY  
SECRETARY

**ENERGY AND ENVIRONMENT CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601

September 19, 2018

Mr. John Haley  
Todd Co Water District  
617 W Main St  
Elkton, KY 42220

RE: Novelis Water Supply Project WLE &  
Meter Station  
Todd County, KY  
Todd Co Water District  
AI #: 34111, APE20180001  
PWSID #: 1100944-18-001

Dear Mr. Haley:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 11,830 LF of 12-inch DIP waterline. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit.

If you have any questions concerning this project, please contact Mr. Mortaza Tabayeh at 502-782-7086.

Sincerely,

Terry Humphries, P.E.  
Supervisor, Engineering Section  
Water Infrastructure Branch  
Division of Water

TH: MT  
Enclosures

C: McGhee Engineering Inc.  
Todd County Health Department  
Division of Plumbing



## Distribution-Major Construction

Todd Co Water District

Facility Requirements

Activity ID No.:APE20180001

Page 1 of 4

### PORT0000000040 (Novelis Water Supply Project WLE) 11830 LF of 12-inch DIP:

#### Narrative Requirements:

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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-Major Construction

Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180001

Page 2 of 4

### PORT0000000040 (Novelis Water Supply Project WLE) 11830 LF of 12-inch DIP:

#### Narrative Requirements:

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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-Major Construction**  
Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180001

**PORT000000040 (Novelis Water Supply Project WLE) 11830 LF of 12-inch DIP:**

**Narrative Requirements:**

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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-Major Construction

Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180001

Page 4 of 4

### PORT000000040 (Novelis Water Supply Project WLE) 11830 LF of 12-inch DIP:

#### 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]



**TODD COUNTY JUDGE EXECUTIVE**  
**TODD MANSFIELD**  
P.O. Box 355 | 202 East Washington Street | Ellettsville, KY 42220  
270-265-9966 x 221 | Office | 270-265-3613 | Fax  
toddco.judgeexecutive@gmail.com



September 18, 2018

Chris Wilcutt  
McGhee Engineering, Inc.  
P.O. Box 267  
Guthrie, KY 42234

Re: Novelis Water Supply Project-Water Line Extensions County Road Cross

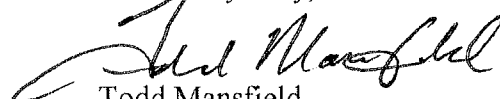
Dear Mr. Wilcutt:

Thank you for your letter of September 10 regarding the above matter. Please be advised this letter grants the Todd County Water District's request to encroach onto county right-of-way as follows:

1. 40 LF Road bore of Nelson Road: Sheet P-3
2. ~ 500 LF parallel encroachment of Old Railroad Lane (current and proposed portions) Sheet P-5

In the event you need further information, or the county can be of further assistance in facilitating the Water District's needs associated with this project, please contact me.

Yours very truly,

  
Todd Mansfield  
Todd County Judge Executive

TM/bsg

cc: Mr. John Haley, Todd County Water District  
Hon. Harold M. Johns



Kentucky Transportation Cabinet  
 Department of Highways  
 Division of Maintenance  
 Permits Branch

TC 99-1 (B)  
 07/2018  
 Page 1 of 1

**ENCROACHMENT PERMIT**

**KYTC KEPT #:** 03-2018-00268  
**Permittee:** Todd Co Water District  
**Permit Type / Subtype:** Utilities / Water  
**Work Completion Date:** 9/30/2019

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**

Sarah Payton D3 Permits - Supervisor 9/20/2018  
**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
Water	Todd - US 79	36.659175	-87.173112



To Submit a Locate Request  
 24 Hours a Day, Seven Days a Week:  
 Call 811 or 800-752-6007



Kentucky Transportation Cabinet  
 Department of Highways  
 Permits Branch

TC 99-1 (A)  
 8/2012  
 Page 1 of 4


APPLICATION FOR ENCROACHMENT PERMIT

<b>Permittee Information</b>				KYTC No. <b>103-2018-00268</b>			
Name	Todd County Water District			<b>Permit Information</b>			
Address	PO Box 520			Address	Russellville Road		
City	Elkton			City	Guthrie		
State	KY	Zip	42220	State	KY	Zip	42234
Phone#	270-265-2229			County	Todd		
Contact	John Haley			Route No.	US79	Mile Point	Varies
Phone	270-265-2229	Cell		Longitude (X)	-87.173432°	2.1 x 2.5 -87.173112 36.659175 JBS	
Email	jqhaley@hotmail.com			Latitude (Y)	36.658718°		
Contact	Chris Wilcutt			<i>Information below to be filled out by KYTC</i>			
Phone	270-426-9143	Cell		<input type="checkbox"/> Air Right	<input type="checkbox"/> Entrance		
Email	chris.wilcutt@mcgheeengineering.com			<input checked="" type="checkbox"/> Utilities	<input type="checkbox"/> Other: _____		
				<i>Water</i>			
				<input type="checkbox"/> Left	<input checked="" type="checkbox"/> Right	<input checked="" type="checkbox"/> X-ing	
				Access:	<input type="checkbox"/> Full	<input type="checkbox"/> Partial	<input checked="" type="checkbox"/> by Permit

General Description of Work:

The Todd County Water District plans to extend water service approximately 10,800 LF as part of their Novelis Water Supply Project. Also, the District plans to relocate approximately 1,030 LF of waterline to accommodate KYTC's proposed re-alignment of the US Highway 79 & Old Railroad Lane intersection. This Permit Form entails the District's plan to encroach nearly 1,400 LF thru state right-of-way (US HIGHWAY 79) with ~160 LF of road bores (24" steel casing; 12" DIP carrier) and approximately 1,200 LF of parallel encroachment. A copy of the plans for the proposed encroachment locations are attached to this application.

THE UNDERSIGNED PERMITTEE(s) (being duly authorized representative(s) or owner(s)) DO AGREE TO ALL TERMS AND CONDITIONS ON THE TC 99-1 (A).

  
 Signature

9-11-18  
 Date

This is not a permit unless and until the permittee(s) receives an approved TC 99-1(B) from KYTC. This application will become void if not approved by the cancellation date. The cancellation date will be one year from the date the permittee 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 will be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
  - C. **LIABILITY INSURANCE:** Liability insurance will 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 will 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 agrees 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, and/or 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, and/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



**APPLICATION FOR ENCROACHMENT PERMIT**

installation(s) shall be borne by the permittee, its successors and assigns, and/or 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.

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, agrees 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 may and 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



### APPLICATION FOR ENCROACHMENT PERMIT

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.

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, agrees 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.



MATTHEW G. BEVIN  
GOVERNOR

CHARLES G. SNAVELY  
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: **Todd Co Water District**  
Address: **PO Box 520**  
**Elkton, KY 42220**

Permit expires on  
**September 27, 2019**

Permit No. **28231P**

AI: **34111**

In accordance with KRS 151.250 and KRS 151.260, the Energy and Environment Cabinet approves the application dated **September 17, 2018** for **subfluvial crossings by 'open cut' method of 12-inch water lines at two locations in conjunction with 1000 feet of relocation and 11,000 feet of line extension along US-79, across the floodplain of Spring Creek Tributary #6, a tributary of Brown Branch of Spring Creek, at coordinates 36.664340, -87.169622 and 36.661248, -87.170503, near Guthrie in Todd 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 is not valid unless actual construction of this authorized work is begun prior to the expiration date noted above. 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 call Kourosh Namin at 502-782-7025.

**Issued September 27, 2018.**

**Ron Dutta, P.E., Supervisor**  
Floodplain Management Section  
Surface Water Permit Branch  
Division of Water

RD/KN/rd

pc: Madisonville Regional Office  
A Scott Marshall – Todd County Floodplain Coordinator  
Chris Wilcutt, P.E., McGhee Engineering  
File



# FINAL CONSTRUCTION REPORT

NAME: Todd Co Water District

PERMIT NO: 28231P

AI NO: 34111 Activity ID: APE20180002

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.

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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

Todd Co Water District

Facility Requirements

Permit Number: 28231P

Activity ID No.:APE20180002

Page 1 of 3

**STRC0000000013 (AI: 34111 - Water Line) Subfluvial crossings by 'open cut' method of 12-inch water lines at two locations in conjunction with 1000 feet of relocation and 11,000 feet of line extension along US-79, across the floodplain of Spring Creek Tributary #6, a tributary of Brown Branch of Spring Creek, at coordinates 36.664340, -87.169622 and 36.661248, -87.170503, near Guthrie in Todd County.:**

### Submittal/Action Requirements:

---

Condition No.	Condition
S-1	Todd County Water District must submit final construction report within 90 days after completion of construction. (Engineer or Company)^ must ( certify, 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 Todd County Water District 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 Todd County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Todd County Water District 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

Todd Co Water District

Facility Requirements

Permit Number: 28231P

Activity ID No.:APE20180002

Page 2 of 3

**STRC0000000013 (AI: 34111 - Water Line) Subfluvial crossings by 'open cut' method of 12-inch water lines at two locations in conjunction with 1000 feet of relocation and 11,000 feet of line extension along US-79, across the floodplain of Spring Creek Tributary #6, a tributary of Brown Branch of Spring Creek, at coordinates 36.664340, -87.169622 and 36.661248, -87.170503, near Guthrie in Todd 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	Stream bank restoration and stabilization shall be limited to that necessary to restore the stream bank as closely as possible to its original location and configuration, and shall be completed without compromising the conveyance capacity of the stream at any time. [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]

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**Stream Construction Permit**

Todd Co Water District

Facility Requirements

Permit Number: 28231P

Activity ID No.:APE20180002

**STRC0000000013 (AI: 34111 - Water Line) Subfluvial crossings by 'open cut' method of 12-inch water lines at two locations in conjunction with 1000 feet of relocation and 11,000 feet of line extension along US-79, across the floodplain of Spring Creek Tributary #6, a tributary of Brown Branch of Spring Creek, at coordinates 36.664340, -87.169622 and 36.661248, -87.170503, near Guthrie in Todd County.:**

**Narrative Requirements:**

---

Condition	Condition
T-16	The 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  
NASHVILLE DISTRICT, CORPS OF ENGINEERS  
Regulatory Division  
3701 Bell Road  
NASHVILLE, TENNESSEE 37214

SEP 24 2018

SUBJECT: File No. LRN-2018-00745; Proposed Utility Line Crossing an Unnamed Tributary of Spring Creek, Todd County, Kentucky

Todd County Water District  
C/O Mr. John Haley  
PO Box 520  
Elkton, Kentucky 42220

Dear Mr. Haley:

This correspondence is in regard to the pre-construction notification (PCN) for the discharge of dredged or fill material associated with the proposed utility line crossing. The proposed discharge of fill material is a water line crossing. The project is located along an Unnamed Tributary of Spring Creek, Todd County, Kentucky (Latitude: 36.6600; Longitude: -87.1722). This project has been assigned number LRN-2018-00745. Please refer to this number in all communication concerning this matter.

Based on the information you provided, Nationwide Permit (NWP) #12 Utility Line Crossing, which became effective March 19, 2017 [82 FR 1860], authorizes your proposal as depicted on the enclosed plans. In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP #12 Terms and Conditions*, and the *2017 Nationwide Permit General Conditions*. The work must also comply with the special conditions listed in the enclosed "SPECIAL CONDITIONS FOR PERMIT LRN-2018-00745, Todd County Water District."

This verification is valid until March 18, 2022, unless the NWP authorization is modified, suspended, or revoked prior to that date. Furthermore, if you commence or are under contract to commence this activity before the date of NWP expiration, modification, or revocation, you will have 12 months from the date of expiration, modification or revocation to complete the activity under the present terms and conditions of the NWP. This will apply to all NWPs unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d).

The NWP 12 verification does not obviate your responsibility to obtain and abide by all other federal, state and local permits or approvals required. The NWP verification should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. In addition, it does not grant any property rights or exclusive privileges and does not authorize any injury to the property or rights of others. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation during the permitting process. If you have any questions, please contact me at the above address or telephone (615) 369-7503 or via e-mail mark.carnes@usace.army.mil.

Sincerely,



Floyd M. Carnes  
Regulatory Specialist  
Regulatory Division

Enclosures

- Enclosure 1 – Special Conditions
- Enclosure 2 – Drawings (Sheets 1-4)
- Enclosure 3 – NWP 12, Terms and Conditions
- Enclosure 4 – 2017 Nationwide Permit General Conditions
- Enclosure 5 – Compliance Certification
- Enclosure 6 – Water Quality Certification

Copy Furnished:

Kentucky Division of Water  
Water Quality Certification Section - Electronically

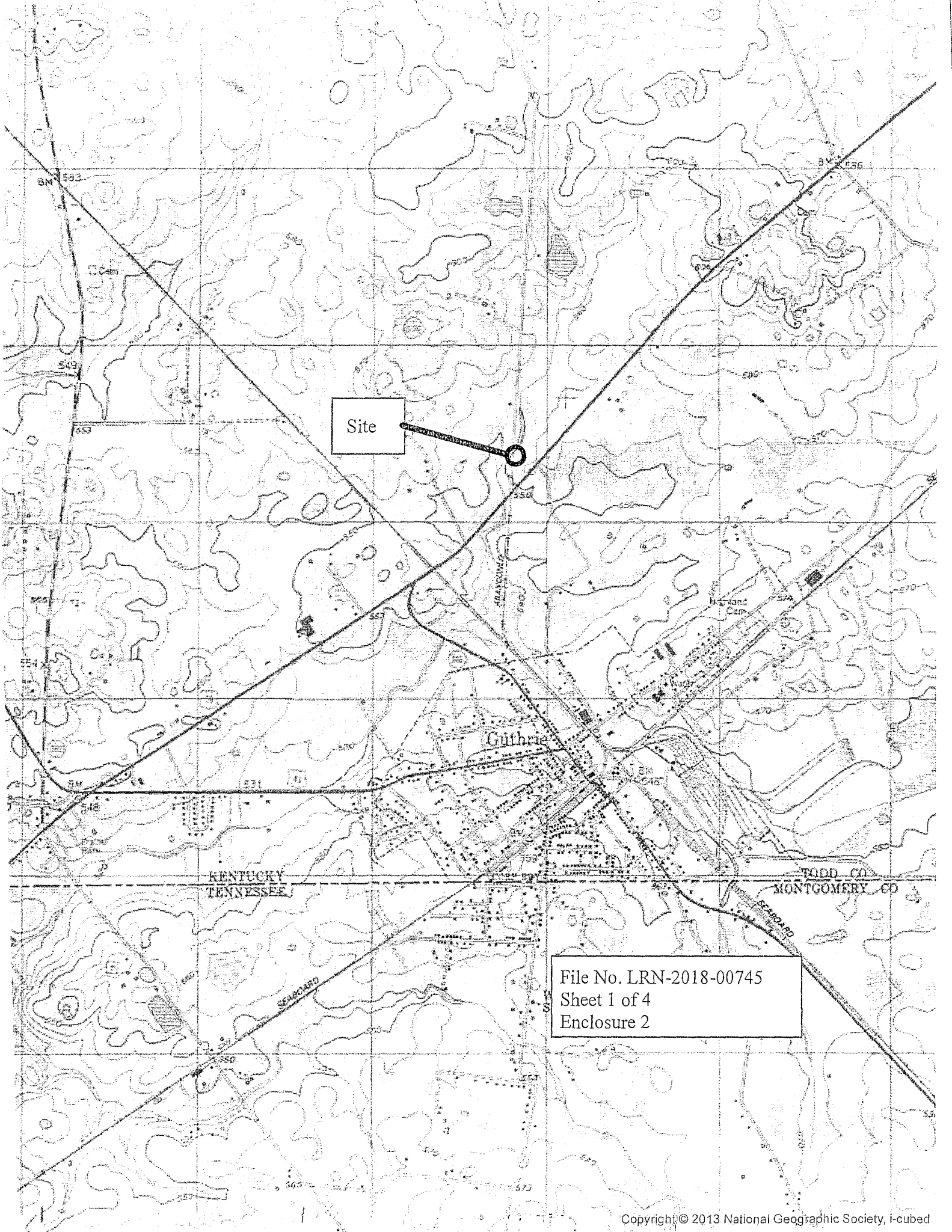


US Army Corps  
of Engineers @  
Nashville District

## SPECIAL CONDITIONS

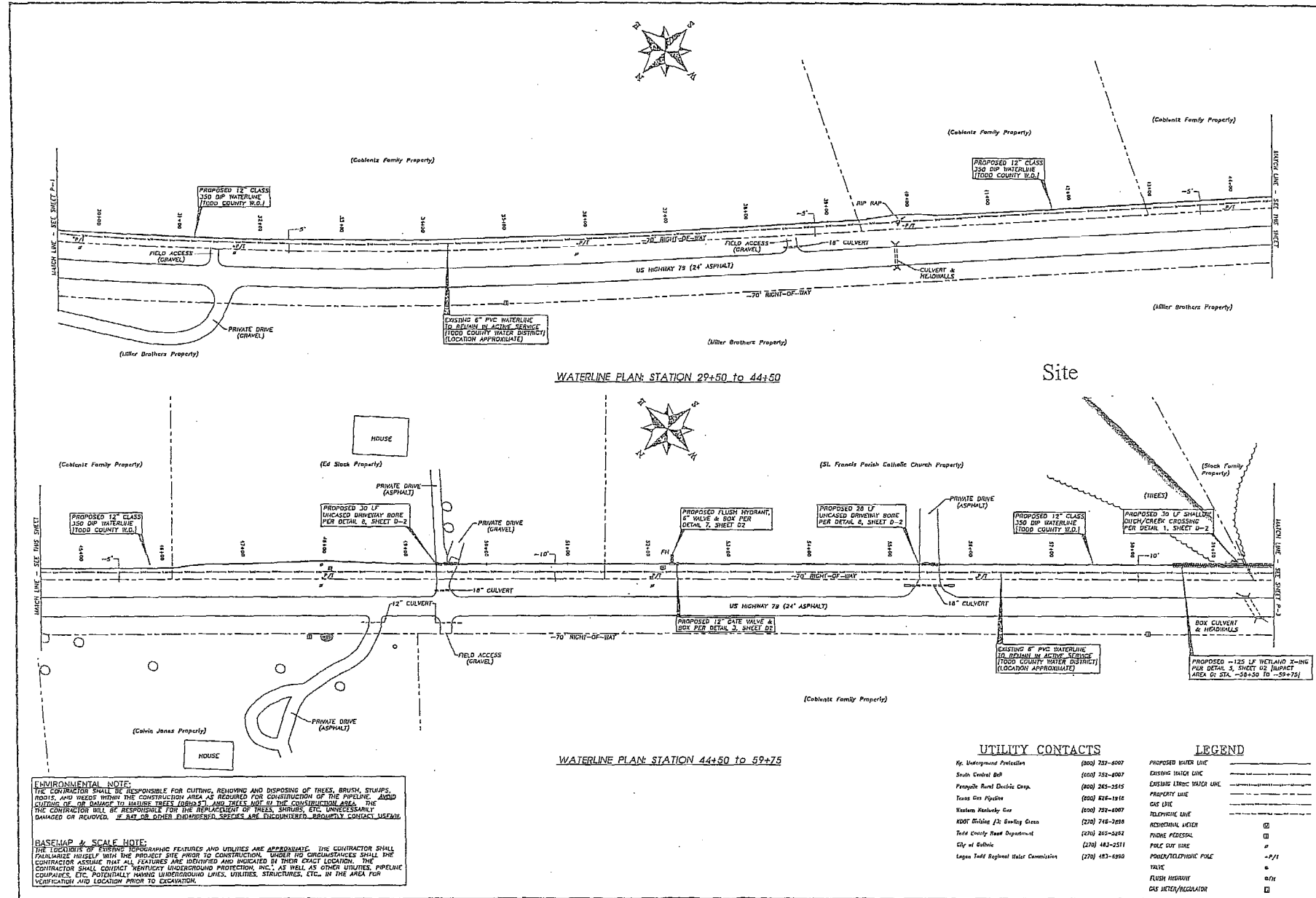
### PERMIT LRN-2018-00745 Todd County Water District

- 1. Permit Drawings:** The Permittee shall construct the authorized activity in accordance with the attached permit drawings (Enclosure 2, Sheets 1-4). Work in waters of the U.S. that deviates from the approved plans shall NOT occur without first obtaining approval from the U.S. Army Corps of Engineer, Nashville District Regulatory Division
- 2. Water Quality Certification:** The Permittee must comply with all conditions of the state permit. The Commonwealth of Kentucky has issued a conditional 401 water quality certification for the NWP. Consequently, the proposed work must also be constructed in accordance with the enclosed 401 certification. The Permittee must comply with all conditions of the state permit.
- 3. Tree Removal:** In accordance with the information provided, no trees would be removed associated with this project. If project plans are modified to include any tree removal, you shall notify this office so we can ensure appropriate ESA coordination with the US Fish and Wildlife Service occurs.



Site

File No. LRN-2018-00745  
Sheet 1 of 4  
Enclosure 2



WATERLINE PLAN STATION 29+50 to 44+50

WATERLINE PLAN STATION 44+50 to 59+75

**ENVIRONMENTAL NOTE:**  
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, REMOVING AND DISPOSING OF TREES, BRUSH, STUMPS, HOLES, AND WEEDS WITHIN THE CONSTRUCTION AREA AS REQUIRED FOR CONSTRUCTION OF THE PIPELINE. **AND CUTTING OF OR DAMAGE TO HAZARD TREES (ORIENT) AND TREES NOT OF THE CONSTRUCTION AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR/REPLACEMENT OF TREES, SHRUBS, ETC. UNLESS/WHEN DAMAGED OR REMOVED. IF ANY OTHER ENGINEERED SPECIES ARE ENCOUNTERED, IMMEDIATELY CONTACT USFWA.**

**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 REMITTENT 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**

Nx Underground Protection	(800) 729-6007
South Central Bell	(800) 728-6007
Proxyside Rural Electric Coop.	(800) 265-2515
Texas Gas Pipeline	(800) 826-1918
Western Railway Co.	(800) 752-8507
HOOT Building 1/2 Bowling Green	(278) 718-7959
Todd County Road Department	(278) 265-5682
City of Galtus	(278) 482-2511
Louisiana Todd Regional Water Commission	(278) 482-6950

**LEGEND**

PROPOSED WATER LINE	—————
EXISTING WATER LINE	—————
EXISTING 18" WATER LINE	—————
PROPERTY LINE	—————
GAS LINE	—————
TELEPHONE LINE	—————
ARCHAEOLOGICAL MONITOR	□
PHONE PEDESTAL	□
POLE TOP TIRE	□
POWER/TELEPHONE POLE	□
FLASH	□
FLASH HYDRANT	□
GAS METER/REGULATOR	□

DATE: 08/14/2018  
 TIME: 10:11:11 AM  
 USER: JLR  
 PROJECT: 181000000

**TODD COUNTY**  
 WATER DISTRICT

**MCCGHEE**  
 ENGINEER

202 Ewing Street  
 Galtus, TX 75643  
 (278) 265-2520  
 (278) 265-2525

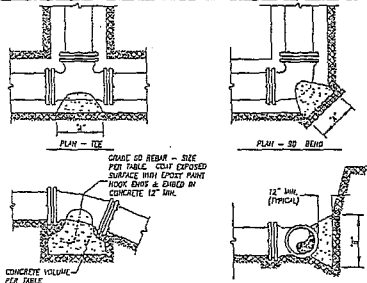
Todd County Water District  
 Novelis Water Supply Project  
 Contract 1 - Water Line & Meter Station  
 U.S. Highway 79  
 Water Line Plan

**Quality On Tap!**

August 16, 2018

DRAWING NO.  
 SHEET P-2

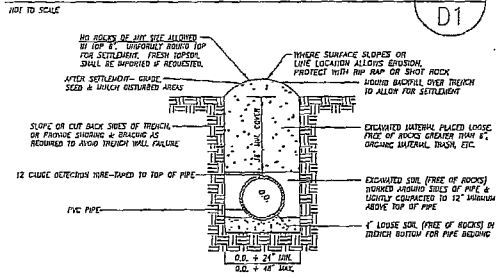
File No LRN-2018-00745  
 Sheet 2 of 4  
 Enclosure 2



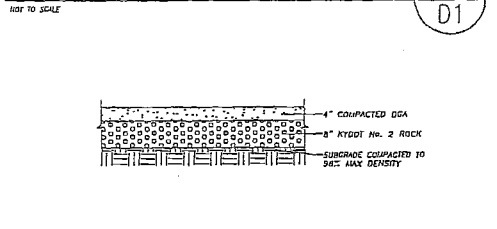
PIPE SIZE	SURROUNDING BEARING AREA (A <sub>b</sub> ) OF SQUARE FEET					PIPE WALL THICKNESS	VALVES	WALKER PILES
	15" BORED	22 1/2" BORED	11 1/4" BORED	ALL TYPES	ALL TYPES			
21", 24" & 30"	1.0	1.5	1.0	1.0	1.0	2	1.5	11
36"	2.5	3.0	2.0	1.0	1.0	3	3	14
42"	1.0	5.5	3.0	1.5	1.0	3	5	15
48"	6.0	8.5	4.5	2.5	1.5	12	3	15
72"	6.5	12.0	6.5	3.0	2.0	18	12	2-1/2
108"	15.0	21.5	11.5	6.0	3.0	22	21	2-1/2

- NOTES:**
- CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
  - KEEP CONCRETE CLEAR OF JOINTS, GLAND BELLS, ETC.
  - CONCRETE THRUST BLOCKS SHALL BE CAST AGAINST SOUND, UNDISTURBED EARTH.
  - WORKING AREAS ARE BASED ON 4,000 P.S.F. SOIL BEARING CAPACITY. REDUCE LOADS WHERE LOWER BEARING CAPACITY IS ENCOUNTERED.
  - THRUST BLOCK BEARING AREAS MAY BE REDUCED IN ROCK SUBJECT TO ENGINEER'S APPROVAL.
  - VALVES REQUIRE DUE REBAR STRAP AS SHOWN IN THE TABLE IN EACH END OF THE VALVE.
  - WHERE CONSTRUCTION CONDITIONS MAKE USUALLY BEARING CONDITIONS EXIST, HEAVY ENGINTEER FROM TO DESIGN THRUST BLOCKS.

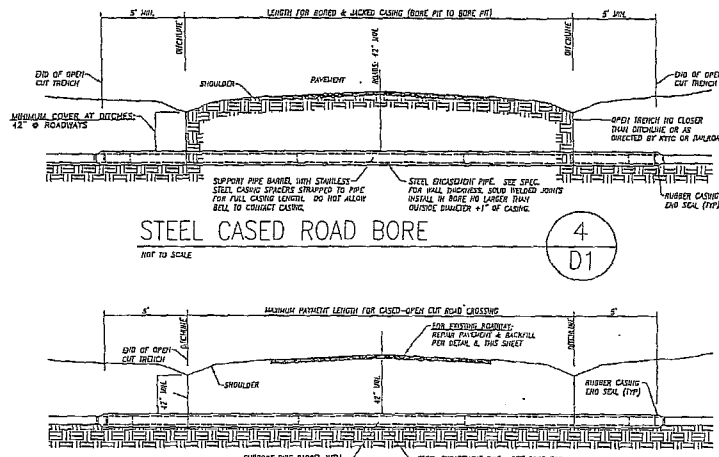
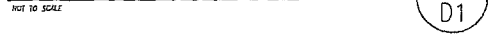
**CONCRETE THRUST BLOCKS**



**PVC PIPE (IF NEEDED) BEDDING & BACKFILL - SOIL**

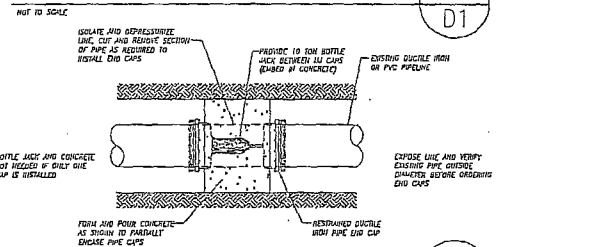


**ACCESS ROAD DETAIL**

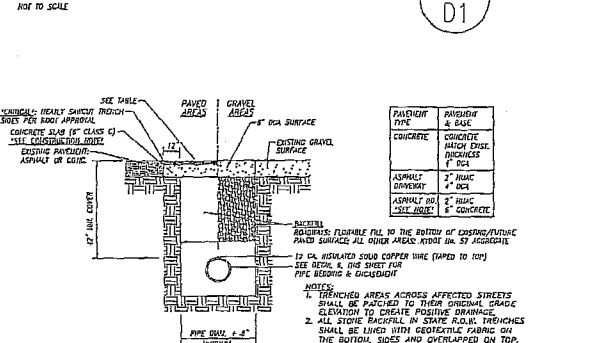


**STEEL CASED ROAD BORE**

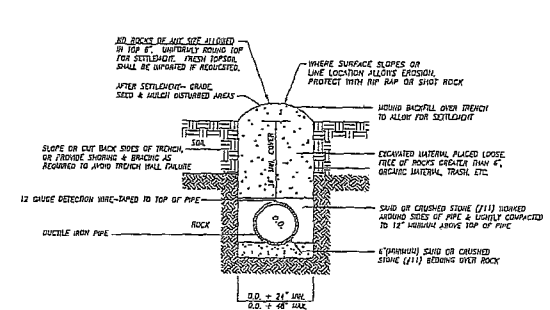
**CASED-OPEN CUT ROAD CROSSING**



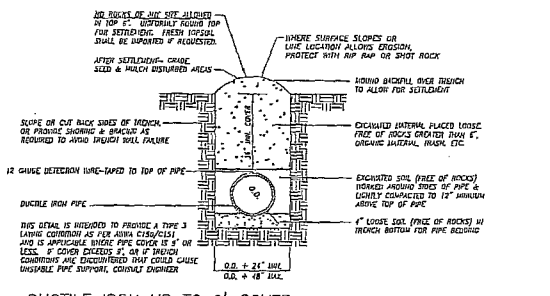
**CUT & PLUG EXISTING LINE DETAIL**



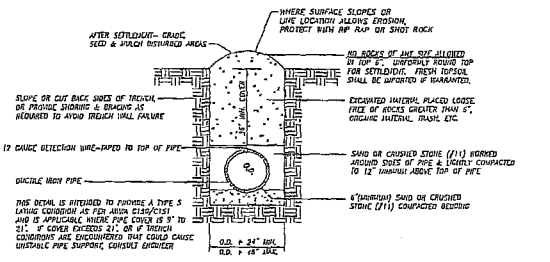
**PAVEMENT BACKFILL & REPAIR**



**DUCTILE IRON PIPE - ALL DEPTHS BEDDING & BACKFILL - ROCK**



**DUCTILE IRON UP TO 9' COVER BEDDING & BACKFILL - SOIL**



**DUCTILE IRON 9' - 21' COVER & RESTRAINED JOINT PIPE AREAS BEDDING & BACKFILL - SOIL**



REVISIONS

NO.	DATE	DESCRIPTION

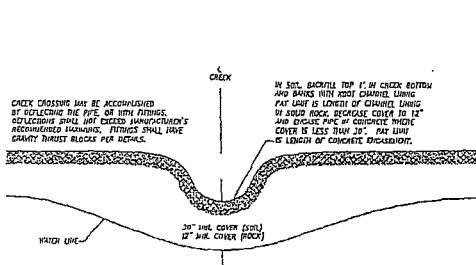
TODD COUNTY  
 PROJECT NO. 2018-001  
 PROJECT DATE: 2018  
 PRINTED: 10/26/2018  
 LENGTH OF BASIS: 1" ON ORIGINAL DRAWING

McGHEE Engineering, Inc.  
 DBE BY: CWW    CHK BY: MVM  
 DWM BY: CWW    APP BY: J  
 PROJECT NO. 2018-001  
 PRINTED: 10/26/2018  
 LENGTH OF BASIS: 1" ON ORIGINAL DRAWING

Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 Water Line Details

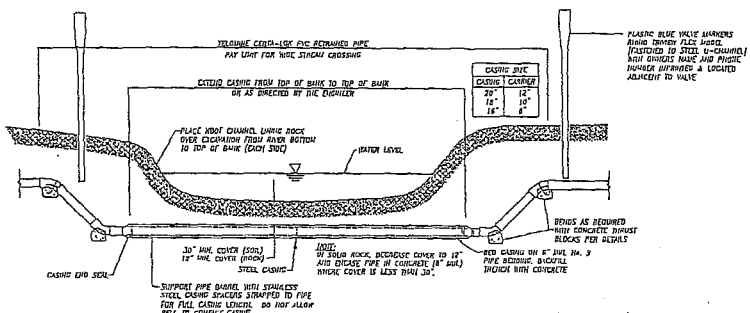
Quality Control  
 APPROVED: [Signature]  
 DATE: 10/26/2018

DRAWING NO. [Blank]  
 SHEET D-1

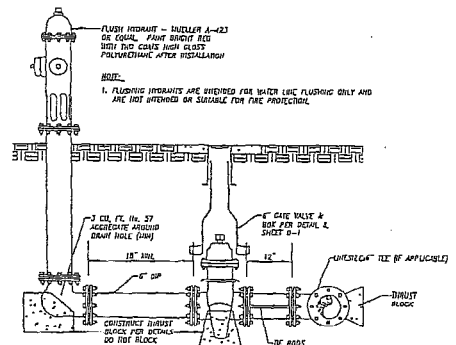


WHERE ENCASED IN CONCRETE (L.F. ROCK) PROVIDE 30% MIN. PIPE COVER PIPE. 2\"/>

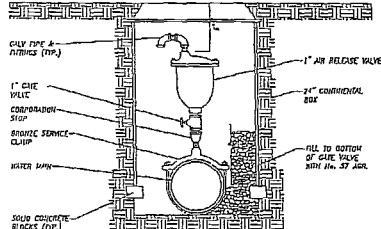
**SHALLOW DITCH/CREEK X-ING** 1  
D2



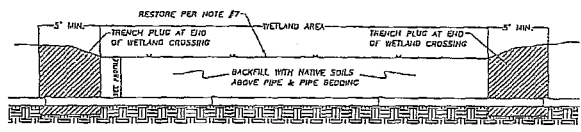
**WIDE STREAM CROSSING DETAIL** 4  
D2



**FLUSHING HYDRANT DETAIL** 7  
D2



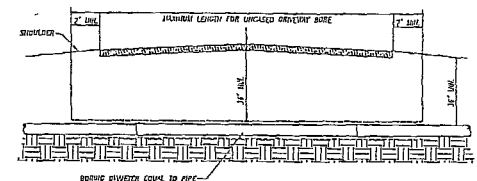
**AIR RELEASE VALVE DETAIL** 2  
D2



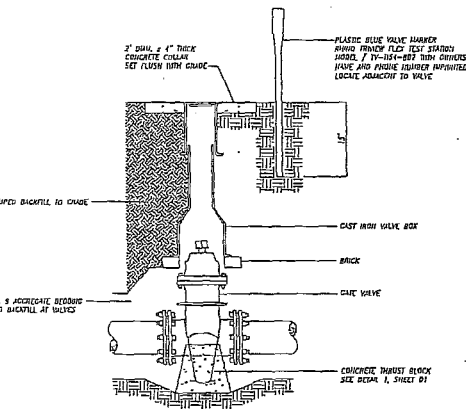
**GENERAL NOTES**

- TRENCH PLUG SHALL CONSIST OF CLAY CONTAINING NO MORE THAN 1% STONE, NOT LARGER THAN 20 GIL. CLAY SHALL BE PLACED IN 4\"/>
- TRENCH PLUGS SHALL BE INSTALLED AT ENDS OF ALL WETLANDS TO PREVENT TRENCH FROM DRAINING AREA.
- TRENCH WIDTH AND DISTURBANCE SHALL BE KEPT TO A MINIMUM. RESTORE ORIGINAL GRADES THRU WETLANDS.
- PROTECT AND PRESERVE VEGETATION TO THE MAXIMUM EXTENT POSSIBLE - WEDGING OF FILL MATERIAL TO ALLOW FOR SETTLEMENT IN TRENCH IS PERMITTED.
- MINIMIZE EROSION & PRECLUDE ITS ENTERING WETLAND AREA.

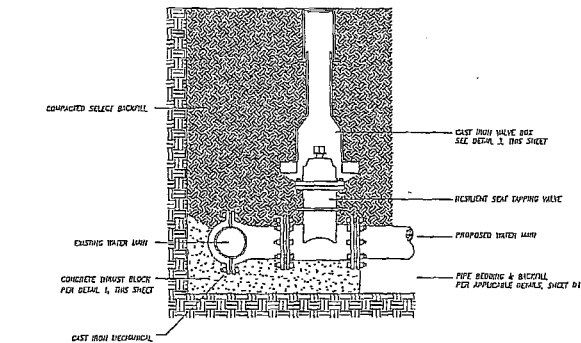
**WETLAND CROSSING X-SECTION** 5  
D2



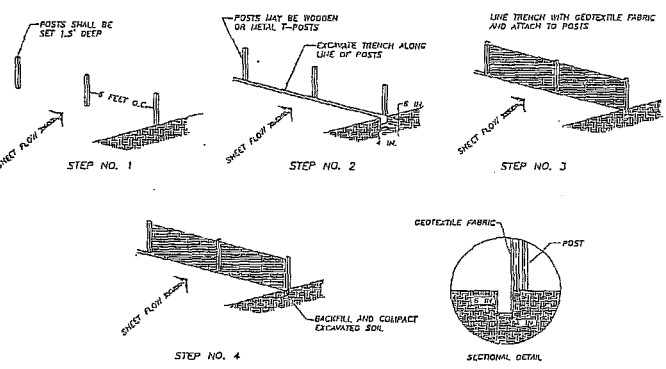
**UNCASED DRIVEWAY BORE DETAIL** 8  
D2



**VALVE SETTING DETAIL** 3  
D2



**TAPPING SLEEVE & VALVE** 6  
D2



**SILT FENCE DETAIL** 9  
D2

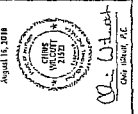
NO.	DATE	BY	CHKD.	REV.
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4	11/14/18	MMW	MMW	4
5	11/14/18	MMW	MMW	5
6	11/14/18	MMW	MMW	6
7	11/14/18	MMW	MMW	7
8	11/14/18	MMW	MMW	8
9	11/14/18	MMW	MMW	9

**McGHEE Todd County**  
Water Department  
P.O. Box 510  
Edinburg, KY 42320  
(770) 205-2229

FILE: McGhee Engineers, Inc.  
DESIGN: MMW  
SCALE: AS SHOWN  
PROJECT DATE: 2018  
PRINTED: LENGTH OF BARS 1\"/>

Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 1 - Water Line & Meter Station  
Water Line Details

**Quality**  
On Tap!



DRAWING NO.  
SHEET D-2





US Army Corps  
of Engineers ®  
Nashville District

# 2017 Nationwide Permit

82 FR 1860

## 12. Utility Line Activities.

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

*Utility lines:* This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of utility lines, including outfall and intake structures. There must be no change in pre-construction contours of waters of the United States. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

*Utility line substations:* This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

*Foundations for overhead utility line towers, poles, and anchors:* This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

*Access roads:* This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into nontidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the

road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

*Notification:* The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met:

- (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;
- (2) a section 10 permit is required;
- (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;
- (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area;
- (5) discharges that result in the loss of greater than 1/10- acre of waters of the United States;
- (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or
- (7) permanent access roads are constructed in waters of the United States with impervious materials.  
(See general condition 32.)

**(Authorities:** Sections 10 and 404)

**Note 1:** Where the utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

**Note 2:** For utility line activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Utility line activities must comply with 33 CFR 330.6(d).

**Note 3:** Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

**Note 4:** Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

**Note 5:** Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

**Note 6:** This NWP authorizes utility line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

**Note 7:** For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

**Note 8:** For NWP 12 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require preconstruction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

**Regional Conditions for the State of Tennessee:**

- a. PCN in accordance with NWP General Condition 32 is required for all proposed blasting within waters of the U.S.



US Army Corps  
of Engineers ®  
Nashville District

# 2017 Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

## State of Tennessee Regional General Conditions (Applicable to ALL Nationwide Permits):

1. A PCN is required for all proposed activities in *Exceptional Tennessee Waters* and/or *Outstanding National Resource Waters*. A list of known Exceptional Tennessee Waters and Outstanding National Resource Waters can be obtained from the Tennessee Department of Environment and Conservation's website: <https://tn.gov/environment/article/wr-water-resources-data-viewer>. A map of known Exceptional Tennessee Waters and Outstanding National Resource Waters can be obtained from the Tennessee Department of Environment and Conservation's website: <http://tdeconline.tn.gov/dwr/>.
2. All impacts to wetlands/open waters shall be calculated and reported in acres. Stream impacts shall be calculated separately and reported in both linear feet and acres.

## Additional Information

Endangered Species Act: Nationwide Permit General Condition 32, *Pre-Construction Notification*, requires a PCN to be submitted to the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat. To determine if any listed species, critical habitat, migratory birds or other natural resources may be impacted by your proposed project, please consult the U.S. Fish and Wildlife Services' IPAC website: <http://ecos.fws.gov/ipac>.

Historic Properties: Nationwide Permit General Condition 32, *Pre-Construction Notification*, requires a PCN to be submitted to the District Engineer 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. Information regarding cultural resources and the National Historic Preservation Act, can be reviewed at the National Park Service's website: <http://www.nps.gov/nri/>. A map of non-restricted listed properties on the National Register of Historic Places at can be viewed at: <https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466>

## National General Conditions:

### 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 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 NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

Enclosure 4

Enclosure 4

**9. Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

**10. Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

**11. Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

**12. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

**13. Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

**14. Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

**15. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

**16. Wild and Scenic Rivers.**

- (a) No 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. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.
- (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g.,

National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

**17. Tribal Rights.** No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

**18. Endangered Species.**

- (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.
- (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed 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. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (d) As a result of formal or informal consultation 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 their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

#### **20. Historic Properties.**

- (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
- (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed 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, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause 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. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and 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.
- (d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

**21. Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant 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 NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
- (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

- (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
- (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.
- (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse 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) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).
- (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on 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)).
  - (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.
  - (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (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 dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

**25. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

**26. Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

**27. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

**28. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

**29. Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer.

A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

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(Transferee)

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(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 permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

**32. Pre-Construction Notification.**

- (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. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:
- (1) Name, address and telephone numbers of the prospective permittee;
  - (2) Location of the proposed activity;
  - (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
  - (4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the 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, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
  - (6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
  - (7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that 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 activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

- (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.
- (d) Agency Coordination:
- (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the 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 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line 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 email, 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 email 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 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.

#### 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).



US Army Corps  
of Engineers @  
Nashville District

## COMPLIANCE CERTIFICATION

### YOU ARE REQUIRED TO SUBMIT THIS SIGNED CERTIFICATION REGARDING THE COMPLETED ACTIVITY AND ANY REQUIRED MITIGATION

I hereby certify that the work authorized by Permit No. LRN-2018-00745 and any required mitigation was done in accordance with the Corps authorization, including any general, regional, or special conditions.

---

Permittee Signature

---

Date

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative.

Submit this signed certification to the address below:

- U.S Army Corps of Engineers  
Regulatory Division  
3701 Bell Road  
Nashville, TN 37214-266  
Attn: Floyd M. Carnes
- East Regulatory Field Office  
501 Adesa Parkway  
Suite 250  
Lenoir City, TN 37771
- West Regulatory Field Office  
2042 Beltline Road, Southwest  
Building C, Suite 415  
Decatur, Al 35601



MATTHEW G. BEVIN  
GOVERNOR

CHARLES G. SNAVELY  
SECRETARY

ENERGY AND ENVIRONMENT CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

R. BRUCE SCOTT  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601

## General Certification--Nationwide Permit # 12 Utility Line Backfill and Bedding

This General Certification is issued March 19, 2017, 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 and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): 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.

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.

For all other operations, 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, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 12, namely Utility Line Backfill and Bedding, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.
2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.

General Certification--Nationwide Permit # 12

Utility Line Backfill and Bedding

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3. This general water quality certification is limited to the crossing of surface waters by utility lines. This document does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.
4. For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance.
5. 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 line project where the cumulative impacts exceed ½ acre of wetlands or 300 linear feet of surface waters. 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.
6. Stream impacts under Conditions 4 and 5 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.
7. Any crossings must be constructed in a manner that does not impede natural water flow.
8. Stream impacts covered under this General Water Quality 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 (KWQP).
9. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
10. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
11. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
12. Utility lines placed 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. The cabinet may allow construction within the 50 foot buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.

13. Utility line stream crossings shall be constructed by methods that maintain flow and allow for a 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.
14. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or wetlands or stream dimension, pattern or profile.
15. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. Mechanized land clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification.
16. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:
  - Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
  - Erosion and sedimentation pollution control plans and Best Management Practices 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.
  - 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 of the Commonwealth, 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.
  - Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
  - Removal of riparian vegetation shall be limited to that necessary for equipment access.
  - To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
  - Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., 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

General Certification--Nationwide Permit # 12

Utility Line Backfill and Bedding

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be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

- 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.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- 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.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

**WATER QUALITY GENERAL CERTIFICATION**  
**OF UTILITY LINE ACTIVITIES ALONG STREAMS**  
IN EFFECT: MARCH 19, 2017

Condition 12 of the March 19, 2017 Section 401 Water Quality Certification (WQC) of the U.S. Army Corps of Engineers' Nationwide Permit (NWP) # 12 Utility Line Backfill and Bedding states:

*Utility lines placed 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. The cabinet may allow for construction within the 50-ft buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.*

If a utility line project qualifies for a general certification of NWP 12 and is within 50 feet of the stream bank, a WQC application and a site-specific sediment and erosion control plan must be submitted for review by WQC before construction and construction-related activities can proceed. This is in addition to the Stormwater Pollution Prevention Plans for construction sites one (1) acre or more in size. Approval of the sediment and erosion control plan by the WQC Section is required before construction activities can begin.

**WHY SEDIMENT AND EROSION CONTROL PLANS AND PRACTICES?**

Construction activities near streams, rivers, and lakes have the potential to cause water pollution and stream degradation if erosion and sediment controls are not properly installed and maintained. In order to effectively reduce erosion and sedimentation impacts, plans and practices must be designed, located, installed, and maintained in effective operating condition at all times during land disturbing activities to prevent the discharge of sediment and other pollutants into waters of the Commonwealth. Sediment is a major contributor to the pollution of surface waters in Kentucky and construction activities are a major source of sediment and stream siltation. Disturbed soil, if not managed properly, can be washed off-site during storms and can cause major impairment in the receiving waters. Excessive silt causes adverse impacts such as disruption of aquatic organism life cycles, reduced passage, higher drinking water treatment costs for sediment removal, and the alteration of waters' physical/chemical properties, resulting in degradation of its quality. Therefore, erosion prevention and sediment control practices are the key parameter for successful water quality protection.

Applicants should design the site construction and development by selecting erosion prevention and sediment controls and practices to accommodate the unique hydrologic and geologic conditions of the site. Some of the factors to be considered include: local development requirements and/or codes, precipitation patterns for the area when the project will be underway, soil types, slopes, layout of structures for the site, sensitivity of nearby waters and natural areas, and safety concerns. A number of structural practices (e.g., mulching, vegetated buffer strips, grassed swales, retention/detention ponds, silt fence and hay bale barriers, stone check dams, inlet protection, infiltration practices) and non-structural practices (minimizing disturbance, good housekeeping) have shown to be efficient, cost effective, and versatile for construction site developers to implement.

**EROSION PREVENTION AND SEDIMENT CONTROL STRATEGIES**

Appropriate erosion prevention and sediment control measures and other stormwater management practices must be designed, installed, and maintained. Applicants are encouraged to perform work within



surface waters during periods of low-flow or no-flow. To ensure that all sources of soil erosion and sediment on the construction site are adequately controlled, the following strategies should be employed:

- Sediment and erosion control measures shall not be placed in surface waters. The design and placement of temporary erosion control measures shall not be conducted in a manner that may result in disruption of flow in wetlands or streams.
- Maximize the protection of existing vegetation. Natural vegetation should be retained, protected or supplemented to the maximum extent practical, and vegetation not intended for removal should be adequately marked, fenced, or flagged as necessary.
- Avoid disturbing critical areas. Areas such as sinkholes, streams, wetlands, stream buffers, highly erodible soils, and steep slopes should be avoided to the greatest extent feasible. Mark, fence or flag areas in the field that should be protected from construction activities such as clearing, grubbing, grading, mowing, staging activities, material storage and/or other related activities.
- Minimize size and duration of disturbed soil. Limit site preparation of activities such as grading and clearing to where they are absolutely necessary and consistent with plan and daily schedules of construction activities.
- Manage stormwater. Prevent stormwater from entering areas and leaving areas of disturbed soil by using vegetated strips, diversion dikes and swales, filter berms, sediment traps and basins, check dams, stabilized construction entrances, and silt fences or filter tubes/wattles. Reduce the amount of sediment and water velocity produced from areas of disturbed soils by using vegetation, riprap, sod, seeding and mulching or blankets, as well as the use of structural measures including diversion, check dams, slope drains, and storm drain protection.
- Stabilize soils. Stabilize soil with seeding and mulch as soon as possible after disturbance. Soil disturbed by construction activities should be stabilized within 14 days of ceasing construction activities. Erosion prevention measures such as erosion control mats/blankets, mulch, hydro applications, tracking, or soil binders shall be implemented on disturbed areas within 24 hours or as soon as practical after completion of disturbance/grading or following the end of activities. Final stabilization practices shall be initiated on any site where construction activities have been suspended for more than 180 days.
- Use low-impact/biological/recyclable materials. To the extent possible, construction managers should utilize natural or recyclable materials as temporary measures than can remain on-site after the completion of construction. One example is using mulch berms as opposed to silt fences, which must be removed and disposed after the completion of construction activities has occurred and vegetation has become well-established. This also reduces waste and removal costs.

#### SEDIMENT AND EROSION CONTROL PLAN REQUIREMENTS

Erosion prevention and sediment control plans submitted to WQC must contain detailed drawings, a site description and supporting information (narrative), including the following:

1. Narrative discussion of why the utility line must be placed within 50 feet of the top of the stream bank;
2. Construction details with dimensions, cross-sectional views and plan views to scale, showing location of utility lines and all surface waters;
3. Site development plan with the proposed construction area and construction-related activities areas clearly outlined, estimated project start and end dates, project type and description of all construction activities at the site;

4. The location of all surface waters on a 7.5 Minute topographical map, including streams, wetlands, sinkholes, and stormwater discharges from the site;
5. The types, depth, slope, locations and limitations of the soils and geology, natural landscape features, drainage patterns, flooding potential, and other pertinent information that helps identify both beneficial conditions and potential problems of a site;
6. Locations of temporary and permanent erosion, sediment, and stormwater management structures; construction details with dimensions, cross-sectional views and/or plan views with enough information for the reviewer and contractor to understand how to install the practice;
7. Approximate slopes anticipated after major grading activities;
8. Areas of soil disturbance, including an outline of areas which are not to be disturbed;
9. Location and technical specifications of any bank stabilization;
10. Location and boundaries of buffer zones, if any, existing or established to protect waters of the Commonwealth located within the boundaries of the project;
11. Locations of stockpile and/or borrow areas;
12. Separate sheets for staged plans to show detail, including the clearing and grubbing phase, initial grading plan with perimeter control and the final grading plan with final erosion prevention and sediment control plans and stormwater management controls in place.

Approved plans and specifications for projects are incorporated by reference and are enforceable parts of a certification. Any changes to the approved plans or specifications require written approval by WQC. For questions or clarifications, contact the Water Quality Certification Section at (502) 564-3410

## REFERENCES

Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharge Associated with Construction Activities (KYR10). Locate on line at:

<http://water.ky.gov/permitting/Pages/WastewaterDischarge.aspx>

Best Management Practices (BMPs) for Controlling Erosion, Sediment, and Pollutant Runoff from Construction Sites. Planning and Technical Specifications Manual for Stormwater Pollution Prevention Plans. Revised October 2009. Technology Transfer Program, Kentucky Transportation Center, University of Kentucky.

General Certification of Nationwide Permit #12, Utility Line Backfill and Bedding, 2017. Locate on line at: <http://water.ky.gov/permitting/Pages/CertificationNationwidePermits.aspx>



DEPARTMENT OF THE ARMY  
NASHVILLE DISTRICT, CORPS OF ENGINEERS  
Regulatory Division  
3701 Bell Road  
NASHVILLE, TENNESSEE 37214

SEP 24 2018

SUBJECT: File No. LRN-2018-00734; Proposed Utility Line Crossing an Unnamed Tributary of Spring Creek, Todd County, Kentucky

Todd County Water District  
C/O Mr. John Haley  
PO Box 520  
Elkton, Kentucky 42220

Dear Mr. Haley:

This correspondence is in regard to the pre-construction notification (PCN) for the discharge of dredged or fill material associated with the proposed utility line crossing. The proposed discharge of fill material is a water line crossing. The project is located along an Unnamed Tributary of Spring Creek, Todd County, Kentucky (Latitude: 36.6615; Longitude: -87.1705). This project has been assigned number LRN-2018-00734. Please refer to this number in all communication concerning this matter.

Based on the information you provided, Nationwide Permit (NWP) #12 Utility Line Crossing, which became effective March 19, 2017 [82 FR 1860], authorizes your proposal as depicted on the enclosed plans. In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP #12 Terms and Conditions*, and the *2017 Nationwide Permit General Conditions*. The work must also comply with the special conditions listed in the enclosed "SPECIAL CONDITIONS FOR PERMIT LRN-2018-00734, Todd County Water District."

This verification is valid until March 18, 2022, unless the NWP authorization is modified, suspended, or revoked prior to that date. Furthermore, if you commence or are under contract to commence this activity before the date of NWP expiration, modification, or revocation, you will have 12 months from the date of expiration, modification or revocation to complete the activity under the present terms and conditions of the NWP. This will apply to all NWPs unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d).

The NWP 12 verification does not obviate your responsibility to obtain and abide by all other federal, state and local permits or approvals required. The NWP verification should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. In addition, it does not grant any property rights or exclusive privileges and does not authorize any injury to the property or rights of others. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation during the permitting process. If you have any questions, please contact me at the above address or telephone (615) 369-7503 or via e-mail mark.carnes@usace.army.mil.

Sincerely,



Floyd M. Carnes  
Regulatory Specialist  
Regulatory Division

Enclosures

- Enclosure 1 – Special Conditions
- Enclosure 2 – Drawings (Sheets 1-4)
- Enclosure 3 – NWP 12, Terms and Conditions
- Enclosure 4 – 2017 Nationwide Permit General Conditions
- Enclosure 5 – Compliance Certification
- Enclosure 6 – Water Quality Certification

Copy Furnished:

Kentucky Division of Water  
Water Quality Certification Section - Electronically

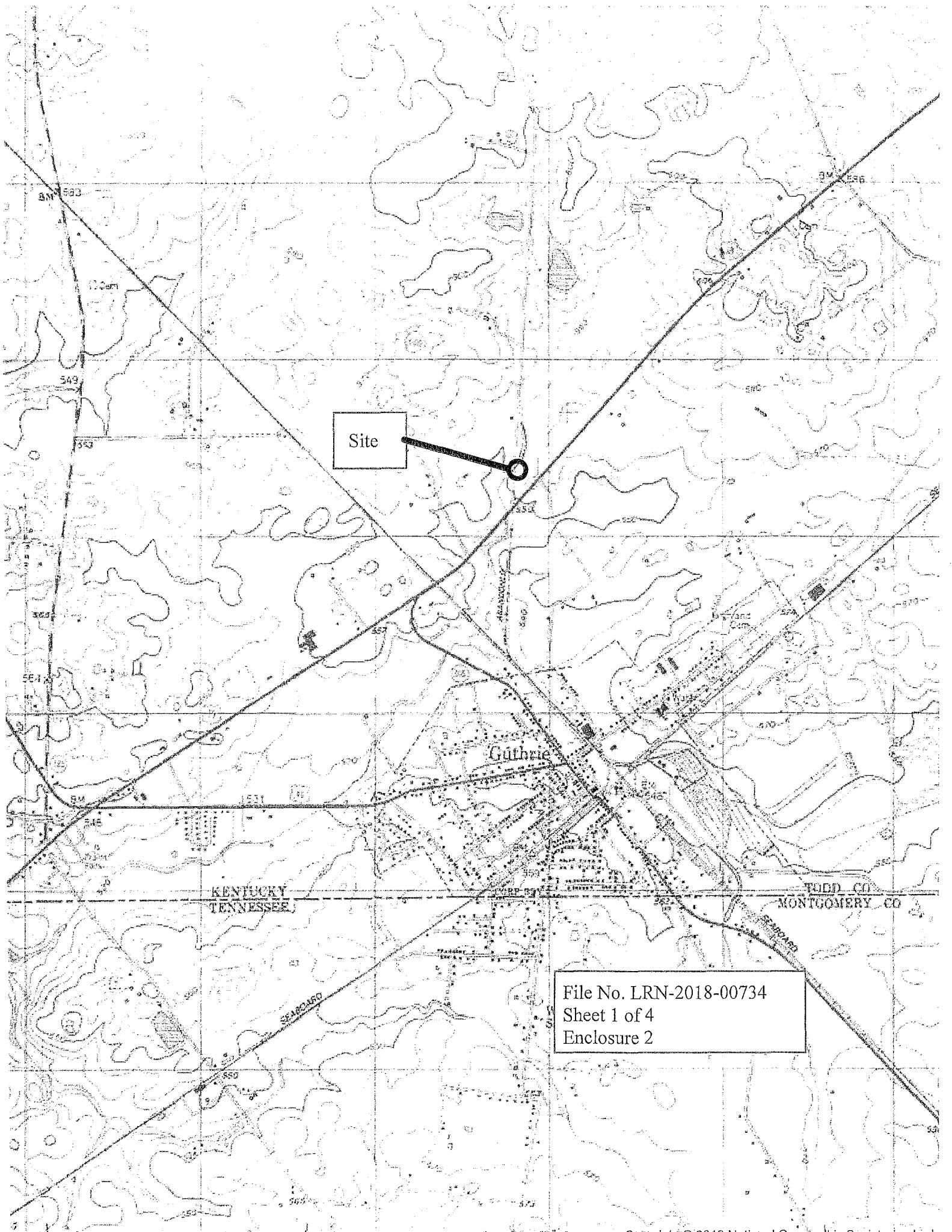


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## SPECIAL CONDITIONS

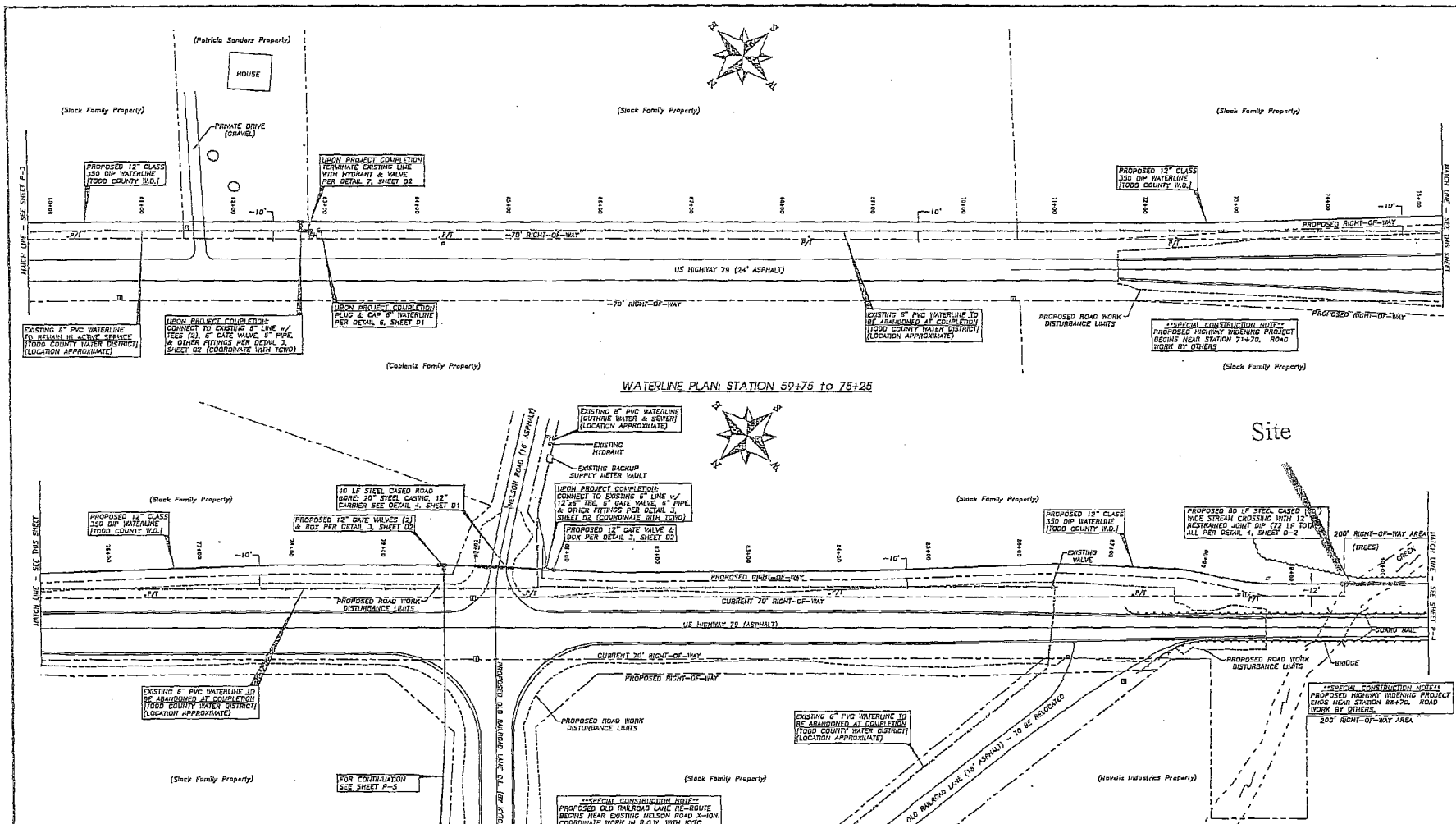
### PERMIT LRN-2018-00734 Todd County Water District

- 1. Permit Drawings:** The Permittee shall construct the authorized activity in accordance with the attached permit drawings (Enclosure 2, Sheets 1-4). Work in waters of the U.S. that deviates from the approved plans shall NOT occur without first obtaining approval from the U.S. Army Corps of Engineer, Nashville District Regulatory Division
- 2. Water Quality Certification:** The Permittee must comply with all conditions of the state permit. The Commonwealth of Kentucky has issued a conditional 401 water quality certification for the NWP. Consequently, the proposed work must also be constructed in accordance with the enclosed 401 certification. The Permittee must comply with all conditions of the state permit.
- 3. Tree Removal:** In accordance with the information provided, no trees would be removed associated with this project. If project plans are modified to include any tree removal, you shall notify this office so we can ensure appropriate ESA coordination with the US Fish and Wildlife Service occurs.



Site

File No. LRN-2018-00734  
Sheet 1 of 4  
Enclosure 2



WATERLINE PLAN: STATION 59+76 to 75+25

WATERLINE PLAN: STATION 75+25 to 90+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. ALSO, CUTTING OR DOING DAMAGE TO NATURAL VEGETATION (GRASS) AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, STUMPS, ETC. UNLESS SHOWN OTHERWISE ON RECORD. ALL CUT OR OTHER REMOVED VEGETATION SHALL BE RELOCATED THROUGH CONTACT USUALLY OBTAINED OR RECOVERED.

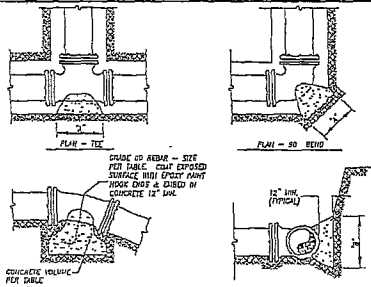
**BASEMAP & SCALE NOTE:**  
 THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FURNISH HIMSELF WITH THE PROJECT SITE PRIOR TO CONSTRUCTION. UNDER ANY CIRCUMSTANCES SHALL THE CONTRACTOR ASSUME THAT ALL FEATURES ARE IDENTIFIED AND INDICATED IN THEIR EXACT LOCATION. THE CONTRACTOR SHALL CONTACT ANY ADJACENT 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		LEGEND	
Ny. Underground Protection	(609) 729-0907	PROPOSED WATER LINE	---
South Central Bell	(609) 729-0907	EXISTING WATER LINE	---
Pennsylv. Rural Electric Coop.	(609) 265-2545	EXISTING LIVING WATER LINE	---
Town Gas System	(609) 826-1948	PROPERTY LINE	---
Western Kentucky Gas	(609) 729-0907	GAS LINE	---
1007 E. Station (E. 8th) Hwy. Cross	(717) 714-2888	TELEPHONE LINE	---
Todd County Road Department	(717) 265-5382	RECOGNIZED METER	□
City of Dallas	(214) 463-2511	PRIVATE FRESHWATER	□
Lagan Todd Regional Water Commission	(717) 463-5998	POLE TOP MARK	+
		POST-TELEPHONE POLE	+P/T
		VALVE	○
		FLUSH HYDRANT	○/H
		GAS METER/REGULATOR	□

 REVISIONS NO. DATE BY 1 11/11/18 JAW
 <b>McGraw-Hill</b> CONSTRUCTION 200 Ewing Street Suite 200 P.O. Box 200 Easton, PA 18042 (717) 432-9115 (717) 262-2328
FIRM: McGraw-Hill Construction, Inc. DES BY: CWW    CHK BY: JAW DWN BY: CWW    APP BY: SCALE: 1"=50' PROJECT DATE: 2018 PRINTED DATE: 02/08/18 ON ORIGINAL DRAWING
Todd County Water District NOVELIS WATER SUPPLY PROJECT Contract 1 - Water-Line & Meter Station U.S. Highway 79 Water Line Plan
 August 16, 2018 SHEET 2 OF 2 DRAWING NO. SHEET P-3

File No LRN-2018-00734  
 Sheet 2 of 4  
 Enclosure 2

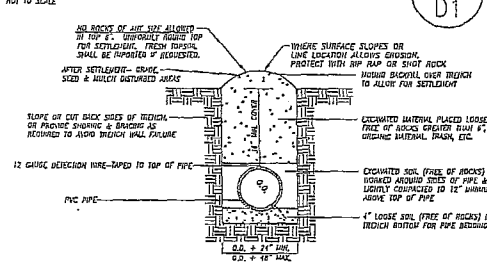




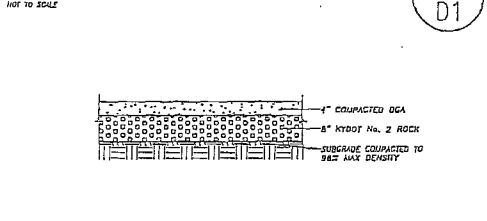
PIPE SIZE	MINIMUM BEARING AREA (A <sub>b</sub> ) IN SQUARE FEET						MIN. CONC. VOLUME IN CUM. FEET	MIN. CONC. STRENGTH	REBAR SIZE
	12" DIA. END	18" DIA. END	12" DIA. END	18" DIA. END	12" DIA. END	18" DIA. END			
2", 4" & 6"	1.0	1.5	1.0	1.0	1.0	2	1.5	#4	
8"	2.5	3.0	2.0	1.0	1.0	5	3	#4	
10"	4.0	5.5	3.0	1.5	1.0	8	5	#5	
12"	7.0	8.5	5.5	2.5	1.5	12	7	#5	
14"	10.0	12.0	8.0	3.0	2.0	18	12	#5-#6	
16"	15.0	20.5	11.5	6.0	3.0	27	21	#5-#8	

- NOTES**
- CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
  - KEEP CONCRETE CLEAR OF JOINTS, CLAMP BOLTS, ETC.
  - CONCRETE THRUST BLOCKS SHALL BE CAST AGAINST SOUND, UNDISTURBED GROUND.
  - BEARING AREAS ARE BASED ON 1,000 PSF SOIL BEARING CAPACITY. BEARING CAPACITY NOT BEARING CAPACITY THRUST BLOCK.
  - THRUST BLOCK BEARING AREAS MAY BE ADJUSTED IN ROCK SUBJECT TO ENGINEER'S APPROVAL.
  - MINIMUM BEARING AREAS SHALL BE SHOWN IN THIS TABLE AT EACH END OF THE WALL.
  - WHERE CONDITIONS SUSCEPTIBLE THAT UNDESIRABLE BEARING CAPACITIES EXIST, HEAVY DUTY PAVEMENT SHALL BE CASTING THRUST BLOCK.

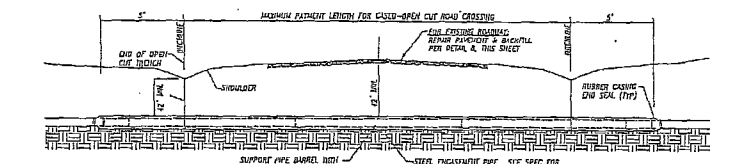
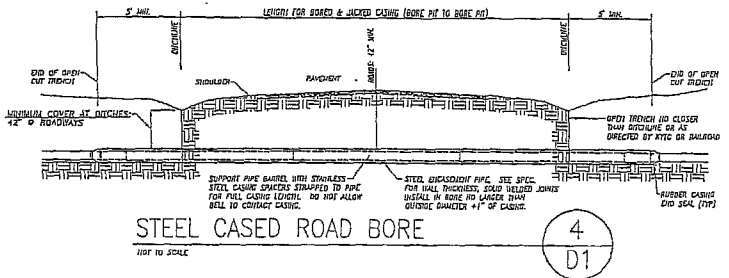
**CONCRETE THRUST BLOCKS**



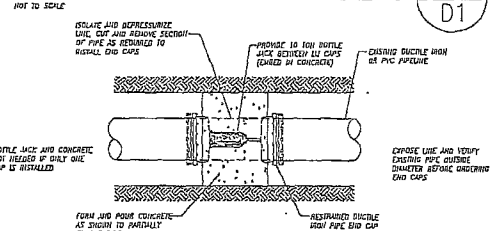
**PVC PIPE (IF NEEDED) BEDDING & BACKFILL - SOIL**



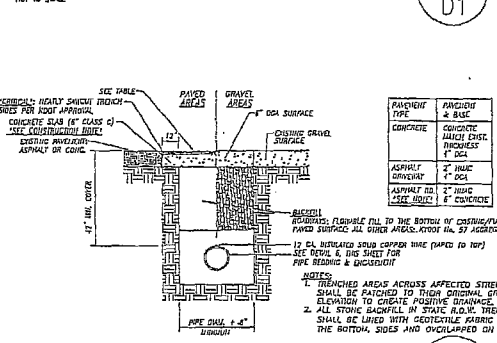
**ACCESS ROAD DETAIL**



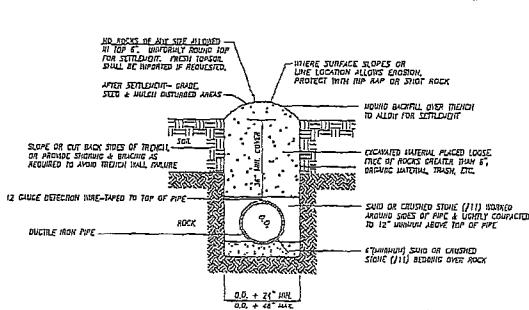
**CASED-OPEN CUT ROAD CROSSING**



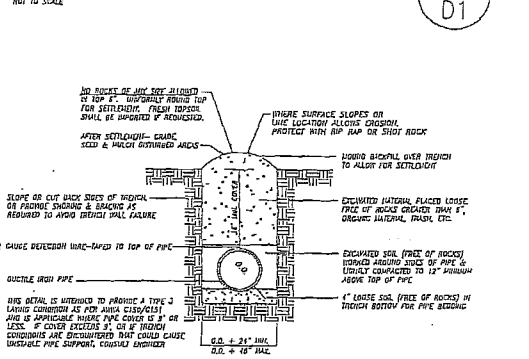
**CUT & PLUG EXISTING LINE DETAIL**



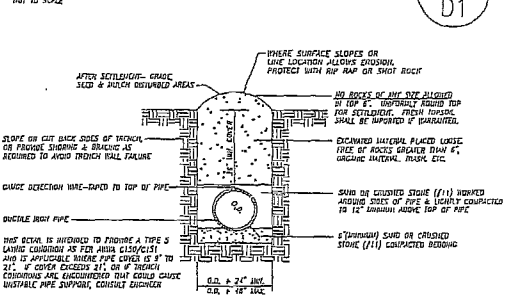
**PAVEMENT BACKFILL & REPAIR**



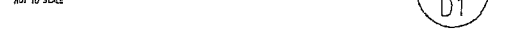
**DUCTILE IRON PIPE - ALL DEPTHS BEDDING & BACKFILL - ROCK**



**DUCTILE IRON UP TO 9' COVER BEDDING & BACKFILL - SOIL**



**DUCTILE IRON 9' - 21' COVER & RESTRAINED JOINT PIPE AREAS BEDDING & BACKFILL - SOIL**



FRANK MCGHEE Engineering, Inc.  
 DES BY: CWV CHK BY: AWV  
 DWG BY: CWV APP BY:  
 SCALE AS SHOWN  
 PRINTED: 10/11/2018  
 PROJECT: TODD COUNTY WATER SUPPLY PROJECT  
 SHEET: 10 OF 10  
 DATE: 10/11/2018  
 DRAWING NO. 10  
 SHEET D-1

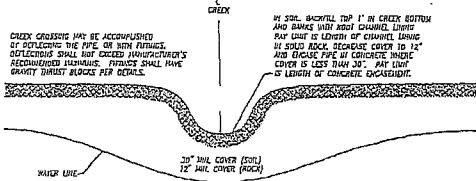
FRANK MCGHEE Engineering, Inc.  
 202 Davis Street  
 Independence, MO 64643  
 (314) 413-9885  
 (314) 355-2233

Contract 1 - Water Line & Meter Station  
 Water Line Details

Quality On Tap!

April 16, 2018  
 TODD COUNTY WATER SUPPLY PROJECT  
 10 OF 10

File No LRN-2018-00734  
 Sheet 3 of 4  
 Enclosure 2

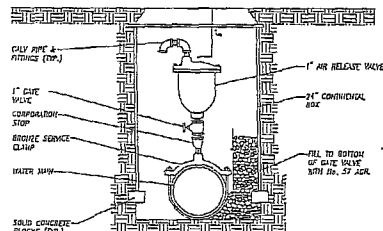


WHERE ENCASED IN CONCRETE (I.E. ROCK) PROVIDE 30" MIN. 3" PVC COVER PIPE. 2" RESTING END OF CONCRETE ENCASEMENT CLOSE ENDS WITH END SLEWS SUPPORT CARRIER PIPE WITH CASING SPACERS.

### SHALLOW DITCH/CREEK X-ING

NOT TO SCALE

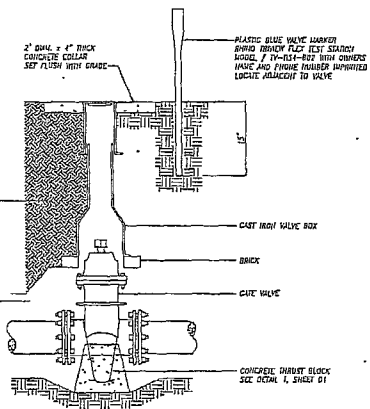
1  
D2



### AIR RELEASE VALVE DETAIL

NOT TO SCALE

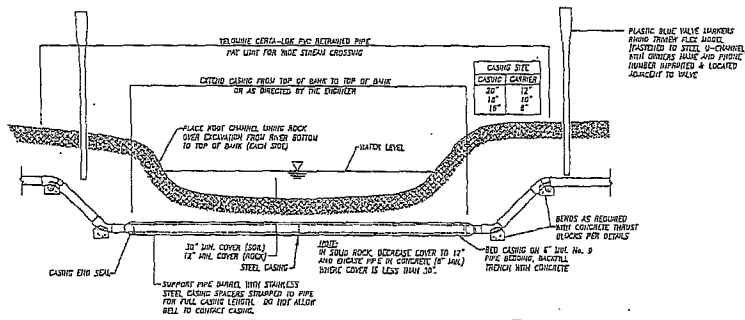
2  
D2



### VALVE SETTING DETAIL

NOT TO SCALE

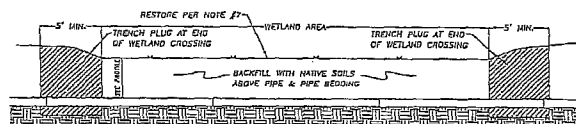
3  
D2



### WIDE STREAM CROSSING DETAIL

NOT TO SCALE

4  
D2



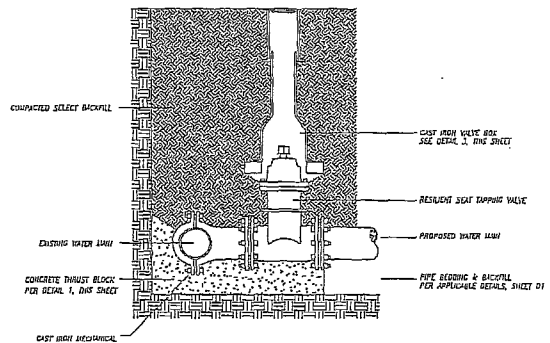
### GENERAL NOTES

- TRENCH PLUG SHALL CONSIST OF CLAY CONTAINING NO MORE THAN 15% STONE, NOT LARGER THAN 2" DIA. CLAY SHALL BE PLACED IN 6" LIFTS & COMPACTED BY MECHANICAL TAMPING TO NO LESS THAN 95% MAX. DENSITY.
- TRENCH PLUGS SHALL BE INSTALLED AT EDGES OF ALL WETLANDS TO PREVENT TRENCH FROM DRAINING AREA.
- TRENCH WIDTH AND DISTURBANCE SHALL BE KEPT TO A MINIMUM. RESTORE ORIGINAL GRADES THRU WETLANDS.
- PROTECT AND PRESERVE VEGETATION TO THE MAXIMUM. EXTENT POSSIBLE. MOUNDING OF FILL MATERIAL TO ALLOW FOR SETTLEMENT IN TRENCH IS FORBIDDEN.
- MINIMIZE CROSSING & PRECLUDE ITS EXTERIOR WETLAND AREA.
- BACKFILLS: THE TOP 6" OF TOPSOIL SHALL BE STRIPPED & SALVAGED PRIOR TO TRENCHING. AFTER TRENCHING, THE UPPER 6" OF BACKFILL SHALL BE RETURNED WITH THE NATIVE TOPSOIL. TOP 6" SHALL NOT BE COMPACTED.
- PERMANENT RESTORATION SEEDING: REPLANT OR SOW SEED WITH INDIGENOUS WETLAND PLANTS OR NATIVE SEEDLINGS, LEAVING NO BARE SPOTS AND MULCHED WITH SMALL GRAIN STRAW.

### WETLAND CROSSING X-SECTION

NOT TO SCALE

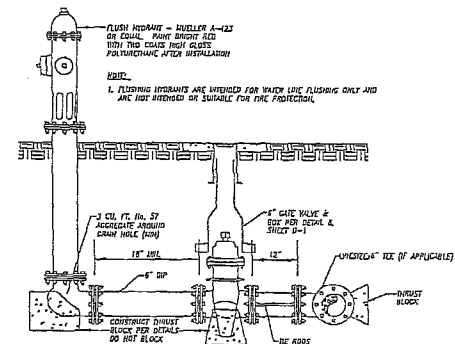
5  
D2



### TAPPING SLEEVE & VALVE

NOT TO SCALE

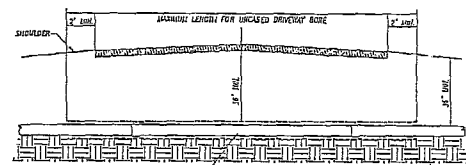
6  
D2



### FLUSHING HYDRANT DETAIL

NOT TO SCALE

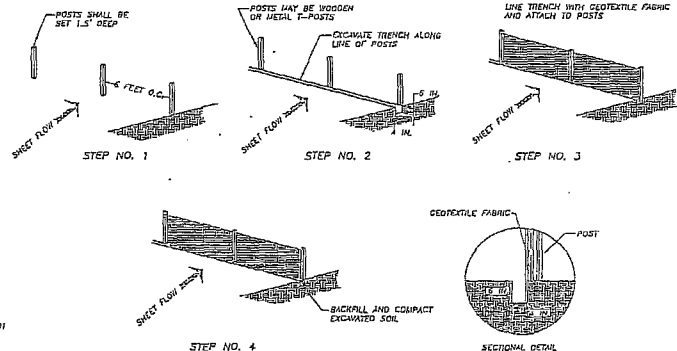
7  
D2



### UNCASED DRIVEWAY BORE DETAIL

NOT TO SCALE

8  
D2



### SILT FENCE DETAIL

NOT TO SCALE

9  
D2

DATE	BY	CHK	APP

TODD COUNTY  
Water District  
McGHEE  
302 E. Hwy 220  
P.O. Box 220  
Wichita, KS 67201  
(785) 326-3226

FILED: MCGHEE Engineering, Inc.  
DES. BY: CWV  
CHK. BY: ANW  
DWN. BY: CWV  
SCALE: AS SHOWN  
PROJECT DATE: 2018  
DATE FOR PERM: 04/18/18  
DATE FOR PERM: 04/18/18  
DATE FOR PERM: 04/18/18  
DATE FOR PERM: 04/18/18

Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 1 - Water Line & Meter Station  
Water Line Details

Quality On Tap!

August 18, 2018  
NOVELIS WATER SUPPLY PROJECT  
CONTRACT 1 - WATER LINE & METER STATION  
WATER LINE DETAILS

DRAWING NO.  
SHEET 0-2



US Army Corps  
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Nashville District

# 2017 Nationwide Permit

82 FR 1860

## 12. Utility Line Activities.

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

*Utility lines:* This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of utility lines, including outfall and intake structures. There must be no change in pre-construction contours of waters of the United States. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

*Utility line substations:* This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

*Foundations for overhead utility line towers, poles, and anchors:* This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

*Access roads:* This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into nontidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the

road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

*Notification:* The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met:

- (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;
  - (2) a section 10 permit is required;
  - (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;
  - (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area;
  - (5) discharges that result in the loss of greater than 1/10- acre of waters of the United States;
  - (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or
  - (7) permanent access roads are constructed in waters of the United States with impervious materials.
- (See general condition 32.)

**(Authorities:** Sections 10 and 404)

**Note 1:** Where the utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

**Note 2:** For utility line activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Utility line activities must comply with 33 CFR 330.6(d).

**Note 3:** Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

**Note 4:** Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

**Note 5:** Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

**Note 6:** This NWP authorizes utility line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

**Note 7:** For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

**Note 8:** For NWP 12 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require preconstruction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

**Regional Conditions for the State of Tennessee:**

- a. PCN in accordance with NWP General Condition 32 is required for all proposed blasting within waters of the U.S.



US Army Corps  
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Nashville District

# 2017 Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

## State of Tennessee Regional General Conditions (Applicable to ALL Nationwide Permits):

1. A PCN is required for all proposed activities in *Exceptional Tennessee Waters* and/or *Outstanding National Resource Waters*. A list of known Exceptional Tennessee Waters and Outstanding National Resource Waters can be obtained from the Tennessee Department of Environment and Conservation's website: <https://tn.gov/environment/article/wr-water-resources-data-viewer>. A map of known Exceptional Tennessee Waters and Outstanding National Resource Waters can be obtained from the Tennessee Department of Environment and Conservation's website: <http://tdeconline.tn.gov/dwr/>.
2. All impacts to wetlands/open waters shall be calculated and reported in acres. Stream impacts shall be calculated separately and reported in both linear feet and acres.

## Additional Information

Endangered Species Act: Nationwide Permit General Condition 32, *Pre-Construction Notification*, requires a PCN to be submitted to the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat. To determine if any listed species, critical habitat, migratory birds or other natural resources may be impacted by your proposed project, please consult the U.S. Fish and Wildlife Services' IPAC website: <http://ecos.fws.gov/ipac>.

Historic Properties: Nationwide Permit General Condition 32, *Pre-Construction Notification*, requires a PCN to be submitted to the District Engineer 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. Information regarding cultural resources and the National Historic Preservation Act, can be reviewed at the National Park Service's website: <http://www.nps.gov/nr/>. A map of non-restricted listed properties on the National Register of Historic Places can be viewed at: <https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466>

## National General Conditions:

### 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 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 NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

Enclosure 4

Enclosure 4

**9. Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

**10. Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

**11. Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

**12. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

**13. Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

**14. Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

**15. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

**16. Wild and Scenic Rivers.**

- (a) No 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. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.
- (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g.,

National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

**17. Tribal Rights.** No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

**18. Endangered Species.**

- (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.
- (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed 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. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (d) As a result of formal or informal consultation 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 their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

**20. Historic Properties.**

- (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
- (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed 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, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause 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. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and 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.

- (d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

**21. Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant 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's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
- (b) For NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.

**23. Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

- (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
- (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.
- (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse 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) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).
- (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on 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 NWP's, 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)).
  - (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.
  - (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (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 NWP's. 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 NWP's.
- (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 dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

**25. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

**26. Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

**27. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

**28. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

**29. Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer.

A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(Transferee)

\_\_\_\_\_  
(Date)

**30. Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized 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 permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

**32. Pre-Construction Notification.**

- (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. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:
- (1) Name, address and telephone numbers of the prospective permittee;
  - (2) Location of the proposed activity;
  - (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
  - (4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the 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, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
  - (6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
  - (7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that 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 activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination:

- (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the 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 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line 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 email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWWS, 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 email 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 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.

#### 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).



US Army Corps  
of Engineers ®  
Nashville District

## COMPLIANCE CERTIFICATION

### YOU ARE REQUIRED TO SUBMIT THIS SIGNED CERTIFICATION REGARDING THE COMPLETED ACTIVITY AND ANY REQUIRED MITIGATION

I hereby certify that the work authorized by Permit No. LRN-2018-00734 and any required mitigation was done in accordance with the Corps authorization, including any general, regional, or special conditions.

---

Permittee Signature

---

Date

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative.

Submit this signed certification to the address below:

- U.S Army Corps of Engineers  
Regulatory Division  
3701 Bell Road  
Nashville, TN 37214-266  
Attn: Floyd M. Carnes
- East Regulatory Field Office  
501 Adesa Parkway  
Suite 250  
Lenoir City, TN 37771
- West Regulatory Field Office  
2042 Beltline Road, Southwest  
Building C, Suite 415  
Decatur, Al 35601



MATTHEW G. BEVIN  
GOVERNOR

CHARLES G. SNAVELY  
SECRETARY

ENERGY AND ENVIRONMENT CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

R. BRUCE SCOTT  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601

## General Certification--Nationwide Permit # 12 Utility Line Backfill and Bedding

This General Certification is issued March 19, 2017, 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 and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): 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.

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.

For all other operations, 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, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 12, namely Utility Line Backfill and Bedding, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.
2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.

General Certification--Nationwide Permit # 12  
Utility Line Backfill and Bedding  
Page 2

3. This general water quality certification is limited to the crossing of surface waters by utility lines. This document does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.
4. For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance.
5. 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 line project where the cumulative impacts exceed ½ acre of wetlands or 300 linear feet of surface waters. 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.
6. Stream impacts under Conditions 4 and 5 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.
7. Any crossings must be constructed in a manner that does not impede natural water flow.
8. Stream impacts covered under this General Water Quality 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 (KWQP).
9. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
10. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
11. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
12. Utility lines placed 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. The cabinet may allow construction within the 50 foot buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.

13. Utility line stream crossings shall be constructed by methods that maintain flow and allow for a 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.
14. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or wetlands or stream dimension, pattern or profile.
15. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. Mechanized land clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification.
16. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:
  - Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
  - Erosion and sedimentation pollution control plans and Best Management Practices 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.
  - 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 of the Commonwealth, 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.
  - Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
  - Removal of riparian vegetation shall be limited to that necessary for equipment access.
  - To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
  - Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., 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



General Certification--Nationwide Permit # 12

Utility Line Backfill and Bedding

Page 4

be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

- 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.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- 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.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

**WATER QUALITY GENERAL CERTIFICATION**  
**OF UTILITY LINE ACTIVITIES ALONG STREAMS**

IN EFFECT: MARCH 19, 2017

Condition 12 of the March 19, 2017 Section 401 Water Quality Certification (WQC) of the U.S. Army Corps of Engineers' Nationwide Permit (NWP) # 12 Utility Line Backfill and Bedding states:

*Utility lines placed 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. The cabinet may allow for construction within the 50-ft buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.*

If a utility line project qualifies for a general certification of NWP 12 and is within 50 feet of the stream bank, a WQC application and a site-specific sediment and erosion control plan must be submitted for review by WQC before construction and construction-related activities can proceed. This is in addition to the Stormwater Pollution Prevention Plans for construction sites one (1) acre or more in size. Approval of the sediment and erosion control plan by the WQC Section is required before construction activities can begin.

**WHY SEDIMENT AND EROSION CONTROL PLANS AND PRACTICES?**

Construction activities near streams, rivers, and lakes have the potential to cause water pollution and stream degradation if erosion and sediment controls are not properly installed and maintained. In order to effectively reduce erosion and sedimentation impacts, plans and practices must be designed, located, installed, and maintained in effective operating condition at all times during land disturbing activities to prevent the discharge of sediment and other pollutants into waters of the Commonwealth. Sediment is a major contributor to the pollution of surface waters in Kentucky and construction activities are a major source of sediment and stream siltation. Disturbed soil, if not managed properly, can be washed off-site during storms and can cause major impairment in the receiving waters. Excessive silt causes adverse impacts such as disruption of aquatic organism life cycles, reduced passage, higher drinking water treatment costs for sediment removal, and the alteration of waters' physical/chemical properties, resulting in degradation of its quality. Therefore, erosion prevention and sediment control practices are the key parameter for successful water quality protection.

Applicants should design the site construction and development by selecting erosion prevention and sediment controls and practices to accommodate the unique hydrologic and geologic conditions of the site. Some of the factors to be considered include: local development requirements and/or codes, precipitation patterns for the area when the project will be underway, soil types, slopes, layout of structures for the site, sensitivity of nearby waters and natural areas, and safety concerns. A number of structural practices (e.g., mulching, vegetated buffer strips, grassed swales, retention/detention ponds, silt fence and hay bale barriers, stone check dams, inlet protection, infiltration practices) and non-structural practices (minimizing disturbance, good housekeeping) have shown to be efficient, cost effective, and versatile for construction site developers to implement.

**EROSION PREVENTION AND SEDIMENT CONTROL STRATEGIES**

Appropriate erosion prevention and sediment control measures and other stormwater management practices must be designed, installed, and maintained. Applicants are encouraged to perform work within

surface waters during periods of low-flow or no-flow. To ensure that all sources of soil erosion and sediment on the construction site are adequately controlled, the following strategies should be employed:

- **Sediment and erosion control measures shall not be placed in surface waters.** The design and placement of temporary erosion control measures shall not be conducted in a manner that may result in disruption of flow in wetlands or streams.
- **Maximize the protection of existing vegetation.** Natural vegetation should be retained, protected or supplemented to the maximum extent practical, and vegetation not intended for removal should be adequately marked, fenced, or flagged as necessary.
- **Avoid disturbing critical areas.** Areas such as sinkholes, streams, wetlands, stream buffers, highly erodible soils, and steep slopes should be avoided to the greatest extent feasible. Mark, fence or flag areas in the field that should be protected from construction activities such as clearing, grubbing, grading, mowing, staging activities, material storage and/or other related activities.
- **Minimize size and duration of disturbed soil.** Limit site preparation of activities such as grading and clearing to where they are absolutely necessary and consistent with plan and daily schedules of construction activities.
- **Manage stormwater.** Prevent stormwater from entering areas and leaving areas of disturbed soil by using vegetated strips, diversion dikes and swales, filter berms, sediment traps and basins, check dams, stabilized construction entrances, and silt fences or filter tubes/wattles. Reduce the amount of sediment and water velocity produced from areas of disturbed soils by using vegetation, riprap, sod, seeding and mulching or blankets, as well as the use of structural measures including diversion, check dams, slope drains, and storm drain protection.
- **Stabilize soils.** Stabilize soil with seeding and mulch as soon as possible after disturbance. Soil disturbed by construction activities should be stabilized within 14 days of ceasing construction activities. Erosion prevention measures such as erosion control mats/blankets, mulch, hydro applications, tracking, or soil binders shall be implemented on disturbed areas within 24 hours or as soon as practical after completion of disturbance/grading or following the end of activities. Final stabilization practices shall be initiated on any site where construction activities have been suspended for more than 180 days.
- **Use low-impact/biological/recyclable materials.** To the extent possible, construction managers should utilize natural or recyclable materials as temporary measures than can remain on-site after the completion of construction. One example is using mulch berms as opposed to silt fences, which must be removed and disposed after the completion of construction activities has occurred and vegetation has become well-established. This also reduces waste and removal costs.

#### SEDIMENT AND EROSION CONTROL PLAN REQUIREMENTS

Erosion prevention and sediment control plans submitted to WQC must contain detailed drawings, a site description and supporting information (narrative), including the following:

1. Narrative discussion of why the utility line must be placed within 50 feet of the top of the stream bank;
2. Construction details with dimensions, cross-sectional views and plan views to scale, showing location of utility lines and all surface waters;
3. Site development plan with the proposed construction area and construction-related activities areas clearly outlined, estimated project start and end dates, project type and description of all construction activities at the site;

4. The location of all surface waters on a 7.5 Minute topographical map, including streams, wetlands, sinkholes, and stormwater discharges from the site;
5. The types, depth, slope, locations and limitations of the soils and geology, natural landscape features, drainage patterns, flooding potential, and other pertinent information that helps identify both beneficial conditions and potential problems of a site;
6. Locations of temporary and permanent erosion, sediment, and stormwater management structures; construction details with dimensions, cross-sectional views and/or plan views with enough information for the reviewer and contractor to understand how to install the practice;
7. Approximate slopes anticipated after major grading activities;
8. Areas of soil disturbance, including an outline of areas which are not to be disturbed;
9. Location and technical specifications of any bank stabilization;
10. Location and boundaries of buffer zones, if any, existing or established to protect waters of the Commonwealth located within the boundaries of the project;
11. Locations of stockpile and/or borrow areas;
12. Separate sheets for staged plans to show detail, including the clearing and grubbing phase, initial grading plan with perimeter control and the final grading plan with final erosion prevention and sediment control plans and stormwater management controls in place.

Approved plans and specifications for projects are incorporated by reference and are enforceable parts of a certification. Any changes to the approved plans or specifications require written approval by WQC. For questions or clarifications, contact the Water Quality Certification Section at (502) 564-3410

## REFERENCES

Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharge Associated with Construction Activities (KYR10). Locate on line at:

<http://water.ky.gov/permitting/Pages/WastewaterDischarge.aspx>

Best Management Practices (BMPs) for Controlling Erosion, Sediment, and Pollutant Runoff from Construction Sites. Planning and Technical Specifications Manual for Stormwater Pollution Prevention Plans. Revised October 2009. Technology Transfer Program, Kentucky Transportation Center, University of Kentucky.

General Certification of Nationwide Permit #12, Utility Line Backfill and Bedding, 2017. Locate on line at: <http://water.ky.gov/permitting/Pages/CertificationNationwidePermits.aspx>



DEPARTMENT OF THE ARMY  
NASHVILLE DISTRICT, CORPS OF ENGINEERS  
Regulatory Division  
3701 Bell Road  
NASHVILLE, TENNESSEE 37214

SEP 24 2018

SUBJECT: File No. LRN-2018-00733; Proposed Utility Line Crossing an Unnamed Tributary of Spring Creek, Todd County, Kentucky

Todd County Water District  
C/O Mr. John Haley  
PO Box 520  
Elkton, Kentucky 42220

Dear Mr. Haley:

This correspondence is in regard to the pre-construction notification (PCN) for the discharge of dredged or fill material associated with the proposed utility line crossing. The proposed discharge of fill material is a water line crossing. The project is located along an Unnamed Tributary of Spring Creek, Todd County, Kentucky (Latitude: 36.6641; Longitude: -87.1697). This project has been assigned number LRN-2018-00733. Please refer to this number in all communication concerning this matter.

Based on the information you provided, Nationwide Permit (NWP) #12 Utility Line Crossing, which became effective March 19, 2017 [82 FR 1860], authorizes your proposal as depicted on the enclosed plans. In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP #12 Terms and Conditions*, and the *2017 Nationwide Permit General Conditions*. The work must also comply with the special conditions listed in the enclosed "SPECIAL CONDITIONS FOR PERMIT LRN-2018-00733, Todd County Water District."

This verification is valid until March 18, 2022, unless the NWP authorization is modified, suspended, or revoked prior to that date. Furthermore, if you commence or are under contract to commence this activity before the date of NWP expiration, modification, or revocation, you will have 12 months from the date of expiration, modification or revocation to complete the activity under the present terms and conditions of the NWP. This will apply to all NWPs unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5(c) or (d).

The NWP 12 verification does not obviate your responsibility to obtain and abide by all other federal, state and local permits or approvals required. The NWP verification should not be considered as an approval of the design features of any activity authorized or an implication that such construction is considered adequate for the purpose intended. In addition, it does not grant any property rights or exclusive privileges and does not authorize any injury to the property or rights of others. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit* form. Thank you for your cooperation during the permitting process. If you have any questions, please contact me at the above address or telephone (615) 369-7503 or via e-mail mark.carnes@usace.army.mil.

Sincerely,



Floyd M. Carnes  
Regulatory Specialist  
Regulatory Division

Enclosures

- Enclosure 1 – Special Conditions
- Enclosure 2 – Drawings (Sheets 1-4)
- Enclosure 3 – NWP 12, Terms and Conditions
- Enclosure 4 – 2017 Nationwide Permit General Conditions
- Enclosure 5 – Compliance Certification
- Enclosure 6 – Water Quality Certification

Copy Furnished:

Kentucky Division of Water  
Water Quality Certification Section - Electronically



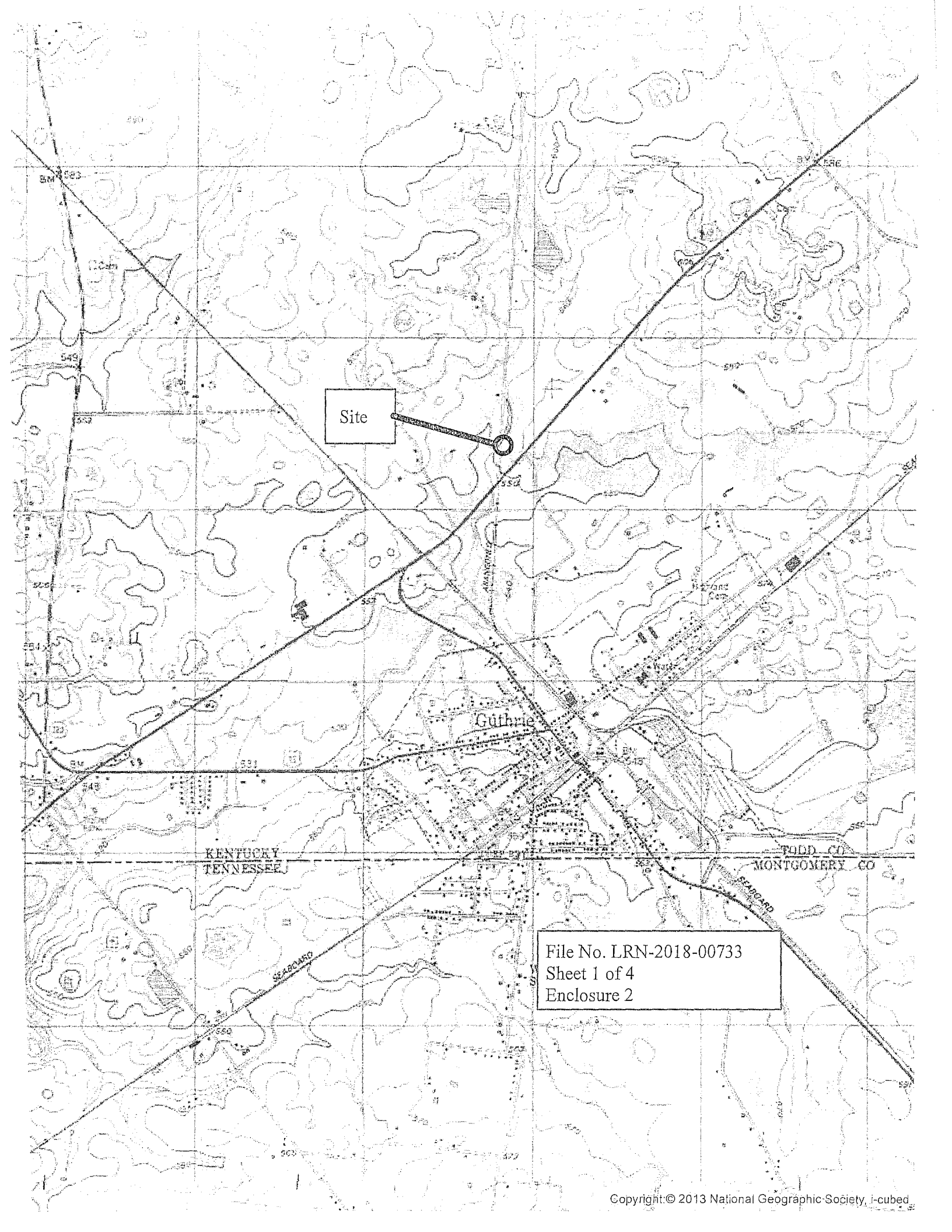
US Army Corps  
of Engineers @  
Nashville District

## SPECIAL CONDITIONS

### PERMIT LRN-2018-00733 Todd County Water District

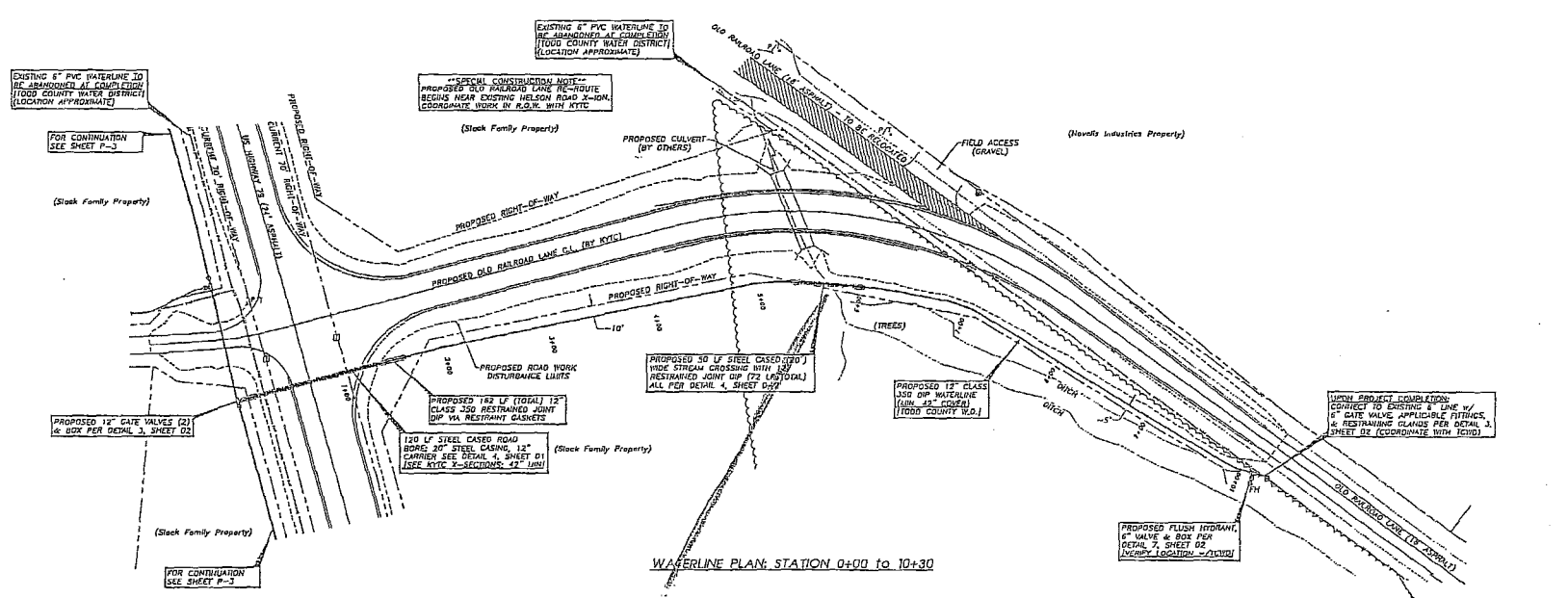
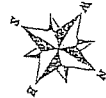
- 1. Permit Drawings:** The Permittee shall construct the authorized activity in accordance with the attached permit drawings (Enclosure 2, Sheets 1-4). Work in waters of the U.S. that deviates from the approved plans shall NOT occur without first obtaining approval from the U.S. Army Corps of Engineer, Nashville District Regulatory Division
- 2. Water Quality Certification:** The Permittee must comply with all conditions of the state permit. The Commonwealth of Kentucky has issued a conditional 401 water quality certification for the NWP. Consequently, the proposed work must also be constructed in accordance with the enclosed 401 certification. The Permittee must comply with all conditions of the state permit.
- 3. Tree Removal:** In accordance with the information provided, no trees would be removed associated with this project. If project plans are modified to include any tree removal, you shall notify this office so we can ensure appropriate ESA coordination with the US Fish and Wildlife Service occurs.





Site

File No. LRN-2018-00733  
Sheet 1 of 4  
Enclosure 2



WATERLINE PLAN: STATION 0+00 TO 10+30

Site

**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 OR DO DAMAGE TO HEALTHY TREES FORMS AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, STUMPS, ETC. UNLESS EARLY DAMAGED OR REMOVED. IF ANY OTHER ENDANGERED SPECIES ARE ENCOUNTERED, PROMPTLY CONTACT USFWS.

**BASEMAP & SCALE NOTE:**  
 THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES AND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL CORRELATE THESE 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 CONDUCT INDEPENDENT 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 (606) 732-0007
- South Central Bell (606) 732-0007
- Pennsylv. Rural Electric Coop. (606) 263-2315
- Texas Gas Pipeline (606) 626-1946
- Eastern Kentucky Gas (606) 732-6007
- NGOT Division / E. Bowling Green (270) 748-7088
- Todd County Road Department (270) 243-5382
- City of Oakley (270) 483-2511
- Louis. Todd Regional Water Commission (270) 483-6900

LEGEND

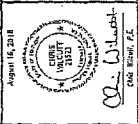
- PROPOSED WATER LINE
- EXISTING WATER LINE
- EXISTING LIVING WATER LINE
- PROPERTY LINE
- GAS LINE
- TELEPHONE LINE
- MEASURING POINT
- PUBLIC CESTRAL
- POLE ONLY LINE
- POLE/TELEPHONE POLE
- WVLC
- FLUSH HYDRANT
- GAS VALVE/REGULATOR

NO.	BY	DATE	REVISIONS
1	AW	08/14/18	ISSUED FOR PERMIT
2	AW	08/14/18	REVISED

**MCCLEE** TODD COUNTY  
 WATER DISTRICT  
 P.O. BOX 620  
 ELSON, KY 42520  
 (270) 785-2329

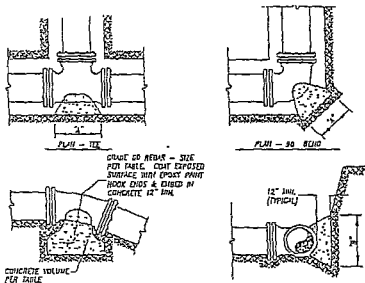
FIRM: McNeas Engineering, Inc.  
 DES BY: CWW APP 9/17  
 CHECKED BY: MHW  
 PROJECT DATE: 2018  
 PRINTED: LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 Old Railroad Lane  
 Water Line Plan



DRAWING NO.  
 SHEET P-5

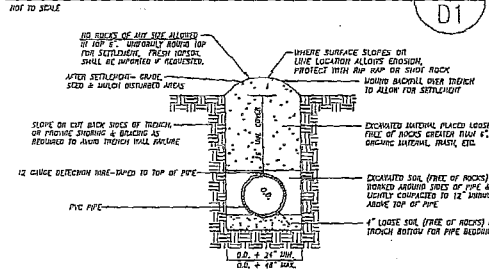
File No LRN-2018-00733  
 Sheet 2 of 4  
 Enclosure 2



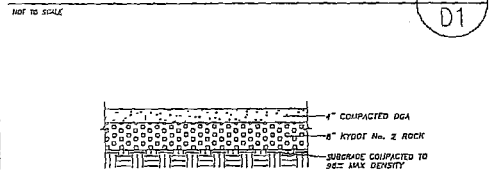
PIPE SIZE	APPROXIMATE BEARING AREA (A x B) IN SQUARE FEET				MIN. CONC. VOLUME CUBIC FEET	REIN. #	REIN. SIZE
	12" BED	18" BED	24" BED	30" BED			
4"	1.0	1.5	1.0	1.0	2	1.0	#11
6"	2.0	3.0	2.0	1.0	3	1.0	#11
8"	3.0	4.5	3.0	1.5	4	1.0	#11
10"	4.0	6.0	4.0	2.0	5	1.0	#11
12"	5.5	8.0	5.5	3.0	6	1.0	#11
14"	7.0	10.5	7.0	4.0	7	1.0	#11

1. CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
2. REIN. CONCRETE CLEAR OF JOINTS, CURB SIDES, ETC.
3. CONCRETE THRUST BLOCKS SHALL BE CAST AGAINST EXISTING UNDISTURBED SOIL.
4. REINFORCING BARS SHALL BE PLACED ON TOP OF SOIL BEHIND THRUST BLOCKS.
5. THRUST BLOCK BEARING AREAS MAY BE REDUCED IN ROCK SUBJECT TO ENGINEER'S APPROVAL.
6. WHERE EXISTING CONC. BEHIND STRIP IS SHOWN BY THE SCALE, IT IS TO BE REINFORCED.
7. WHERE CONSTRUCTION SUGGESTS THAT UNDESIRABLE BEARING CAPACITY EXISTS, HEAVY SOILS MAY REQUIRE LARGER THRUST BLOCKS.

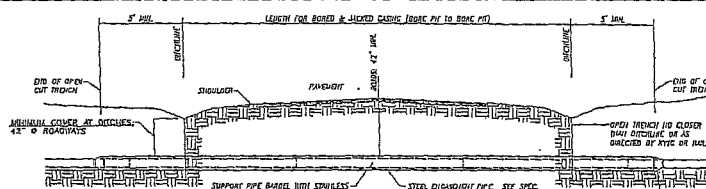
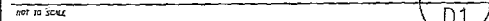
### CONCRETE THRUST BLOCKS



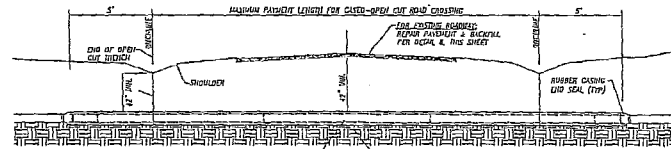
### PVC PIPE (IF NEEDED) BEDDING & BACKFILL - SOIL



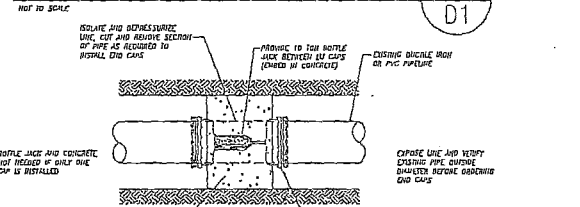
### ACCESS ROAD DETAIL



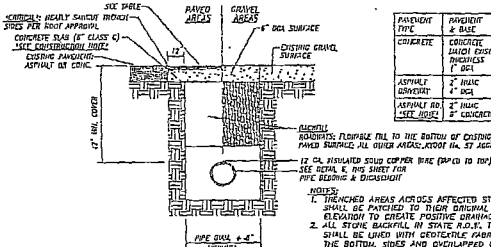
### STEEL CASED ROAD BORE



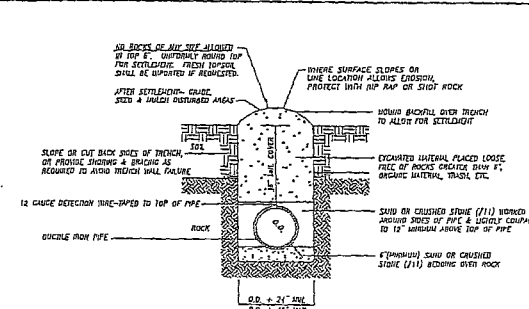
### CASED-OPEN CUT ROAD CROSSING



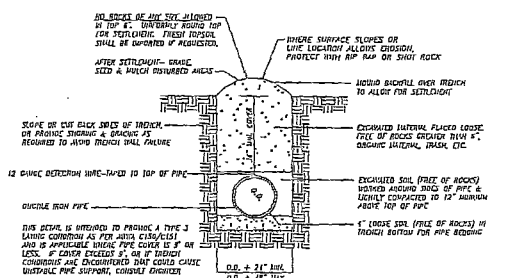
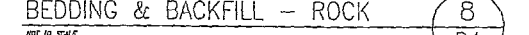
### CUT & PLUG EXISTING LINE DETAIL



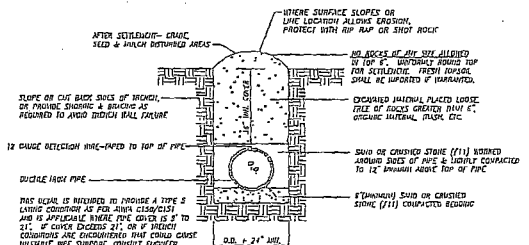
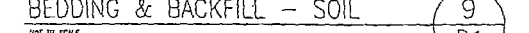
### PAVEMENT BACKFILL & REPAIR



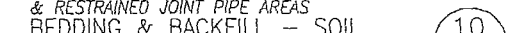
### DUCTILE IRON PIPE - ALL DEPTHS BEDDING & BACKFILL - ROCK



### DUCTILE IRON UP TO 9' COVER BEDDING & BACKFILL - SOIL



### DUCTILE IRON 9' - 21' COVER & RESTRAINED JOINT PIPE AREAS BEDDING & BACKFILL - SOIL



**Quality On Tap!**

Contract 1 - Water Line & Meter Station  
Water Line Details

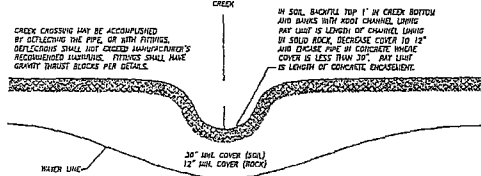
Todd County Water District  
NOVELIS WATER SUPPLY PROJECT

DESIGN: CMW, CHK BY: CMW  
DRAWN BY: CMW, APP BY: CMW  
SCALE: AS SHOWN  
PROJECT DATE: 2018

FIRM: MCGHEE ENGINEERING, INC.  
202 BINGHAM STREET  
GUTHRIE, NY 13224  
(518) 735-1850

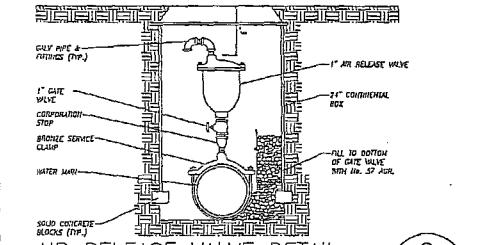
TODD COUNTY  
Water District  
P.O. Box 570  
Guthrie, NY 13224  
(518) 735-1850

DRAWING NO. SHEET D-1

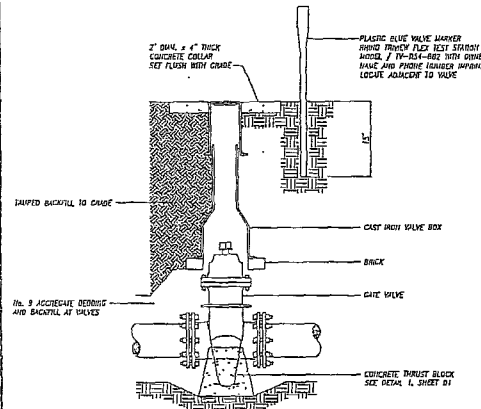


WHERE ENCASED IN CONCRETE (IE ROCK)  
 PROVIDE 3/4\"/>

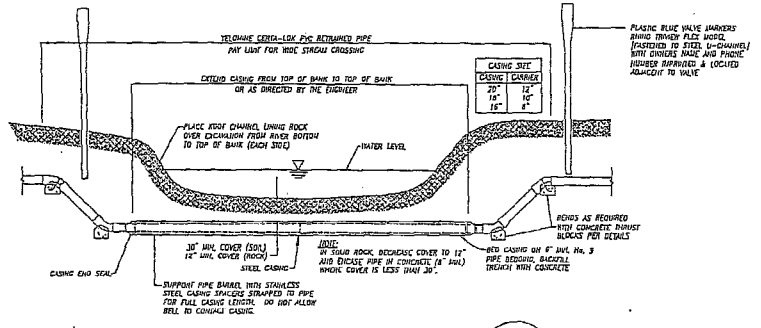
**SHALLOW DITCH/CREEK X-ING** 1  
 NOT TO SCALE D2



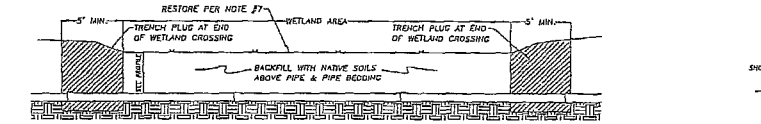
**AIR RELEASE VALVE DETAIL** 2  
 NOT TO SCALE D2



**VALVE SETTING DETAIL** 3  
 NOT TO SCALE D2

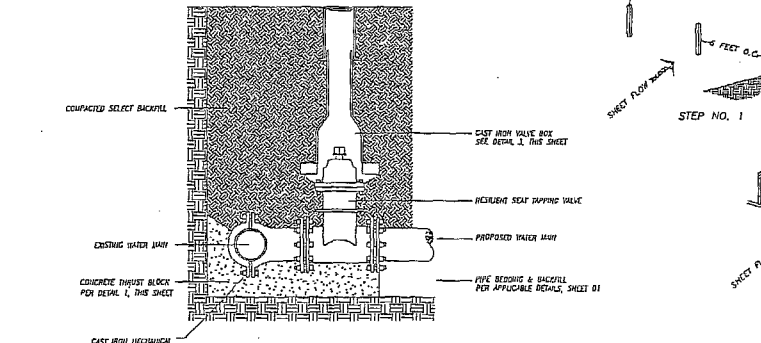


**WIDE STREAM CROSSING DETAIL** 4  
 NOT TO SCALE D2

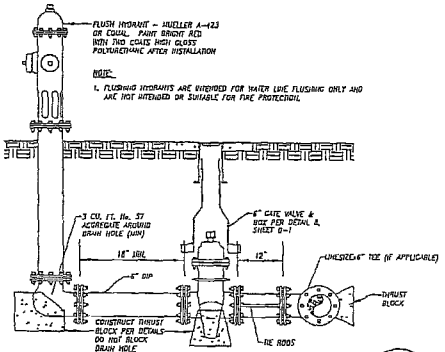


- GENERAL NOTES**
- TRENCH PLUG SHALL CONSIST OF CLAY CONTAINING NO MORE THAN 15% STONE, NOT LARGER THAN 2" DIA. CLAY SHALL BE PLACED IN 4" LIFTS & COMPACTED BY MECHANICAL TAMPER TO NO LESS THAN 95% MAX. DENSITY.
  - TRENCH PLUGS SHALL BE INSTALLED AT EDGES OF ALL WETLANDS TO PREVENT TRENCH FROM DRAINING AREA.
  - TRENCH WIDTH AND DISTURBANCE SHALL BE KEPT TO A MINIMUM. RESTORE ORIGINAL GRASSES THROUGHOUT.
  - PROTECT AND PRESERVE VEGETATION TO THE MAXIMUM EXTENT POSSIBLE. MOVING OF FILL MATERIAL TO ALLOW FOR SETTLEMENT IN TRENCH IS PROHIBITED.
  - MINIMIZE EROSION & PRECLUDE ITS ENTERING WETLAND AREA.
  - BACKFILL: THE TOP 6" OF TOPSOIL SHALL BE STRIPPED & SALVAGED PRIOR TO TRENCHING. AFTER TRENCHING, THE UPPER 6" OF BACKFILL SHALL BE RETURNED WITH THE NATIVE TOPSOIL. TOP 2" SHALL NOT BE COMPACTED.
  - PERMANENT RESTORATION SEEDING: REPLANT OR RESEED WITH INDIGENOUS WETLAND PLANTS OR NATIVE SEEDINGS, LEAVING NO BARE SPOTS AND MULCHED WITH SMALL GRASS STRAW.

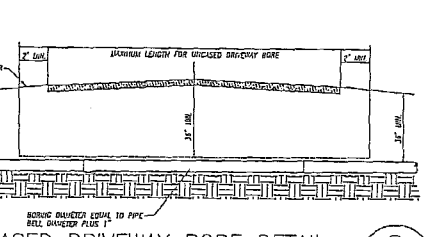
**WETLAND CROSSING X-SECTION** 5  
 NOT TO SCALE D2



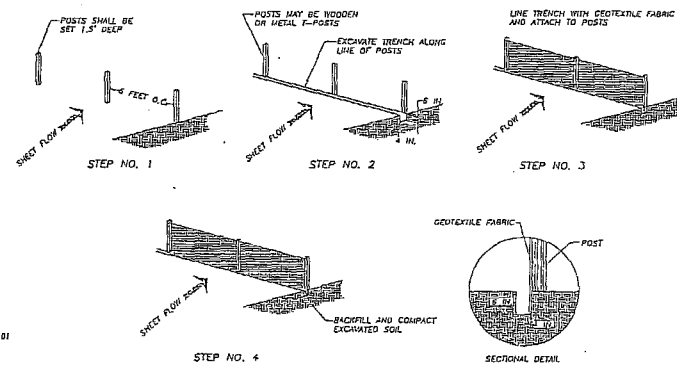
**TAPPING SLEEVE & VALVE** 6  
 NOT TO SCALE D2



**FLUSHING HYDRANT DETAIL** 7  
 NOT TO SCALE D2



**UNCASED DRIVEWAY BORE DETAIL** 8  
 NOT TO SCALE D2



**SILT FENCE DETAIL** 9  
 NOT TO SCALE D2

DATE	BY	CHKD	APP'D

**TODD COUNTY**  
 Public Utilities  
**MCGHEE**  
 Environmental  
 P.O. Box 230  
 Carrollton, TX 75006  
 (214) 483-2233

FRANK McGHEE Engineering, Inc.  
 DES. BY: CWW CHK. BY: MWV  
 DWN. BY: CWW APP. BY:  
 SCALE: AS SHOWN  
 PROJECT: WATER 2018  
 DATE: 08/20/18  
 LENGTH OF PAPER: 1'  
 ON ORIGINAL DRAWING

Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 Water Line Details

**Quality On Tap!**



DRAWING NO.  
 SHEET D-2

File No LRN-2018-00733  
 Sheet 4 of 4  
 Enclosure 2



US Army Corps  
of Engineers ®  
Nashville District

# 2017 Nationwide Permit

82 FR 1860

## 12. Utility Line Activities.

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

*Utility lines:* This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of utility lines, including outfall and intake structures. There must be no change in pre-construction contours of waters of the United States. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

*Utility line substations:* This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

*Foundations for overhead utility line towers, poles, and anchors:* This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

*Access roads:* This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into nontidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the

road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to preconstruction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

*Notification:* The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met:

- (1) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;
  - (2) a section 10 permit is required;
  - (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;
  - (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area;
  - (5) discharges that result in the loss of greater than 1/10- acre of waters of the United States;
  - (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or
  - (7) permanent access roads are constructed in waters of the United States with impervious materials.
- (See general condition 32.)

(Authorities: Sections 10 and 404)

**Note 1:** Where the utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: For utility line activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Utility line activities must comply with 33 CFR 330.6(d).

Note 3: Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

Note 4: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 5: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 6: This NWP authorizes utility line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

Note 7: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

Note 8: For NWP 12 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require preconstruction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

#### Regional Conditions for the State of Tennessee:

- a. PCN in accordance with NWP General Condition 32 is required for all proposed blasting within waters of the U.S.



US Army Corps  
of Engineers @  
Nashville District

# 2017 Nationwide Permit General Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

## State of Tennessee Regional General Conditions (Applicable to ALL Nationwide Permits):

1. A PCN is required for all proposed activities in *Exceptional Tennessee Waters* and/or *Outstanding National Resource Waters*. A list of known Exceptional Tennessee Waters and Outstanding National Resource Waters can be obtained from the Tennessee Department of Environment and Conservation's website: <https://tn.gov/environment/article/wr-water-resources-data-viewer>. A map of known Exceptional Tennessee Waters and Outstanding National Resource Waters can be obtained from the Tennessee Department of Environment and Conservation's website: <http://tdeconline.tn.gov/dwr/>.
2. All impacts to wetlands/open waters shall be calculated and reported in acres. Stream impacts shall be calculated separately and reported in both linear feet and acres.

## Additional Information

Endangered Species Act: Nationwide Permit General Condition 32, *Pre-Construction Notification*, requires a PCN to be submitted to the District Engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat. To determine if any listed species, critical habitat, migratory birds or other natural resources may be impacted by your proposed project, please consult the U.S. Fish and Wildlife Services' IPAC website: <http://ecos.fws.gov/ipac/>.

Historic Properties: Nationwide Permit General Condition 32, *Pre-Construction Notification*, requires a PCN to be submitted to the District Engineer 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. Information regarding cultural resources and the National Historic Preservation Act, can be reviewed at the National Park Service's website: <http://www.nps.gov/nr/>. A map of non-restricted listed properties on the National Register of Historic Places at can be viewed at: <https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466>

## National General Conditions:

### 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 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 NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

Enclosure 4

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.

Enclosure 4



9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers.

- (a) No 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. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.
- (c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g.,

National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species.

- (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.
- (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed 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. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (d) As a result of formal or informal consultation 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 their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

#### **20. Historic Properties.**

- (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.
- (b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.
- (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed 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, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause 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. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and 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.

- (d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

**21. Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant 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's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
- (b) For NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

- (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
- (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.
- (c) Compensatory mitigation at a minimum one-for-one-ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse 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) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).
- (e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on 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 NWP's, 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)).
  - (5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.
  - (6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (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 NWP's. 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 NWP's.
- (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 dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

**25. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

**26. Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

**27. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

**28. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

**29. Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer.

A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

\_\_\_\_\_  
(Transferee)

\_\_\_\_\_  
(Date)

**30. Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized 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 permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

**32. Pre-Construction Notification.**

- (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. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:
- (1) Name, address and telephone numbers of the prospective permittee;
  - (2) Location of the proposed activity;
  - (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
  - (4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the 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, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
  - (6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
  - (7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that 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 activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

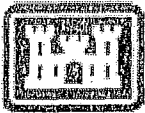
(d) Agency Coordination:

- (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the 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 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line 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 email, 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 email 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 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.

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).



US Army Corps  
of Engineers @  
Nashville District

## COMPLIANCE CERTIFICATION

### YOU ARE REQUIRED TO SUBMIT THIS SIGNED CERTIFICATION REGARDING THE COMPLETED ACTIVITY AND ANY REQUIRED MITIGATION

I hereby certify that the work authorized by Permit No. **LRN-2018-00733** and any required mitigation was done in accordance with the Corps authorization, including any general, regional, or special conditions.

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Permittee Signature

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Date

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative.

Submit this signed certification to the address below:

- U.S Army Corps of Engineers  
Regulatory Division  
3701 Bell Road  
Nashville, TN 37214-266  
Attn: Floyd M. Carnes
- East Regulatory Field Office  
501 Adesa Parkway  
Suite 250  
Lenoir City, TN 37771
- West Regulatory Field Office  
2042 Beltline Road, Southwest  
Building C, Suite 415  
Decatur, Al 35601



MATTHEW G. BEVIN  
GOVERNOR

CHARLES G. SNAVELY  
SECRETARY

ENERGY AND ENVIRONMENT CABINET  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

R. BRUCE SCOTT  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601

**General Certification--Nationwide Permit # 12  
Utility Line Backfill and Bedding**

This General Certification is issued March 19, 2017, 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 and all nationwide permits, the definition of surface water is as per 401 KAR 10:001 Chapter 10, Section 1(80): 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.

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.

For all other operations, 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, 304, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 12, namely Utility Line Backfill and Bedding, provided that the following conditions are met:

1. The activity will not occur within surface waters of the Commonwealth identified by the Kentucky Division of Water as Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters.
2. The activity will not occur within surface waters of the Commonwealth identified as perpetually-protected (e.g. deed restriction, conservation easement) mitigation sites.



General Certification--Nationwide Permit # 12  
Utility Line Backfill and Bedding  
Page 2

3. This general water quality certification is limited to the crossing of surface waters by utility lines. This document does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.
4. For a single crossing, impacts from the construction and maintenance corridor in surface waters shall not exceed 50 feet of bank disturbance.
5. 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 line project where the cumulative impacts exceed ½ acre of wetlands or 300 linear feet of surface waters. 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.
6. Stream impacts under Conditions 4 and 5 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.
7. Any crossings must be constructed in a manner that does not impede natural water flow.
8. Stream impacts covered under this General Water Quality 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 (KWQP).
9. The Kentucky Division of Water may require submission of a formal application for an individual certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
10. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
11. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
12. Utility lines placed 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. The cabinet may allow construction within the 50 foot buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.

13. Utility line stream crossings shall be constructed by methods that maintain flow and allow for a 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.
14. The activities shall not result in any permanent changes in pre-construction elevation contours in surface waters or wetlands or stream dimension, pattern or profile.
15. Utility line activities which impact wetlands shall not result in conversion of the area to non-wetland status. Mechanized land clearing of forested wetlands for the installation or maintenance of utility lines is not authorized under this certification.
16. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:
  - Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
  - Erosion and sedimentation pollution control plans and Best Management Practices 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.
  - 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 of the Commonwealth, 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.
  - Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
  - Removal of riparian vegetation shall be limited to that necessary for equipment access.
  - To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
  - Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., 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

General Certification--Nationwide Permit # 12  
Utility Line Backfill and Bedding  
Page 4

be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

- 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.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- 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.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

WATER QUALITY GENERAL CERTIFICATION  
OF UTILITY LINE ACTIVITIES ALONG STREAMS

IN EFFECT: MARCH 19, 2017

Condition 12 of the March 19, 2017 Section 401 Water Quality Certification (WQC) of the U.S. Army Corps of Engineers' Nationwide Permit (NWP) # 12 Utility Line Backfill and Bedding states:

*Utility lines placed 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. The cabinet may allow for construction within the 50-ft buffer if avoidance and minimization efforts are shown and adequate methods are utilized to prevent soil from entering the stream.*

If a utility line project qualifies for a general certification of NWP 12 and is within 50 feet of the stream bank, a WQC application and a site-specific sediment and erosion control plan must be submitted for review by WQC before construction and construction-related activities can proceed. This is in addition to the Stormwater Pollution Prevention Plans for construction sites one (1) acre or more in size. Approval of the sediment and erosion control plan by the WQC Section is required before construction activities can begin.

WHY SEDIMENT AND EROSION CONTROL PLANS AND PRACTICES?

Construction activities near streams, rivers, and lakes have the potential to cause water pollution and stream degradation if erosion and sediment controls are not properly installed and maintained. In order to effectively reduce erosion and sedimentation impacts, plans and practices must be designed, located, installed, and maintained in effective operating condition at all times during land disturbing activities to prevent the discharge of sediment and other pollutants into waters of the Commonwealth. Sediment is a major contributor to the pollution of surface waters in Kentucky and construction activities are a major source of sediment and stream siltation. Disturbed soil, if not managed properly, can be washed off-site during storms and can cause major impairment in the receiving waters. Excessive silt causes adverse impacts such as disruption of aquatic organism life cycles, reduced passage, higher drinking water treatment costs for sediment removal, and the alteration of waters' physical/chemical properties, resulting in degradation of its quality. Therefore, erosion prevention and sediment control practices are the key parameter for successful water quality protection.

Applicants should design the site construction and development by selecting erosion prevention and sediment controls and practices to accommodate the unique hydrologic and geologic conditions of the site. Some of the factors to be considered include: local development requirements and/or codes, precipitation patterns for the area when the project will be underway, soil types, slopes, layout of structures for the site, sensitivity of nearby waters and natural areas, and safety concerns. A number of structural practices (e.g., mulching, vegetated buffer strips, grassed swales, retention/detention ponds, silt fence and hay bale barriers, stone check dams, inlet protection, infiltration practices) and non-structural practices (minimizing disturbance, good housekeeping) have shown to be efficient, cost effective, and versatile for construction site developers to implement.

EROSION PREVENTION AND SEDIMENT CONTROL STRATEGIES

Appropriate erosion prevention and sediment control measures and other stormwater management practices must be designed, installed, and maintained. Applicants are encouraged to perform work within

surface waters during periods of low-flow or no-flow. To ensure that all sources of soil erosion and sediment on the construction site are adequately controlled, the following strategies should be employed:

- Sediment and erosion control measures shall not be placed in surface waters. The design and placement of temporary erosion control measures shall not be conducted in a manner that may result in disruption of flow in wetlands or streams.
- Maximize the protection of existing vegetation. Natural vegetation should be retained, protected or supplemented to the maximum extent practical, and vegetation not intended for removal should be adequately marked, fenced, or flagged as necessary.
- Avoid disturbing critical areas. Areas such as sinkholes, streams, wetlands, stream buffers, highly erodible soils, and steep slopes should be avoided to the greatest extent feasible. Mark, fence or flag areas in the field that should be protected from construction activities such as clearing, grubbing, grading, mowing, staging activities, material storage and/or other related activities.
- Minimize size and duration of disturbed soil. Limit site preparation of activities such as grading and clearing to where they are absolutely necessary and consistent with plan and daily schedules of construction activities.
- Manage stormwater. Prevent stormwater from entering areas and leaving areas of disturbed soil by using vegetated strips, diversion dikes and swales, filter berms, sediment traps and basins, check dams, stabilized construction entrances, and silt fences or filter tubes/wattles. Reduce the amount of sediment and water velocity produced from areas of disturbed soils by using vegetation, riprap, sod, seeding and mulching or blankets, as well as the use of structural measures including diversion, check dams, slope drains, and storm drain protection.
- Stabilize soils. Stabilize soil with seeding and mulch as soon as possible after disturbance. Soil disturbed by construction activities should be stabilized within 14 days of ceasing construction activities. Erosion prevention measures such as erosion control mats/blankets, mulch, hydro applications, tracking, or soil binders shall be implemented on disturbed areas within 24 hours or as soon as practical after completion of disturbance/grading or following the end of activities. Final stabilization practices shall be initiated on any site where construction activities have been suspended for more than 180 days.
- Use low-impact/biological/recyclable materials. To the extent possible, construction managers should utilize natural or recyclable materials as temporary measures than can remain on-site after the completion of construction. One example is using mulch berms as opposed to silt fences, which must be removed and disposed after the completion of construction activities has occurred and vegetation has become well-established. This also reduces waste and removal costs.

#### SEDIMENT AND EROSION CONTROL PLAN REQUIREMENTS

Erosion prevention and sediment control plans submitted to WQC must contain detailed drawings, a site description and supporting information (narrative), including the following:

1. Narrative discussion of why the utility line must be placed within 50 feet of the top of the stream bank;
2. Construction details with dimensions, cross-sectional views and plan views to scale, showing location of utility lines and all surface waters;
3. Site development plan with the proposed construction area and construction-related activities areas clearly outlined, estimated project start and end dates, project type and description of all construction activities at the site;

4. The location of all surface waters on a 7.5 Minute topographical map, including streams, wetlands, sinkholes, and stormwater discharges from the site;
5. The types, depth, slope, locations and limitations of the soils and geology, natural landscape features, drainage patterns, flooding potential, and other pertinent information that helps identify both beneficial conditions and potential problems of a site;
6. Locations of temporary and permanent erosion, sediment, and stormwater management structures; construction details with dimensions, cross-sectional views and/or plan views with enough information for the reviewer and contractor to understand how to install the practice;
7. Approximate slopes anticipated after major grading activities;
8. Areas of soil disturbance, including an outline of areas which are not to be disturbed;
9. Location and technical specifications of any bank stabilization;
10. Location and boundaries of buffer zones, if any, existing or established to protect waters of the Commonwealth located within the boundaries of the project;
11. Locations of stockpile and/or borrow areas;
12. Separate sheets for staged plans to show detail, including the clearing and grubbing phase, initial grading plan with perimeter control and the final grading plan with final erosion prevention and sediment control plans and stormwater management controls in place.

Approved plans and specifications for projects are incorporated by reference and are enforceable parts of a certification. Any changes to the approved plans or specifications require written approval by WQC. For questions or clarifications, contact the Water Quality Certification Section at (502) 564-3410

## REFERENCES

Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Stormwater Discharge Associated with Construction Activities (KYR10). Locate on line at:

<http://water.ky.gov/permitting/Pages/WastewaterDischarge.aspx>

Best Management Practices (BMPs) for Controlling Erosion, Sediment, and Pollutant Runoff from Construction Sites. Planning and Technical Specifications Manual for Stormwater Pollution Prevention Plans. Revised October 2009. Technology Transfer Program, Kentucky Transportation Center, University of Kentucky.

General Certification of Nationwide Permit #12, Utility Line Backfill and Bedding, 2017. Locate on line at: <http://water.ky.gov/permitting/Pages/CertificationNationwidePermits.aspx>



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Kentucky Ecological Services Field Office  
330 West Broadway, Suite 265  
Frankfort, Kentucky 40601  
(502) 695-0468

July 2, 2018

Ms. Amy Frogue  
Pennyrile Area Development District  
300 Hammond Drive  
Hopkinsville, KY 42240

Re: FWS 2018-B-0280; Todd County Water District and Pennyrile Rural Electric Cooperative; Construction of Basic Infrastructure for the Novelis Industries Site; Todd County, Kentucky

Dear Ms. Frogue:

The U.S. Fish and Wildlife Service (Service) has reviewed a May 29, 2018 habitat assessment and a June 22, 2018 presence/probable absence survey report for Indiana bats (*Myotis sodalis*) and northern long-eared bats (*Myotis septentrionalis*) prepared by Third Rock Consultants, LLC (Third Rock). The Service offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*)

#### **Project Description**

Todd County Water District and Pennyrile Rural Electric Cooperative are in the process of seeking federal funds to install natural gas, sewer, water, and electric infrastructure to the site of the recently announced Novelis Industries site in Guthrie, Kentucky. As proposed, the federally-funded work would consist in the following:

- Todd County Water District - approximately 11,000 linear feet of 12" waterline route along US Highway 79 (north side of roadway), from KY 848 to CSX Railroad; construction of a 500,000 gallon tank on the Novelis industrial site (100x100 tank site).
- City of Guthrie - approximately 3,500 linear feet of 12" gravity sewer line route cross country from KY 346 towards the Novelis site (through trees and crossing CSX); will require railroad permit for bore
- City of Guthrie - approximately 11,600 linear feet of 6" steel natural gas line route along US Highway 79, starting at the state line on Port Royal Road to the Novelis site; will require railroad permit for bore.



- Pennyriple Rural Electric Cooperative - construction of a new substation located on an undeveloped site on KY 346 (opposite Hopkinsville Elevator) on 1-2 acre lot; power lines will be overhead across the road to the Novelis site.

**Indiana Bat** (*Myotis sodalis*)

**Northern Long-eared Bat** (*Myotis septentrionalis*)

The proposed project is located in “potential” habitat for the Indiana bat and the northern long-eared bat. These species winter in caves, rock shelters, and abandoned underground mines. During the summer they roosts in trees, which usually have, cracks, crevices, broken tops, broken limbs, or sloughing bark, and forage in and around forested habitat.

The May 29, 2018 habitat assessment states that no cave or cave-like habitat is present within the project area; however, the proposed project will result in the removal of suitable habitat along 0.5 mile of sewer line. The June 22, 2018 presence/probable absence survey report prepared by Rain Storm, a Third Rock senior ecologist, stated that no federally-listed bats were captured over the survey period. Based on the information available, Indiana bats and northern long-eared bats are likely absent from the project area. Therefore, the Service would concur with a “may affect – not likely to adversely affect” determination for these species.

**Gray Bat** (*Myotis grisescens*)

Gray bats roost, breed, rear young, and hibernate in caves or cave-like features year round and forage on a variety of flying aquatic and terrestrial insects present along streams, rivers, and lakes. According to the habitat assessment conducted by Third Rock, no cave or cave-like habitat exists within the project area of this project. In addition, impacts to this species due to the loss of foraging habitat will be insignificant (i.e., impact would not reach the scale where take occurs) because riparian corridors containing additional suitable foraging habitat exist nearby.

Based on the information available, direct effect to the species will be avoided due to the lack of roosting habitat. In addition, indirect effects resulting from the loss of foraging habitat will be insignificant. Therefore, the Service would concur with a “may affect – not likely to adversely affect” determination for the gray bat.

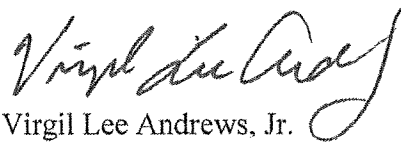
The comments provided on this letter are based on the current information available to us. The Service’s comments or concerns might change, however, if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated before the project is completed.

Ms. Amy Frogue

3

Thank you again for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions regarding the information that we have provided, please contact Santiago Martin at (502) 695-0468 extension 116 or [santiago\\_martin@fws.gov](mailto:santiago_martin@fws.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Virgil Lee Andrews, Jr.", written in a cursive style.

Virgil Lee Andrews, Jr.  
Field Supervisor

cc: Ms. Molly C. Foree, Third Rock Consultants, LLC (electronic)  
Mr. Chris Wilcutt, McGhee Engineering (electronic)



MATTHEW G. BEVIN  
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET  
KENTUCKY HERITAGE COUNCIL**

REGINA STIVERS  
DEPUTY SECRETARY

DON PARKINSON  
SECRETARY

THE STATE HISTORIC PRESERVATION OFFICE

410 HIGH STREET  
FRANKFORT, KENTUCKY 40601  
PHONE (502) 564-7005  
FAX (502) 564-5820  
[www.heritage.ky.gov](http://www.heritage.ky.gov)

CRAIG A. POTTS  
EXECUTIVE DIRECTOR  
& STATE HISTORIC  
PRESERVATION OFFICER

October 18, 2018

Mr. Lee Foster  
Principal Investigator  
Pennyrile Archaeological Services, LLC  
526 Beechwood Drive  
Cadiz, KY 42211

Re: Phase I Archaeological Survey of Proposed Utility Improvements for the Novelis Facility in and near Guthrie, Todd County, Kentucky, prepared by Lee Foster of Pennyrile Archaeological Services. Report dated September 17, 2018.

Dear Ms. Foster:

Thank you for your letter and enclosed report concerning the above-mentioned project, received September 19, 2018. The report describes the archaeological survey of utility lines and the location of a proposed water tower for the Novelis facility, Guthrie, Todd County, Kentucky.

The archeological survey consisted of intensive pedestrian survey supplemented by screened shovel probes. During the survey, the investigator identified three archaeological sites, and revisited a historic cemetery adjacent to US Highway 79. Sites 15T080, 15T081, and 15T082 are prehistoric sites, producing stone tool manufacturing remains. The investigator recovered no temporally diagnostic artifacts at these three sites, and encountered no evidence of intact subsurface deposits. The sites may extend beyond the boundaries of the current survey area. Based on these results, the investigator recommended no additional work at these sites, and recommended that the sites were not eligible for the National Register of Historic Places.

Additionally, the investigator recorded a historic cemetery – the Tyler Cemetery – as an above-ground resource (TO-63). The cemetery was recorded by a local historian in the 1970's. The revisit identified all of the graves identified by the local historian. The cemetery is situated adjacent to, but outside, of the current project area. It will be avoided during the proposed utility installation.

After review of the report, we agree with the report's findings. With regards to the archaeological site, we do not agree that the sites are not eligible for the National Register. The boundaries of these sites likely extend beyond the project area, and were likely not to have been fully defined in the current work. Therefore, we do not have sufficient evidence at this point to determine their eligibility for the National Register. However, we do agree that the portions of the sites contained within the current project do not contain deposits significant under National Register Criterion D.

The cemetery's eligibility for listing on the National Register was not assessed, and we will withhold comment on its eligibility at this point. We would recommend that temporary protective fencing is erected at the edge of the Tyler Cemetery during construction activities to ensure avoidance.

In consideration of the report's findings, we would recommend that the proposed utility work will result in **No Effect to Historic Properties**. We accept this report as final and acknowledge receipt of three archival copies.

L. Foster  
Pennyrite Archaeological Services  
Novelis Plant Utility Project  
October 18, 2013  
page 2

If the project design or boundaries change, this office should be consulted to determine the nature and extent of additional documentation that may be needed. In the event of the unanticipated discovery of an archaeological site or object of antiquity, the discovery should be reported to the Kentucky Heritage Council and to the Kentucky Office of State Archaeology in the Anthropology Department at the University of Kentucky in accordance with KRS 164.730. In the event that human remains are encountered during project activities, all work should be immediately stopped in the area and the area cordoned off, and in accordance with KRS 72.020 the county coroner and local law enforcement must be contacted immediately. Upon confirmation that the human remains are not of forensic interest, the unanticipated discovery must be reported to the Kentucky Heritage Council.

Should you have any questions concerning archaeological resources, feel free to contact Chris Gunn of my staff at (502) 892-3615 or [chris.gunn@ky.gov](mailto:chris.gunn@ky.gov). Questions concerning above-ground resources can be directed to Jennifer Ryall at (502) 892-3619 or [jennifer.ryall@ky.gov](mailto:jennifer.ryall@ky.gov).

Sincerely,



Craig A. Potts,  
Executive Director and  
State Historic Preservation Officer

CP: cmg KHC # 52429  
cc: George Crothers (OSA); Gabe Nickell (DLG)

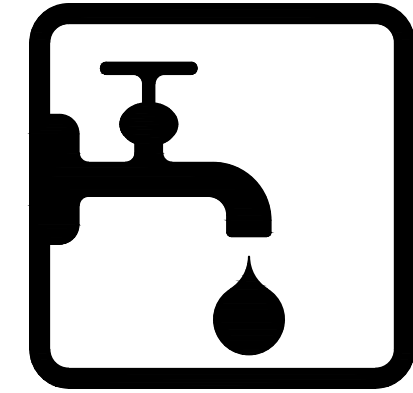
# CONSTRUCTION PLANS

for the

## NOVELIS WATER SUPPLY PROJECT

Contract #1 - Water Line Extension & Meter Station

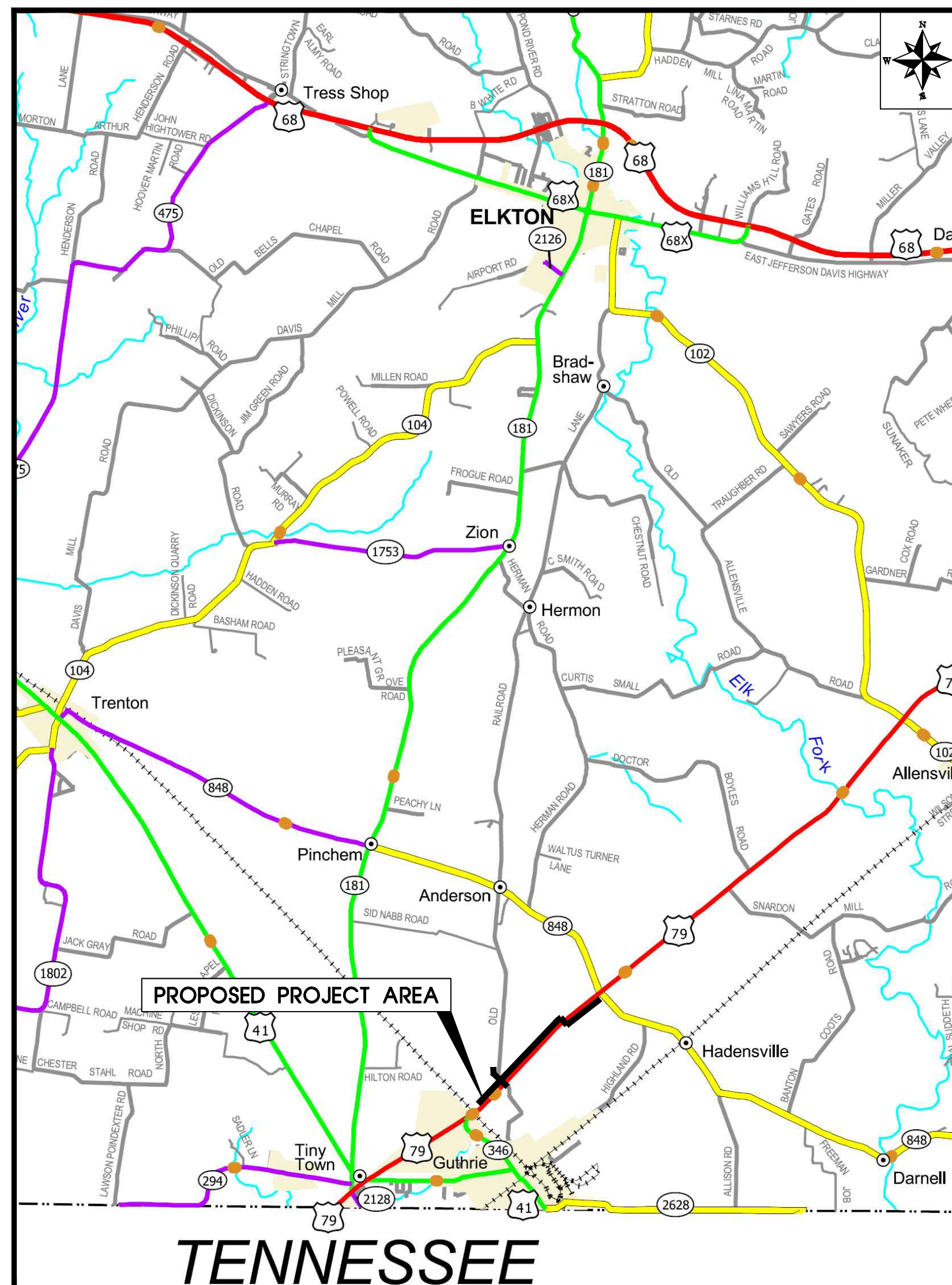
by the



# Todd County Water District

Todd County, Kentucky

VICINITY MAP



SHEET INDEX


### Board of Directors

<i>Dr. George Brown</i>	<i>Chairman</i>
<i>Billy Lear</i>	<i>Commissioner</i>
<i>Ed Slack</i>	<i>Commissioner</i>
<i>Tony Adler</i>	<i>Commissioner</i>
<i>Lois Brown</i>	<i>Commissioner</i>

### Owner

Todd County Water District  
PO Box 520  
Elkton, Kentucky 42220  
(270) 265-2229

### Engineer

 McGhee Engineering, Inc.  
202 Ewing St, Box 267  
Guthrie, Kentucky 42234  
(270) 483-9985

No	Revision	Date	By
1	REVISED ROUTE	11-28-18	CWW
2	FOR KDW REVIEW	08-16-18	CWW

REVISIONS

August 2018

### PROJECT INFORMATION

T-1 Title Sheet

### WATER LINE PLANS

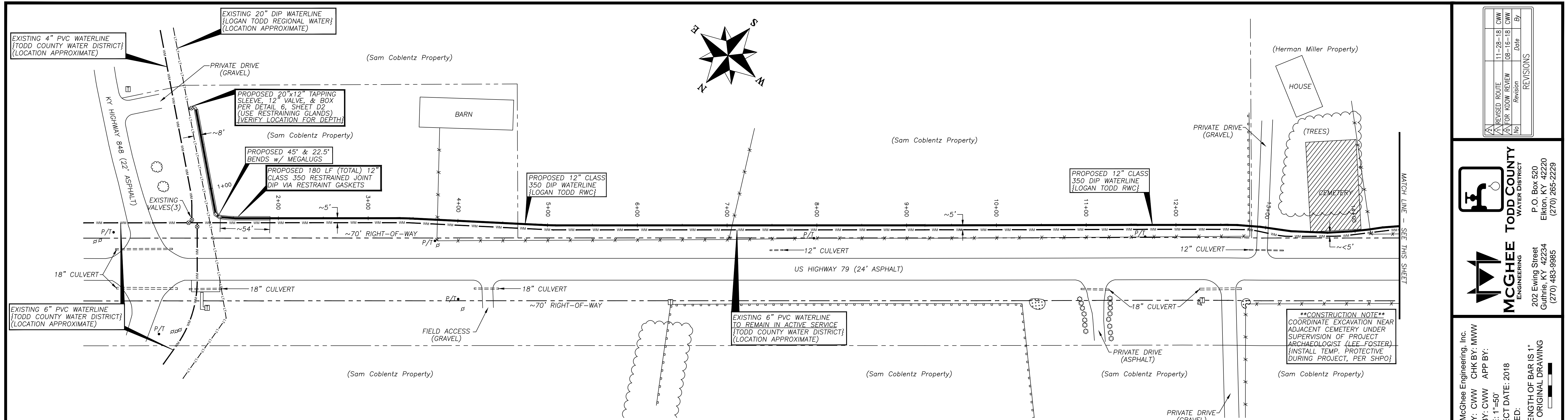
- P-1 US Highway 79 Water Line Plan: Station 0+00 to 30+50
- P-2 US Highway 79 Water Line Plan: Station 30+50 to 61+25
- P-3 US Highway 79 Water Line Plan: Station 61+25 to 91+75
- P-4 US Highway 79 Water Line Plan: Station 91+75 to 106+65
- P-5 Old Railroad Ln. 12" Water Line Relocation: Station 0+00 to 8+90
- US Highway 79 6" Water Line Relocation: Station 0+00 to 7+50

### WATER LINE DETAILS

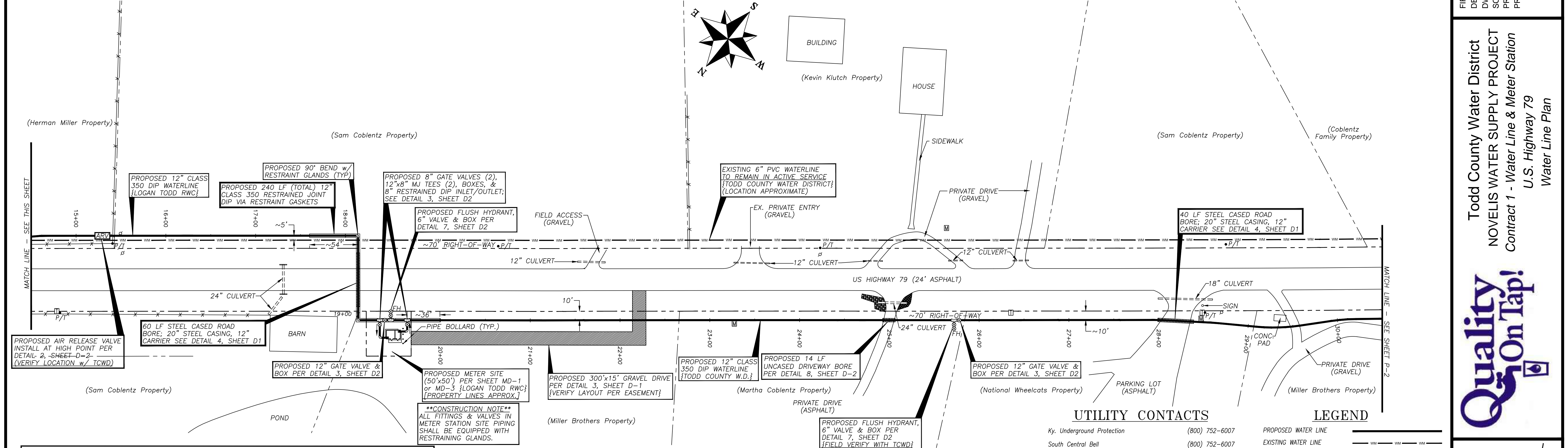
- D-1 Water Details
- D-2 Water Details

### METER STATION DETAILS

- MD-1 LTRWC Meter Station Plan (Base Bid - Existing Station)
- MD-2 LTRWC Meter Station Details (Base Bid - Existing Station)
- MD-3 LTRWC Meter Station Plan (Alt. Bid - New Station)
- MD-4 LTRWC Meter Station Details (Alt. Bid - New Station)



WATERLINE PLAN: STATION 0+00 TO 14+50



WATERLINE PLAN: STATION 14+50 TO 30+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. IF BAT OR OTHER ENDANGERED SPECIES ARE ENCOUNTERED, PROMPTLY CONTACT US&W.

**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		LEGEND	
Ky. Underground Protection	(800) 752-6007	PROPOSED WATER LINE	—
South Central Bell	(800) 752-6007	EXISTING WATER LINE	—
Pennyrile Rural Electric Coop.	(800) 265-2545	EXISTING LTRWC WATER LINE	—
Texas Gas Pipeline	(800) 626-1948	PROPERTY LINE	—
Western Kentucky Gas	(800) 752-6007	GAS LINE	—
KDOT Division #3: Bowling Green	(270) 746-7898	TELEPHONE LINE	—
Todd County Road Department	(270) 265-5262	RESIDENTIAL METER	⊠
City of Guthrie	(270) 483-2511	PHONE PEDESTAL	⊠
Logan Todd Regional Water Commission	(270) 483-6990	POLE GUY WIRE	—
		POWER/TELEPHONE POLE	• P/T
		VALVE	⊙
		FLUSH HYDRANT	⊙ FH
		GAS METER/REGULATOR	⊠

REVISION	DATE	BY
1	11-28-18	CWW
2	08-16-18	CWW

**McGHEE ENGINEERING**  
 202 Ewing Street  
 Guthrie, KY 42334  
 (270) 483-9985

**TODD COUNTY WATER DISTRICT**  
 P.O. Box 520  
 Elkhorn, KY 42220  
 (270) 265-2229

FIRM: McGhee Engineering, Inc.  
 DES BY: CWW CHK BY: MWW  
 DWN BY: CWW APP BY:  
 SCALE: 1"=50'  
 PROJECT DATE: 2018  
 PRINTED: \_\_\_\_\_  
 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

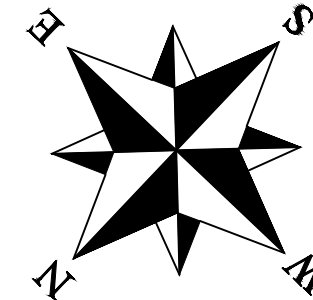
Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 U.S. Highway 79  
 Water Line Plan



August 16, 2018

Chris Wilcutt, P.E.

DRAWING NO. \_\_\_\_\_  
 SHEET P-1



(Coblentz Family Property)

(Coblentz Family Property)

(Coblentz Family Property)

EXISTING 6" PVC WATERLINE TO REMAIN IN ACTIVE SERVICE {TODD COUNTY WATER DISTRICT} (LOCATION APPROXIMATE)

RIP RAP

FIELD ACCESS (GRAVEL)

18" CULVERT

CULVERT & HEADWALLS

US HIGHWAY 79 (24' ASPHALT)

~70' RIGHT-OF-WAY

PROPOSED 12" CLASS 350 DIP WATERLINE {TODD COUNTY W.D.}

(Miller Brothers Property)

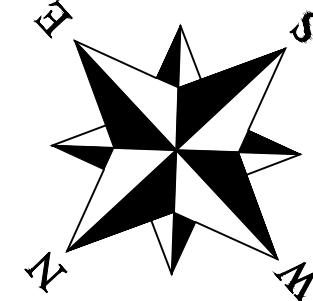
PRIVATE DRIVE (GRAVEL)

PROPOSED 12" CLASS 350 DIP WATERLINE {TODD COUNTY W.D.}

(Miller Brothers Property)

(Miller Brothers Property)

WATERLINE PLAN: STATION 30+50 to 45+50



(Coblentz Family Property)

(Ed Slack Property)

(St. Francis Parish Catholic Church Property)

(Slack Family Property)

PROPOSED 25 LF UNCASSED DRIVEWAY BORE PER DETAIL 8, SHEET D-2

EXISTING 6" PVC WATERLINE TO REMAIN IN ACTIVE SERVICE {TODD COUNTY WATER DISTRICT} (LOCATION APPROXIMATE)

PROPOSED 30 LF SHALLOW DITCH/CREEK CROSSING PER DETAIL 1, SHEET D-2

18" CULVERT

PRIVATE DRIVE (ASPHALT)

US HIGHWAY 79 (24' ASPHALT)

~70' RIGHT-OF-WAY

18" CULVERT

BOX CULVERT & HEADWALLS

PROPOSED 12" CLASS 350 DIP WATERLINE {TODD COUNTY W.D.}

PROPOSED 12" GATE VALVE & BOX PER DETAIL 3, SHEET D2

PROPOSED ~300 LF WETLAND X-ING PER DETAIL 5, SHEET D2 {IMPACT AREA C: STA. ~55+00 TO ~58+00}

PROPOSED 12" CLASS 350 DIP WATERLINE {TODD COUNTY W.D.}

PROPOSED ~125 LF WETLAND X-ING PER DETAIL 5, SHEET D2 {IMPACT AREA D: STA. ~60+00 TO ~61+25}

(Calvin Jones Property)

PRIVATE DRIVE (ASPHALT)

PROPOSED FLUSH HYDRANT, 6" VALVE & BOX PER DETAIL 7, SHEET D2

(Coblentz Family Property)

WATERLINE PLAN: STATION 45+50 to 61+25

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>8"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED. IF BAT OR OTHER ENDANGERED SPECIES ARE ENCOUNTERED, PROMPTLY CONTACT USF&W.

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	(800) 752-6007
South Central Bell	(800) 752-6007
Pennyrile Rural Electric Coop.	(800) 265-2545
Texas Gas Pipeline	(800) 626-1948
Western Kentucky Gas	(800) 752-6007
KDOT Division #3: Bowling Green	(270) 746-7898
Todd County Road Department	(270) 265-5262
City of Guthrie	(270) 483-2511
Logan Todd Regional Water Commission	(270) 483-6990

LEGEND

PROPOSED WATER LINE	—
EXISTING WATER LINE	—
EXISTING LTRWC WATER LINE	—
PROPERTY LINE	—
GAS LINE	—
TELEPHONE LINE	—
RESIDENTIAL METER	Ⓜ
PHONE PEDESTAL	Ⓜ
POLE GUY WIRE	Ⓜ
POWER/TELEPHONE POLE	• P/T
VALVE	⊗
FLUSH HYDRANT	⊗ FH
GAS METER/REGULATOR	⊗

REVISIONS	BY	DATE
FOR KDCW REVIEW	CWW	08-16-18
REVISED ROUTE	CWW	11-28-18

**MCGHEE ENGINEERING**  
 202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985

**TODD COUNTY WATER DISTRICT**  
 P.O. Box 520  
 Elkhorn, KY 42220  
 (270) 265-2229

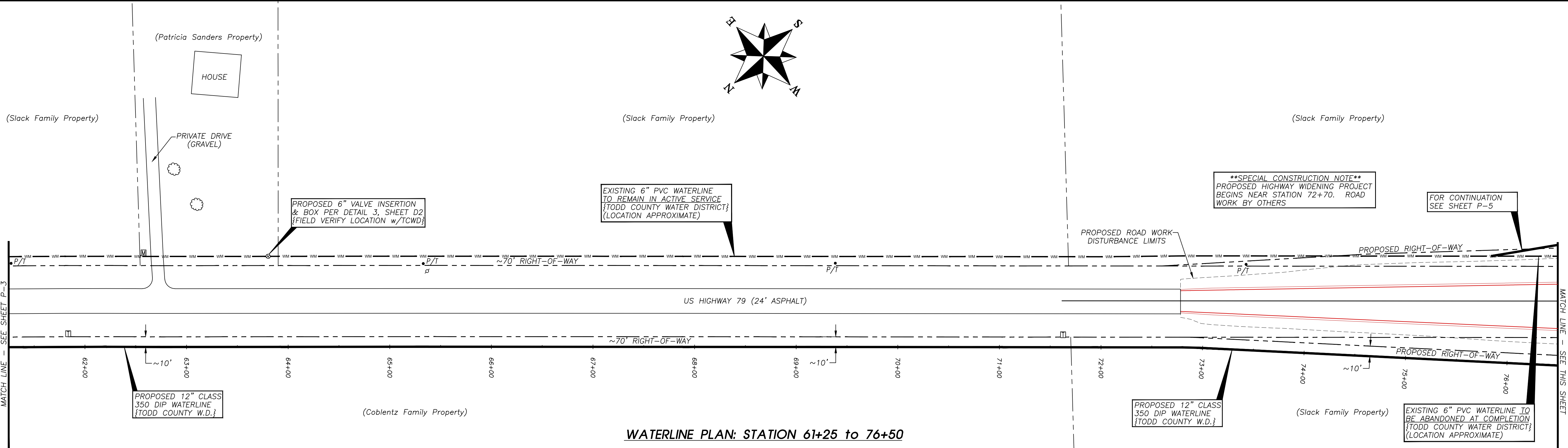
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 DWN BY: CWW APP BY:  
 SCALE: 1"=50'  
 PROJECT DATE: 2018  
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Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
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 Water Line Plan

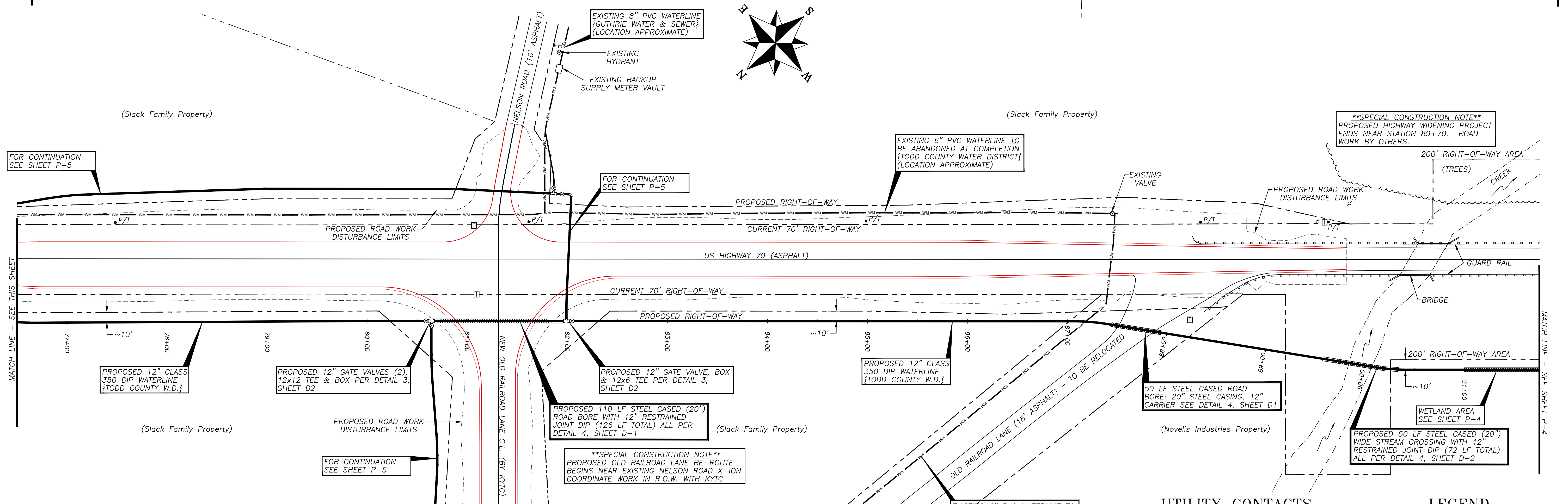


August 16, 2018  
 Chris Wilcutt, P.E.  
 Chris Wilcutt, P.E.

DRAWING NO.  
 SHEET P-2



**WATERLINE PLAN: STATION 61+25 to 76+50**



**WATERLINE PLAN: STATION 76+50 to 91+75**

**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. IF BAT OR OTHER ENDANGERED SPECIES ARE ENCOUNTERED, PROMPTLY CONTACT USF&W.

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**UTILITY CONTACTS**

Ky. Underground Protection	(800) 752-6007
South Central Bell	(800) 752-6007
Pennyrile Rural Electric Coop.	(800) 265-2545
Texas Gas Pipeline	(800) 626-1948
Western Kentucky Gas	(800) 752-6007
KDOT Division #3: Bowling Green	(270) 746-7898
Todd County Road Department	(270) 265-5262
City of Guthrie	(270) 483-2511
Logan Todd Regional Water Commission	(270) 483-6990

**LEGEND**

PROPOSED WATER LINE	—
EXISTING WATER LINE	—
EXISTING LTRWC WATER LINE	—
PROPERTY LINE	—
GAS LINE	—
TELEPHONE LINE	—
RESIDENTIAL METER	Ⓜ
PHONE PEDESTAL	Ⓜ
POLE GUY WIRE	Ⓜ
POWER/TELEPHONE POLE	• P/T
VALVE	⊗
FLUSH HYDRANT	⊗ FH
GAS METER/REGULATOR	⊗

REVISIONS	Date	By
11-28-18		CWW
08-16-18		CWW
FOR KDCW REVIEW		
NO		

**McGHEE ENGINEERING**  
 TODD COUNTY WATER DISTRICT  
 P.O. Box 520  
 Elkhorn, KY 42220  
 (270) 265-2229

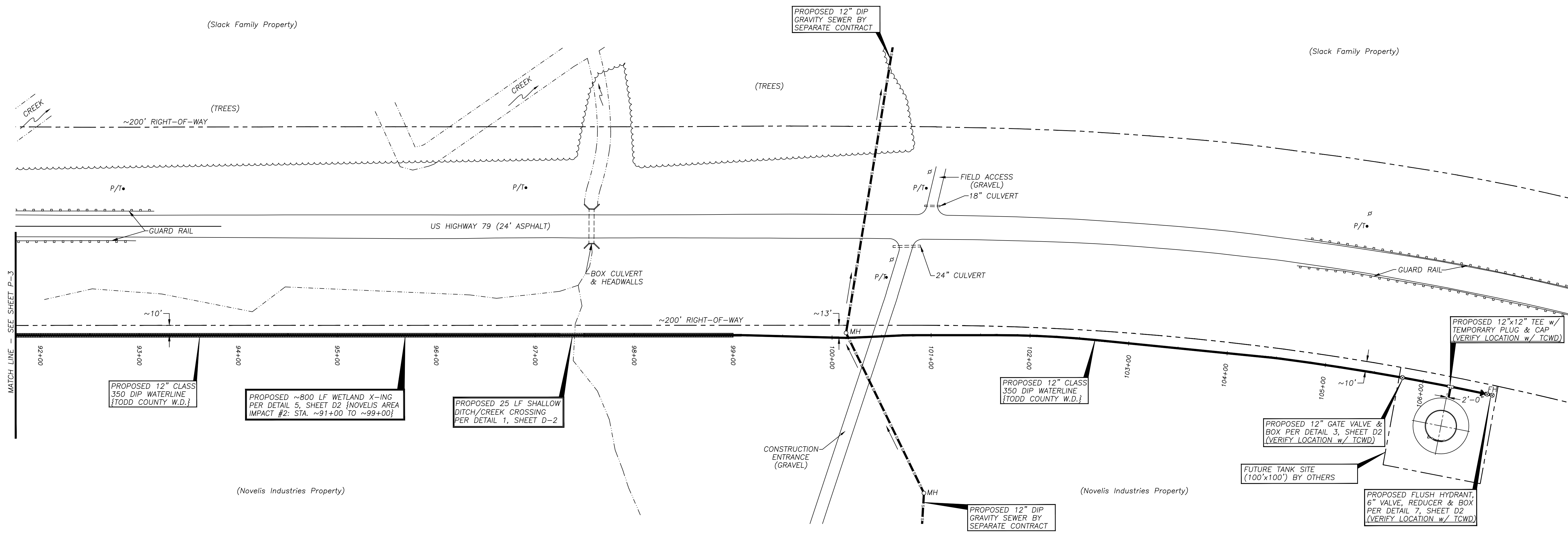
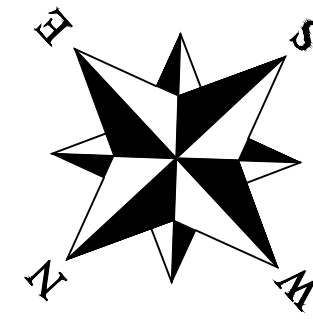
FIRM: McGhee Engineering, Inc.  
 DES BY: CWW CHK BY: MWW  
 DWN BY: CWW APP BY:  
 SCALE: 1"=50'  
 PROJECT DATE: 2018  
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 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT**  
**Contract 1 - Water Line & Meter Station**  
**U.S. Highway 79**  
**Water Line Plan**



August 16, 2018  
 Chris Wilcutt, P.E.  
 DRAWING NO.  
 SHEET P-3





**WATERLINE PLAN: STATION 91+75 to 106+65**

**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>8"), AND TREES NOT IN THE CONSTRUCTION AREA. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF TREES, SHRUBS, ETC. UNNECESSARILY DAMAGED OR REMOVED. IF BAT OR OTHER ENDANGERED SPECIES ARE ENCOUNTERED, PROMPTLY CONTACT USF&W.

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South Central Bell	(800) 752-6007
Pennyrile Rural Electric Coop.	(800) 265-2545
Texas Gas Pipeline	(800) 626-1948
Western Kentucky Gas	(800) 752-6007
KDOT Division #3: Bowling Green	(270) 746-7898
Todd County Road Department	(270) 265-5262
City of Guthrie	(270) 483-2511
Logan Todd Regional Water Commission	(270) 483-6990

**LEGEND**

PROPOSED WATER LINE	— W W W — W W W — W W W —
EXISTING WATER LINE	— W W W — W W W — W W W —
EXISTING LTRWC WATER LINE	— L T — L T — L T — L T — L T — L T —
PROPOSED CUTHRIE SEWER	— S S S — S S S — S S S —
PROPERTY LINE	— P — P — P — P — P — P —
GAS LINE	— G — G — G — G — G — G —
TELEPHONE LINE	— T — T — T — T — T — T —
RESIDENTIAL METER	Ⓜ
PHONE PEDESTAL	Ⓜ
POLE GUY WIRE	Ⓜ
POWER/TELEPHONE POLE	• P/T
VALVE	⊗
FLUSH HYDRANT	⊗ FH
GAS METER/REGULATOR	Ⓜ

REVISIONS	Date	BY
FOR KDCW REVIEW	08-16-18	CWW
REVISED ROUTE	11-28-18	CWW

**MCGHEE ENGINEERING**  
 202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985

**TODD COUNTY WATER DISTRICT**  
 P.O. Box 520  
 Elkhorn, KY 42220  
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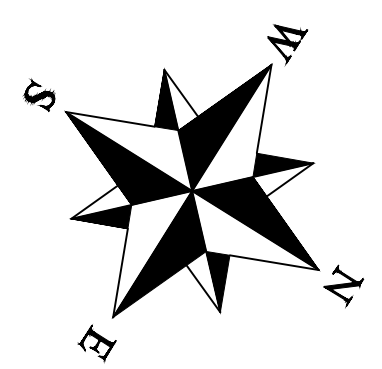
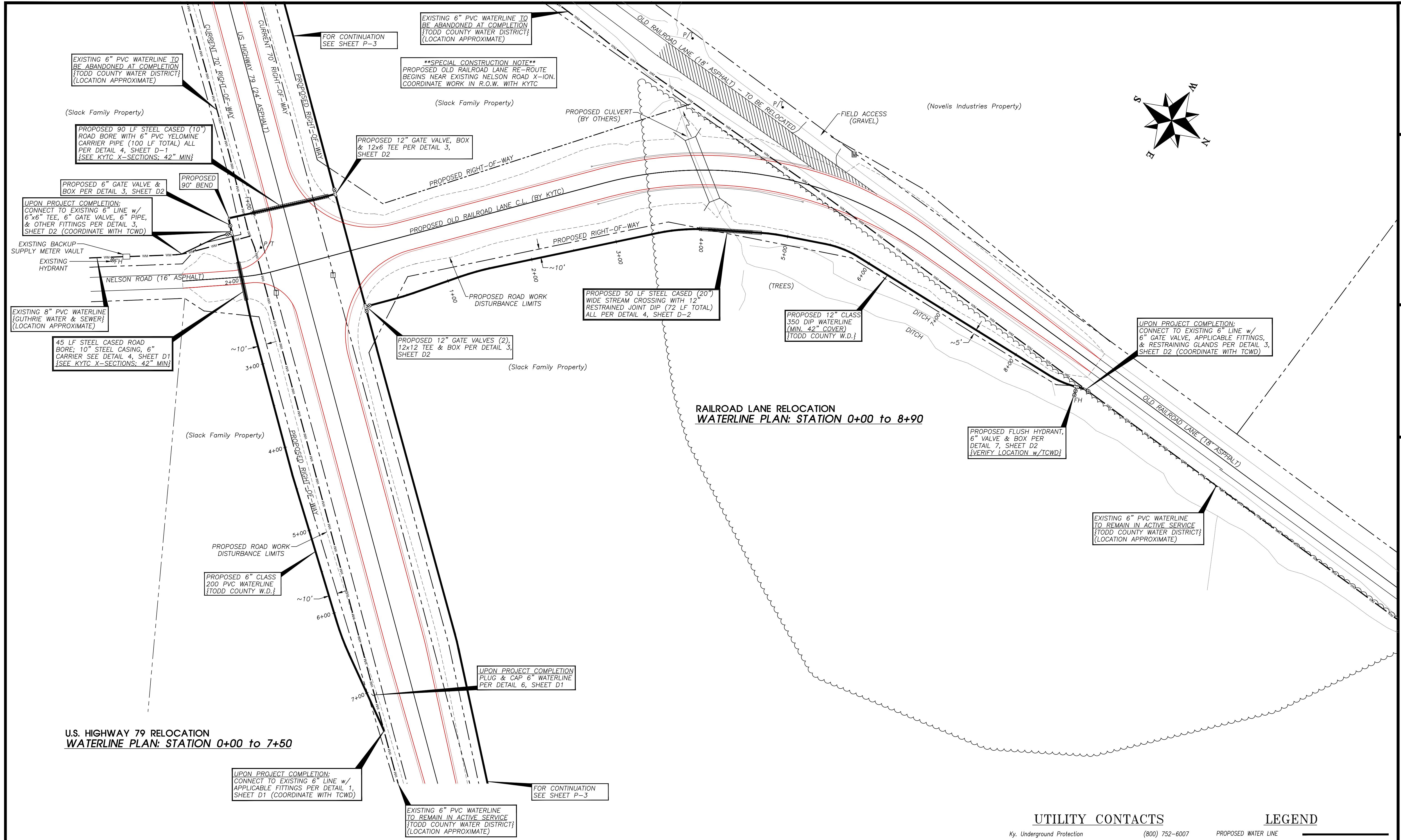
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 DWN BY: CWW APP BY:  
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 ON ORIGINAL DRAWING

**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT**  
**Contract 1 - Water Line & Meter Station**  
**U.S. Highway 79**  
**Water Line Plan**



August 16, 2018  
 Chris Wilcutt, P.E.  
 Chris Wilcutt, P.E.

DRAWING NO.  
 SHEET P-4



REVISIONS	Date	BY
1	11-28-18	CWW
2	08-16-18	CWW

**MCGHEE ENGINEERING**  
**TODD COUNTY WATER DISTRICT**

202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985

P.O. Box 520  
 Elkhorn, KY 42220  
 (270) 265-2229

FIRM: McGhee Engineering, Inc.  
 DES BY: CWW CHK BY: MWV  
 DWN BY: CWW APP BY:  
 SCALE: 1"=50'  
 PROJECT DATE: 2018  
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Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 Old Railroad Lane  
 Water Line Plan



August 16, 2018

CHRIS WILCOX  
 21620  
 PROFESSIONAL ENGINEER

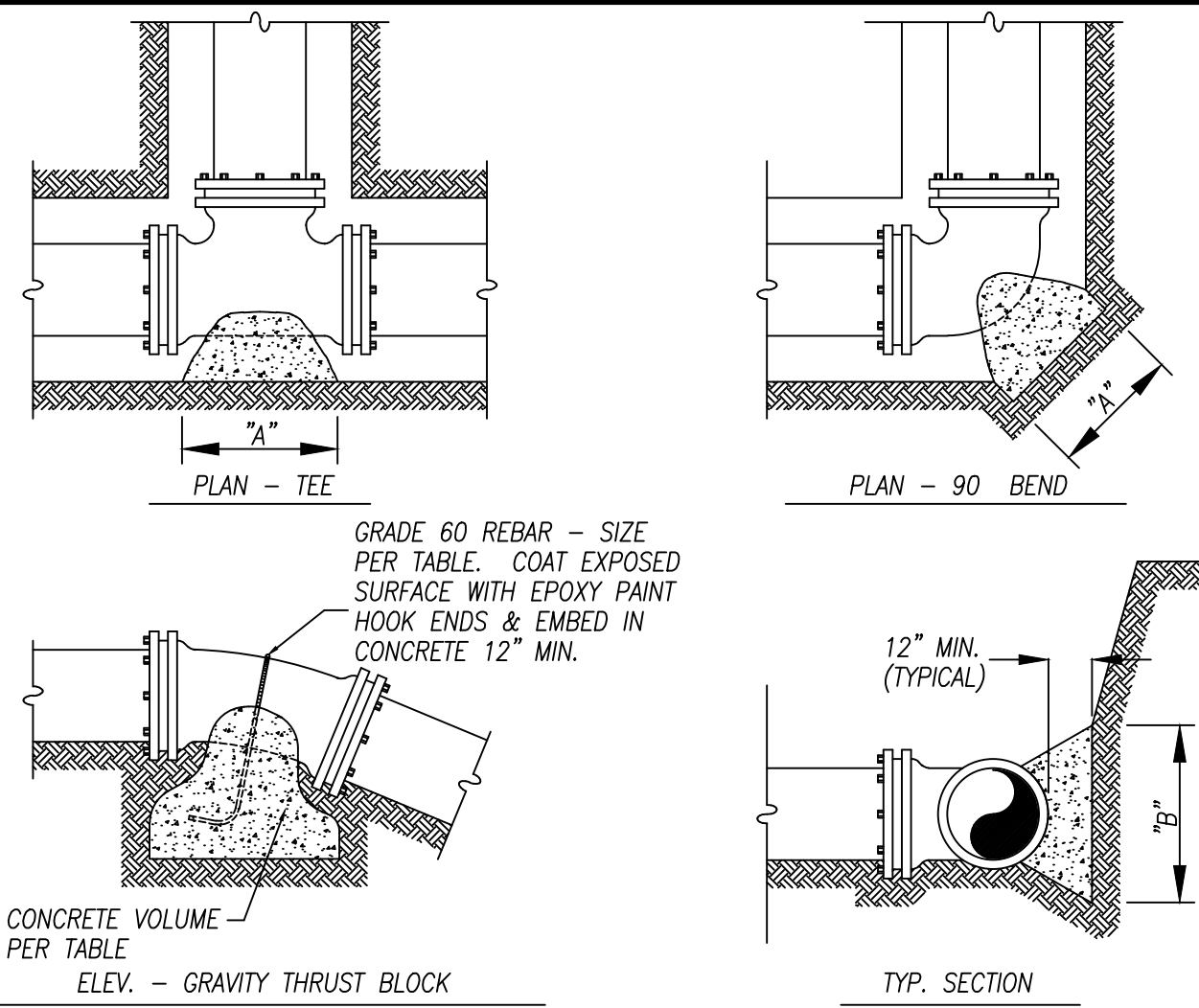
Chris Wilcox, P.E.

DRAWING NO.  
 SHEET P-5

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Western Kentucky Gas	(800) 752-6007	GAS LINE	---
KDOT Division #3: Bowling Green	(270) 746-7898	TELEPHONE LINE	---
Todd County Road Department	(270) 265-5262	RESIDENTIAL METER	Ⓜ
City of Guthrie	(270) 483-2511	PHONE PEDESTAL	Ⓜ
Logan Todd Regional Water Commission	(270) 483-6990	POLE GUY WIRE	—
		POWER/TELEPHONE POLE	• P/T
		VALVE	⊗
		FLUSH HYDRANT	⊗ FH
		GAS METER/REGULATOR	Ⓜ

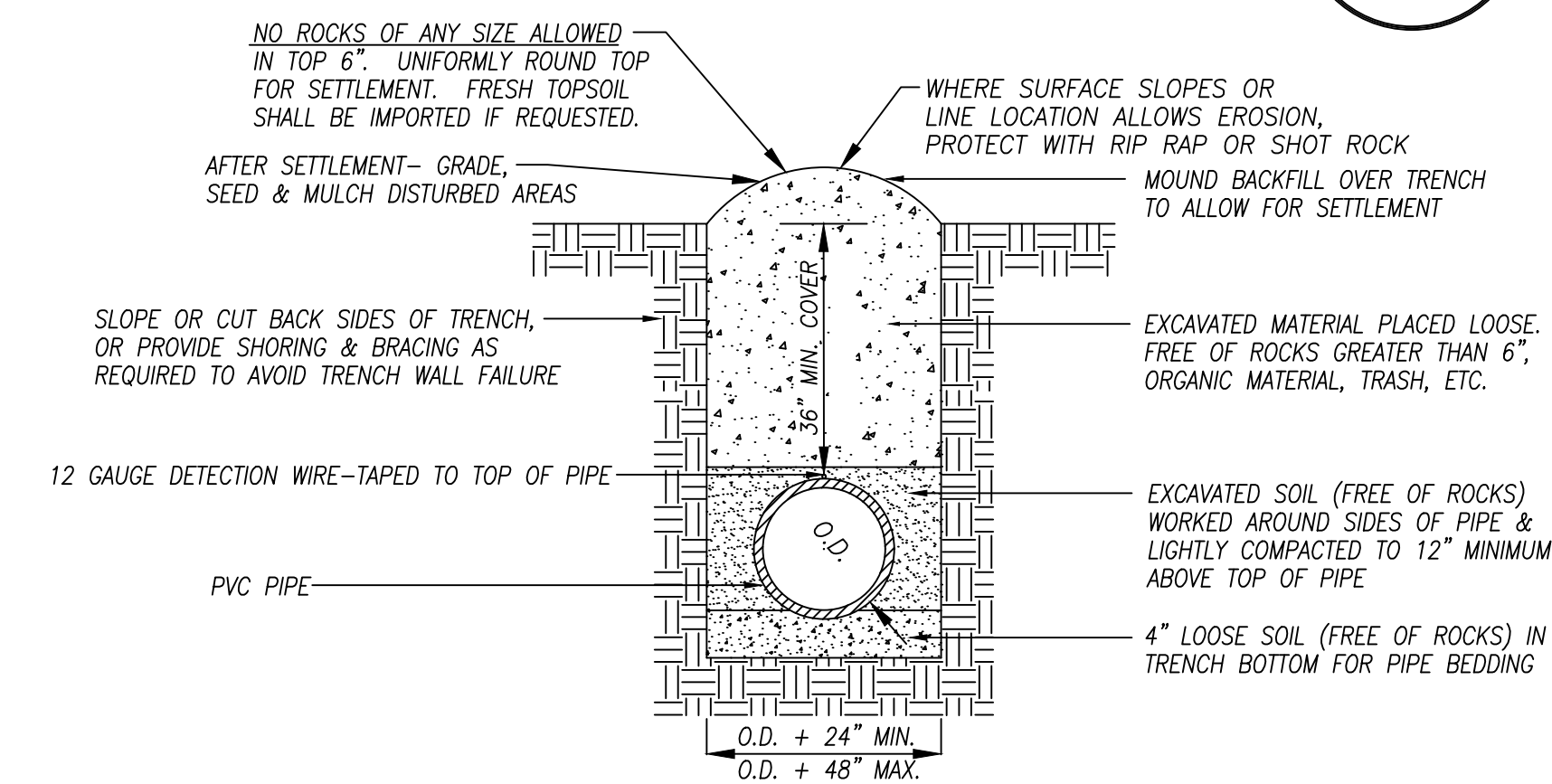


PIPE SIZE	MINIMUM BEARING AREA ("A"x"B") IN SQUARE FEET					MIN. CONC. VOLUME IN CUBIC FEET	REBAR SIZE	
	TEE OR DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND			
2", 3" & 4"	1.0	1.5	1.0	1.0	1.0	2	1.5	#4
6"	2.5	3.0	2.0	1.0	1.0	5	3	#4
8"	4.0	5.5	3.0	1.5	1.0	8	5	#5
10"	6.0	8.5	4.5	2.5	1.5	13	9	#5
12"	8.5	12.0	6.5	3.0	2.0	18	12	2-#5
16"	15.0	21.5	11.5	6.0	3.0	32	21	2-#6

- NOTES
- CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
  - KEEP CONCRETE CLEAR OF JOINTS, GLAND BOLTS, ETC.
  - CONCRETE THRUST BLOCKS SHALL BE CAST AGAINST SOUND, UNDISTURBED EARTH.
  - BEARING AREAS ARE BASED ON 4,000 PSF SOIL BEARING CAPACITY. WEAKER SOILS MAY REQUIRE LARGER THRUST BLOCKS.
  - THRUST BLOCK BEARING AREAS MAY BE REDUCED IN ROCK SUBJECT TO ENGINEER'S APPROVAL.
  - VALVES REQUIRE ONE REBAR STRAP AS SHOWN IN THE TABLE AT EACH END OF THE VALVE.
  - WHERE CONTRACTOR SUSPECTS THAT UNSUITABLE BEARING CONDITIONS EXIST, NOTIFY ENGINEER PRIOR TO CASTING THRUST BLOCK.

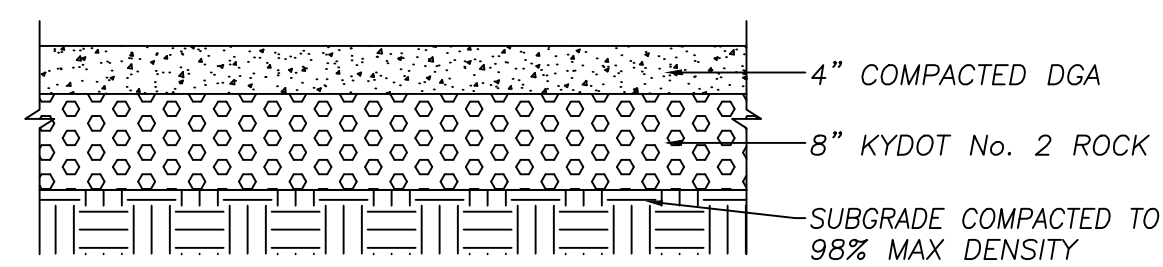
### CONCRETE THRUST BLOCKS

NOT TO SCALE



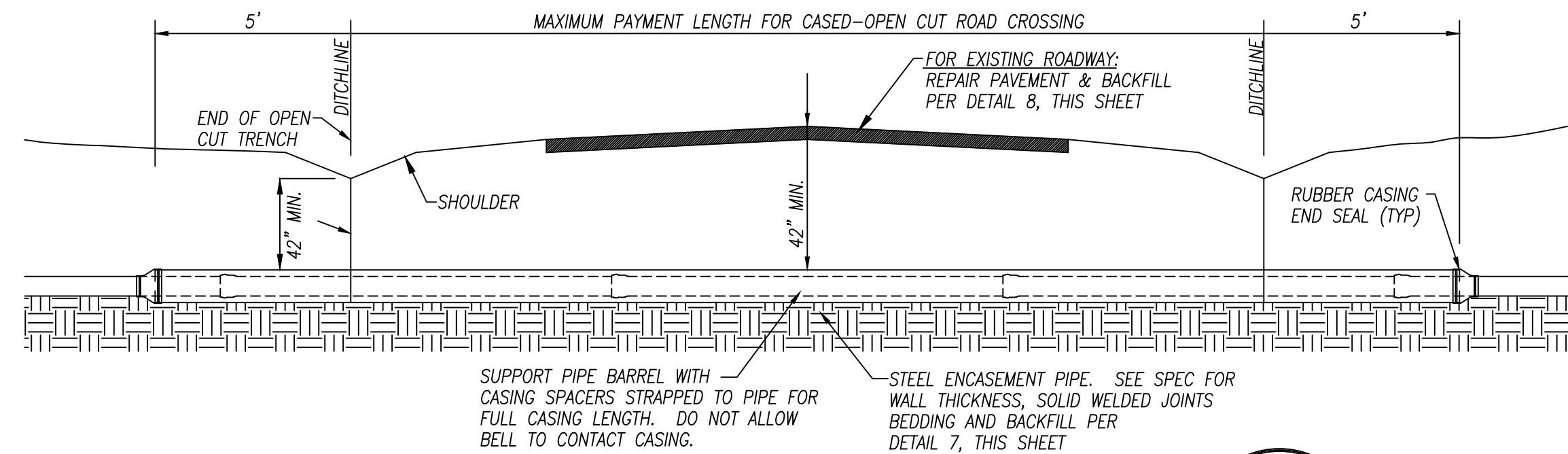
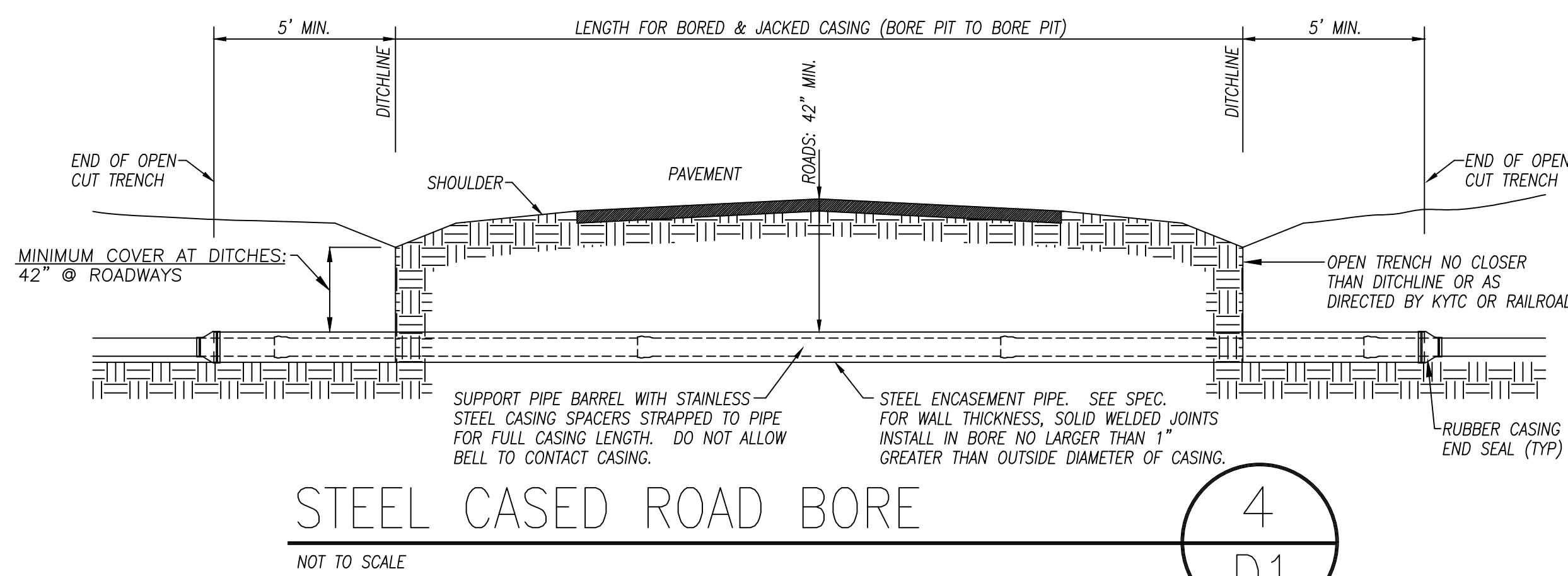
### PVC PIPE (IF NEEDED) BEDDING & BACKFILL - SOIL

NOT TO SCALE



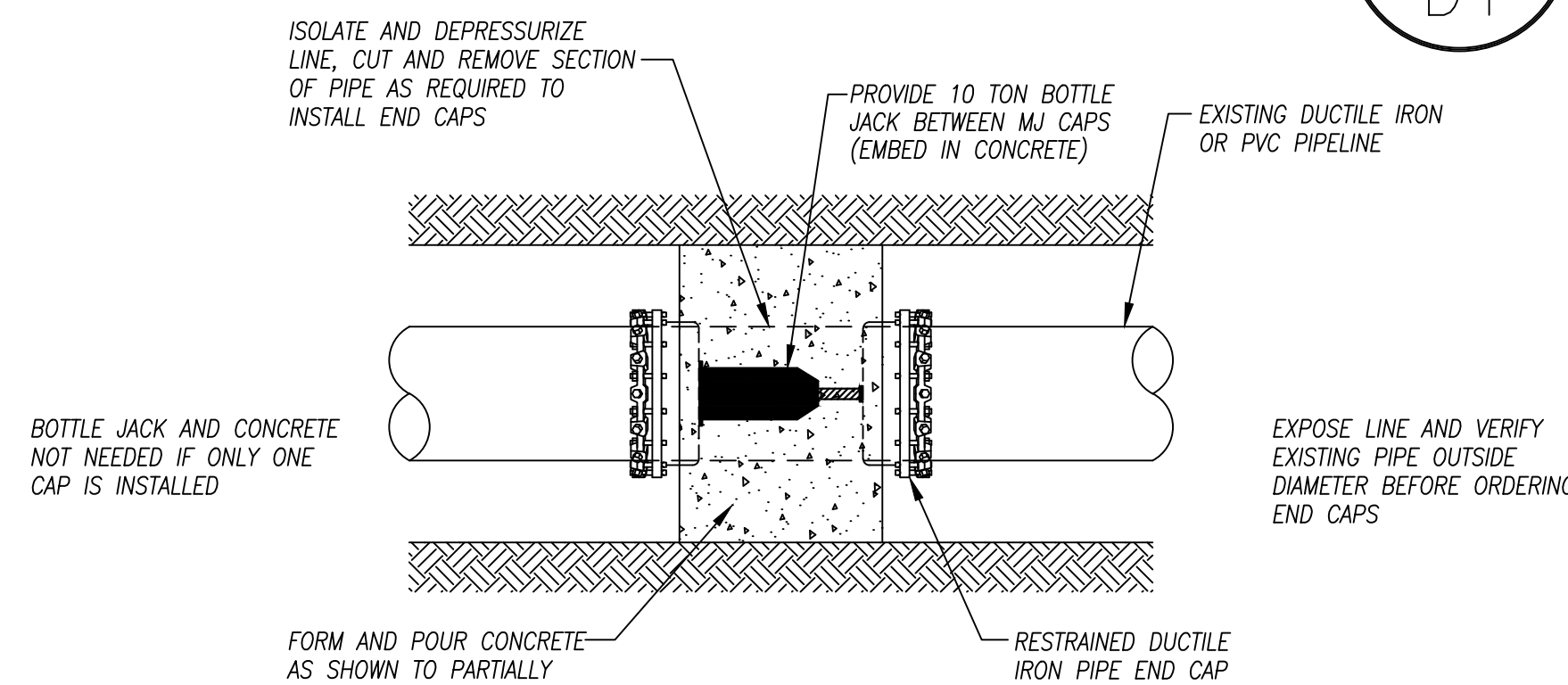
### ACCESS ROAD DETAIL

NOT TO SCALE



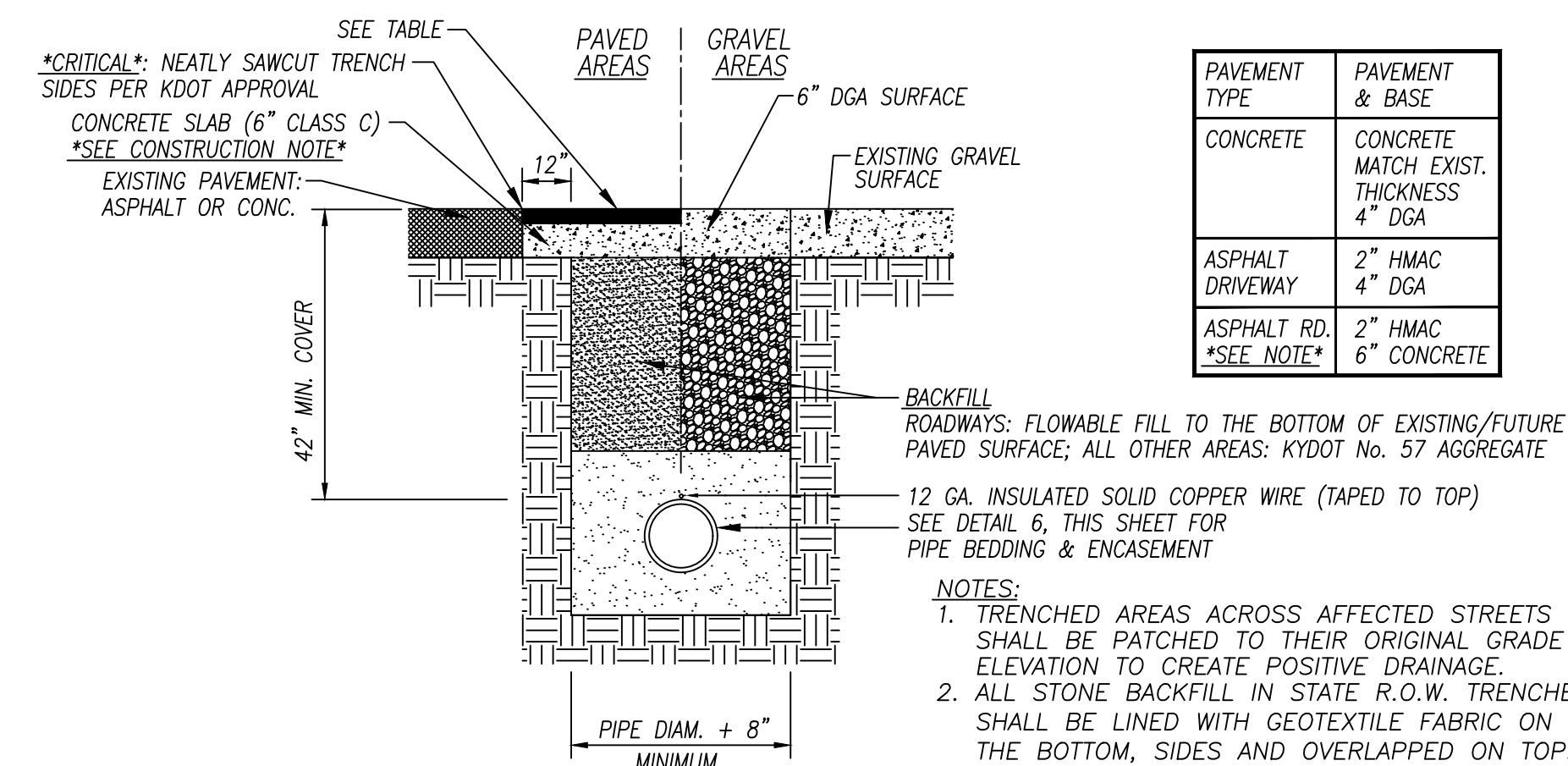
### CASED-OPEN CUT ROAD CROSSING

NOT TO SCALE



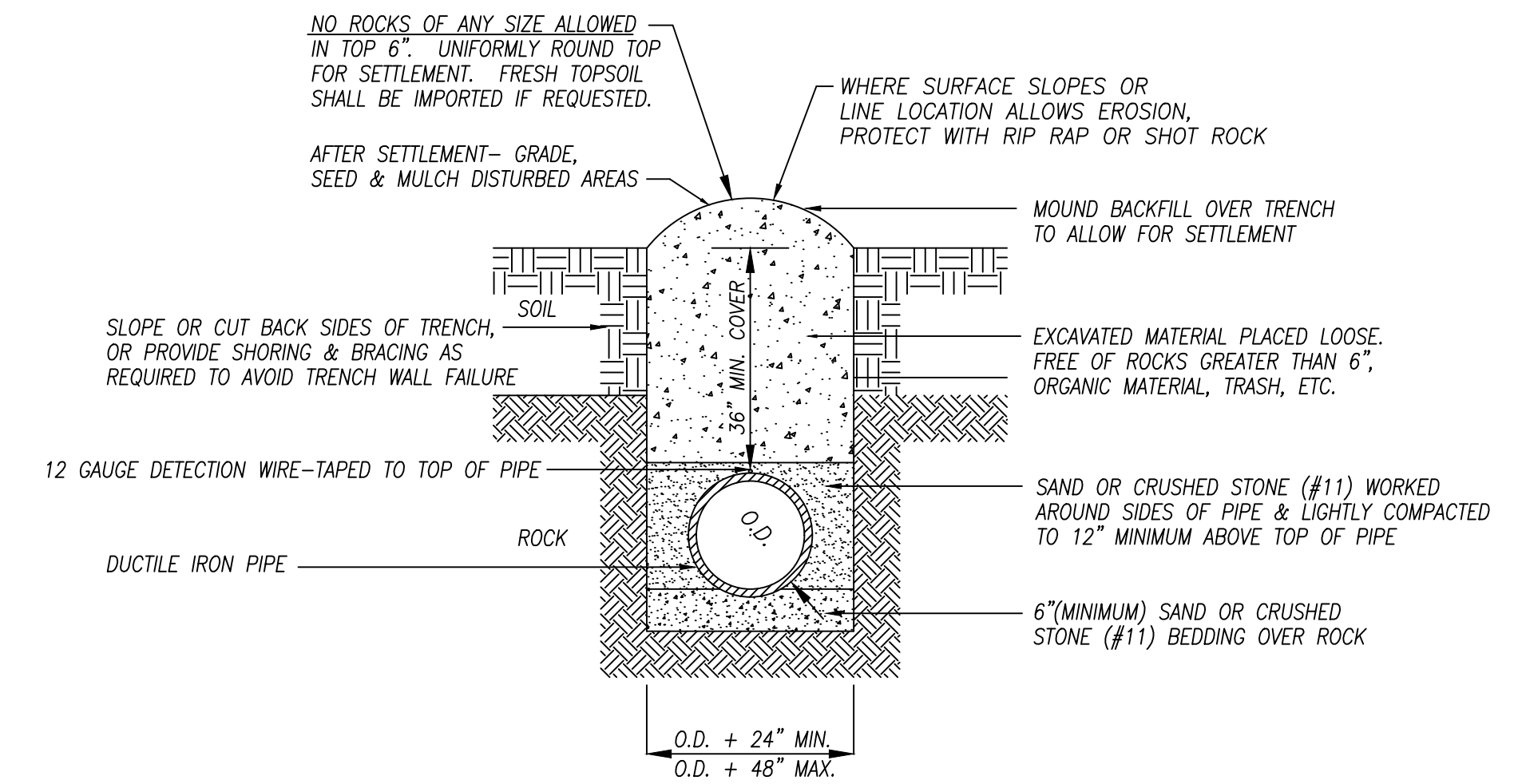
### CUT & PLUG EXISTING LINE DETAIL

NOT TO SCALE



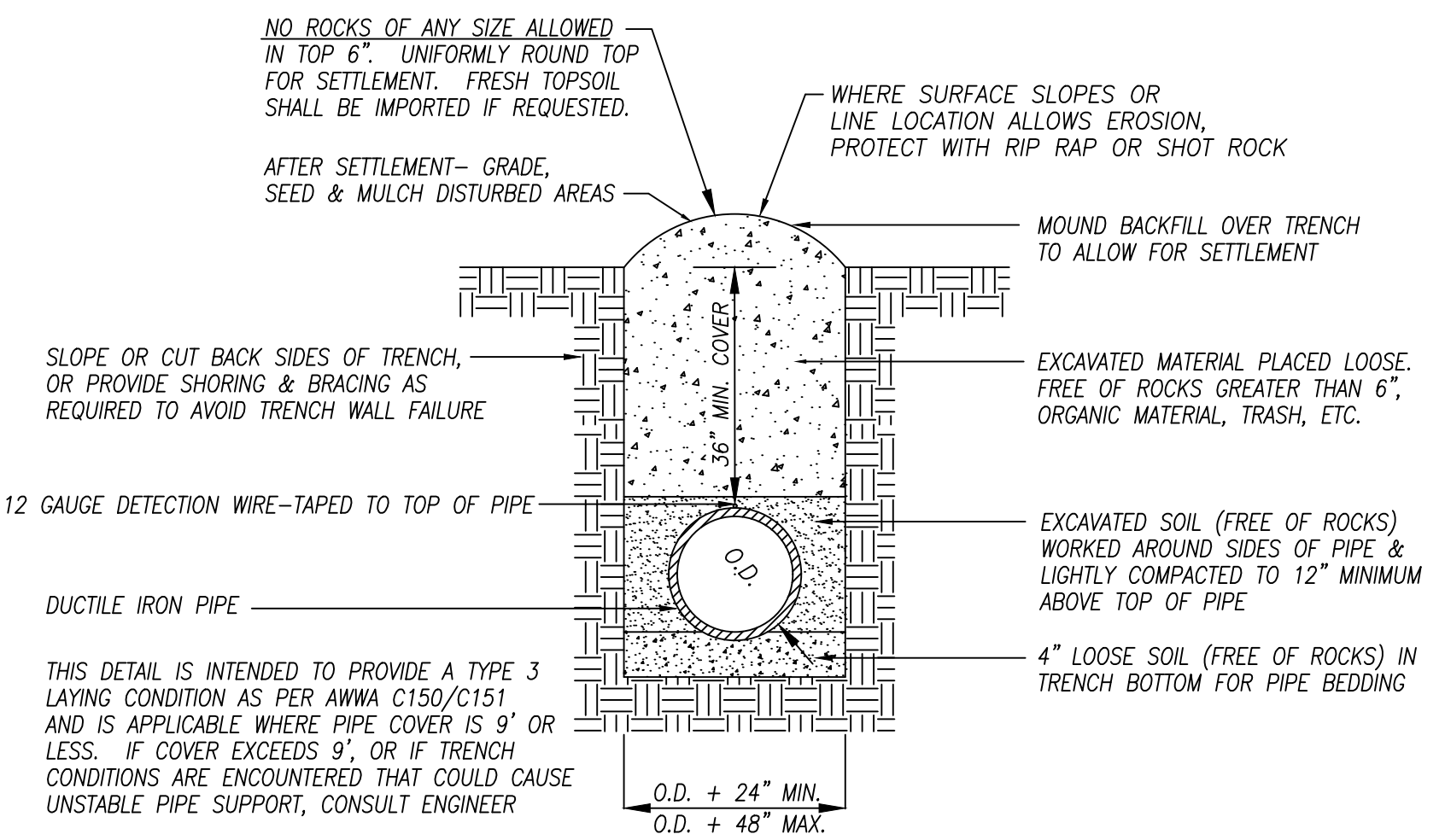
### PAVEMENT BACKFILL & REPAIR

NOT TO SCALE



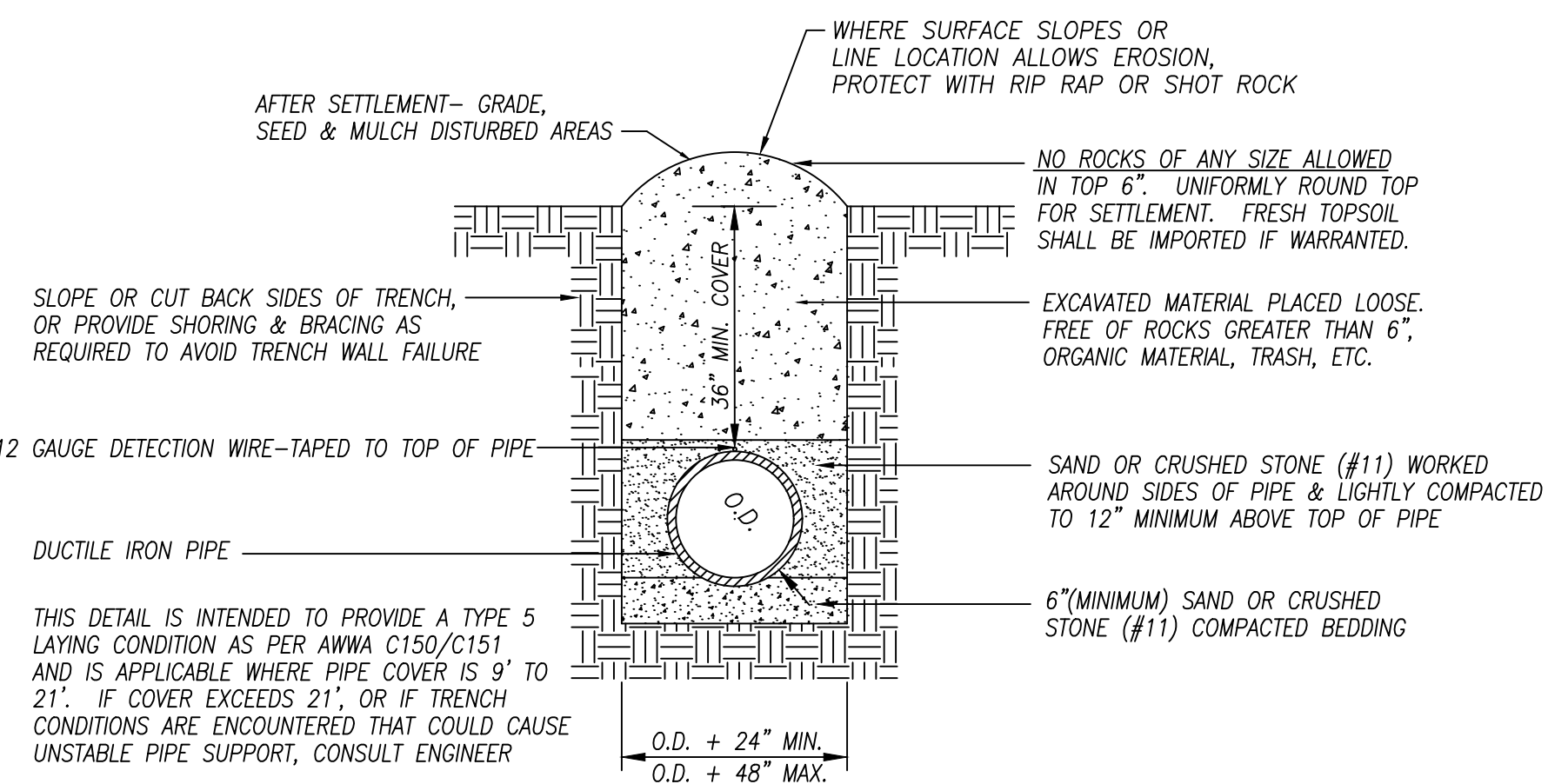
### DUCTILE IRON PIPE - ALL DEPTHS BEDDING & BACKFILL - ROCK

NOT TO SCALE



### DUCTILE IRON UP TO 9' COVER BEDDING & BACKFILL - SOIL

NOT TO SCALE



### DUCTILE IRON 9' - 21' COVER & RESTRAINED JOINT PIPE AREAS BEDDING & BACKFILL - SOIL

NOT TO SCALE

NO.	REVISION	DATE	BY
1	FOR KRCW REVIEW	08-16-18	CWW

**McGHEE ENGINEERING**

202 Ewing Street  
Elkhorn, KY 42234  
(270) 483-9985

**TODD COUNTY WATER DISTRICT**

P.O. Box 520  
Elkhorn, KY 42230  
(270) 265-2229

FIRM: McGhee Engineering, Inc.

DES BY: CWW CHK BY: MWW

DWN BY: CWW APP BY:

SCALE: AS SHOWN

PROJECT DATE: 2018

PRINTED: ON ORIGINAL DRAWING

LENGTH OF BAR IS 1"

Todd County Water District

NOVELIS WATER SUPPLY PROJECT

Contract 1 - Water Line & Meter Station

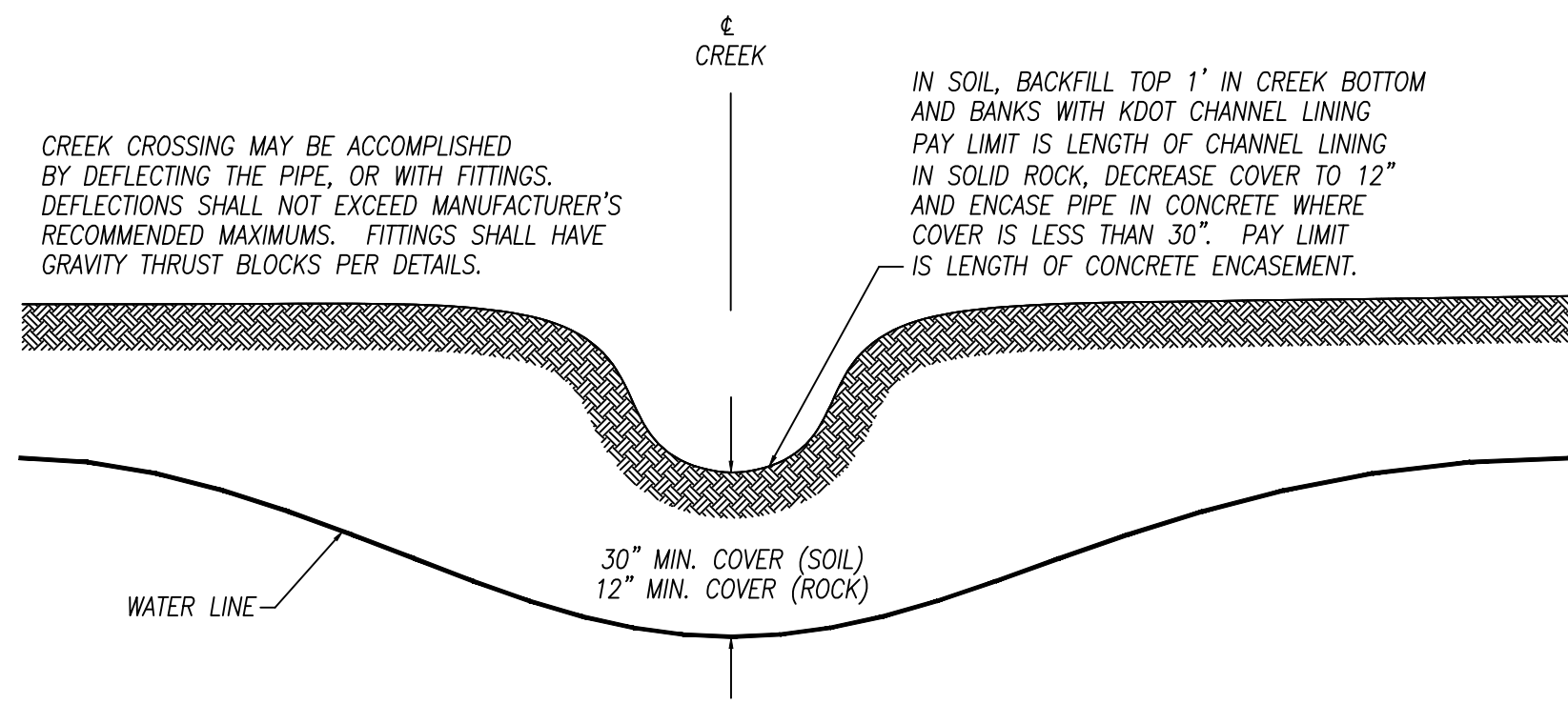
Water Line Details

**Quality On Tap!**

August 16, 2018

CHRIS WILCOX  
21625

Chris Wilcox, P.E.

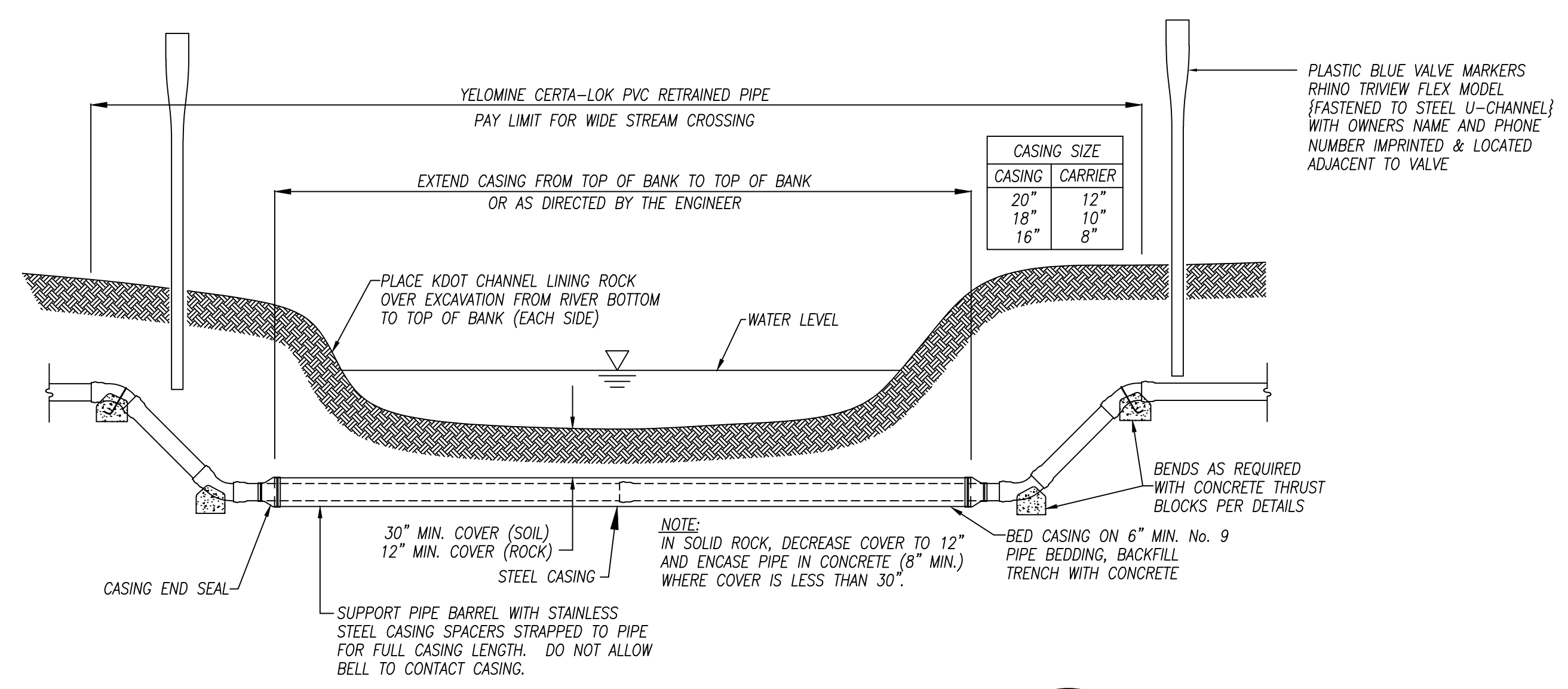


CREEK CROSSING MAY BE ACCOMPLISHED BY DEFLECTING THE PIPE, OR WITH FITTINGS. DEFLECTIONS SHALL NOT EXCEED MANUFACTURER'S RECOMMENDED MAXIMUMS. FITTINGS SHALL HAVE GRAVITY THRUST BLOCKS PER DETAILS.

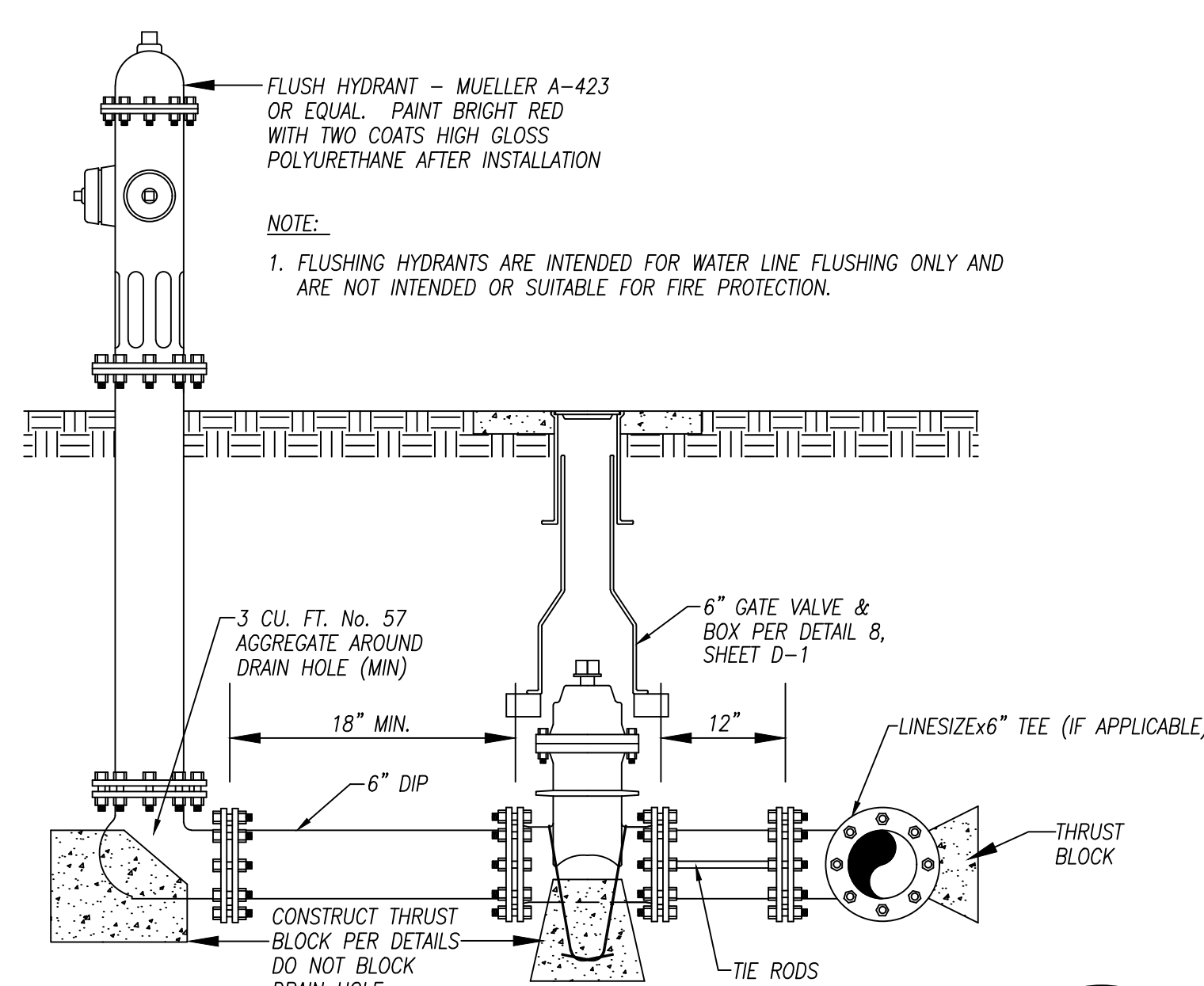
IN SOIL, BACKFILL TOP 1' IN CREEK BOTTOM AND BANKS WITH KDOT CHANNEL LINING. PAY LIMIT IS LENGTH OF CHANNEL LINING. IN SOLID ROCK, DECREASE COVER TO 12" AND ENCASE PIPE IN CONCRETE WHERE COVER IS LESS THAN 30". PAY LIMIT IS LENGTH OF CONCRETE ENCASEMENT.

WHERE ENCASED IN CONCRETE (I.E. ROCK) PROVIDE SDR 35 PVC COVER PIPE 2' BEYOND END OF CONCRETE ENCASEMENT. CLOSE ENDS WITH END SEALS SUPPORT CARRIER PIPE WITH CASING SPACERS.

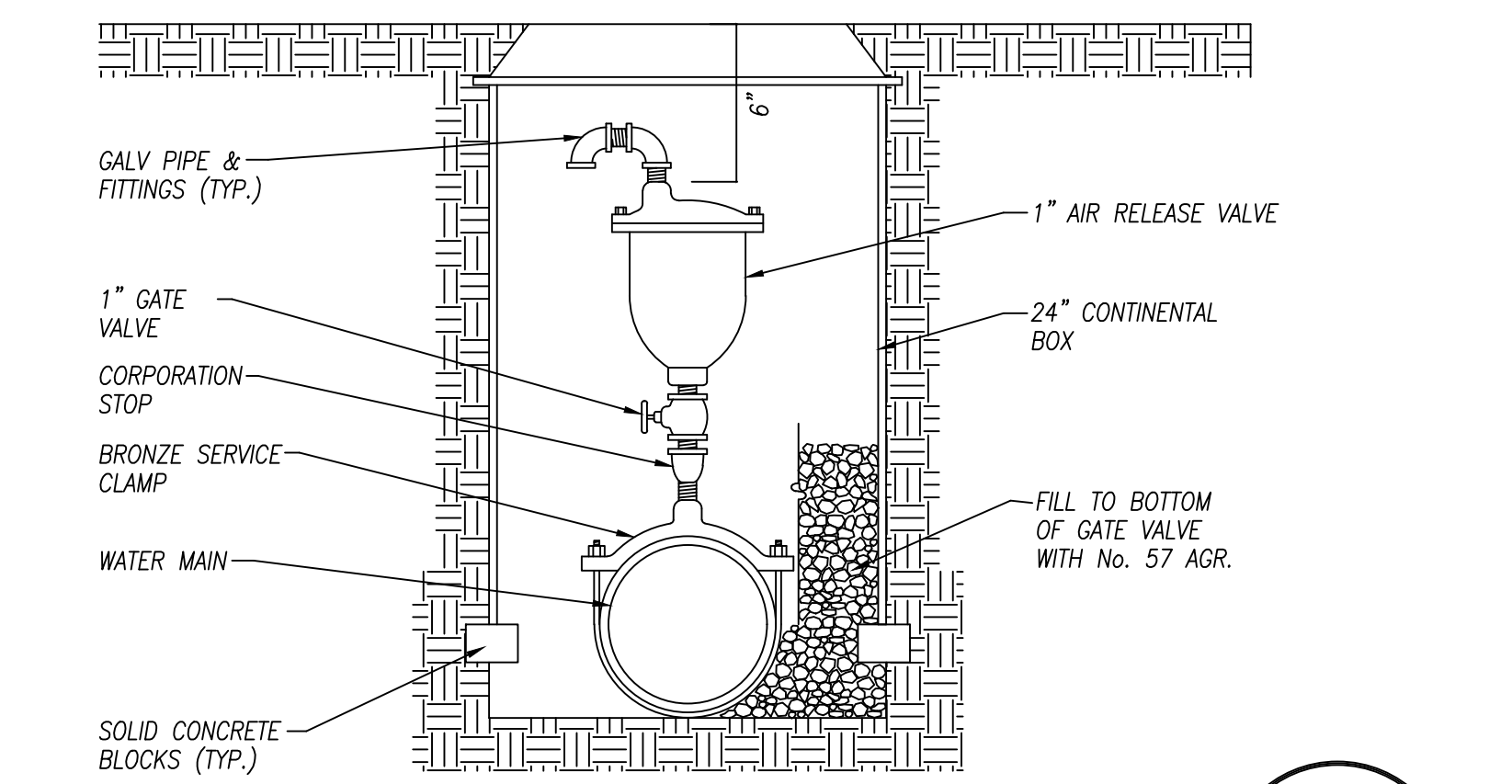
SHALLOW DITCH/CREEK X-ING 1  
D2



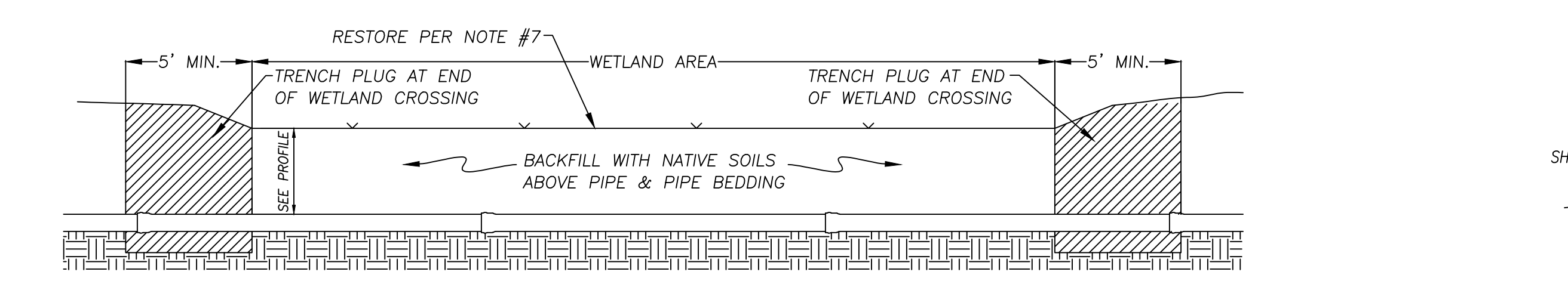
WIDE STREAM CROSSING DETAIL 4  
D2



FLUSHING HYDRANT DETAIL 7  
D2

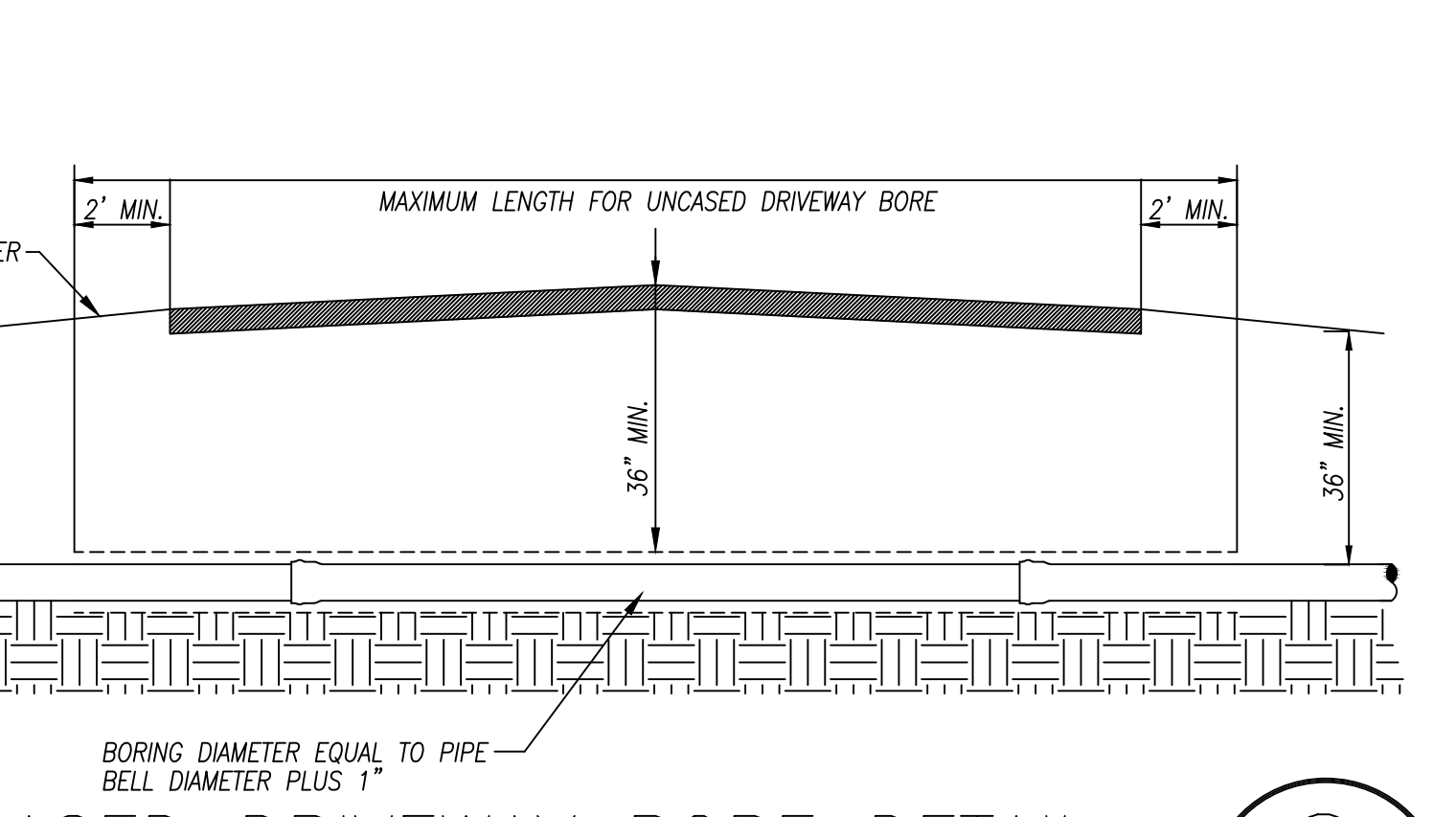


AIR RELEASE VALVE DETAIL 2  
D2

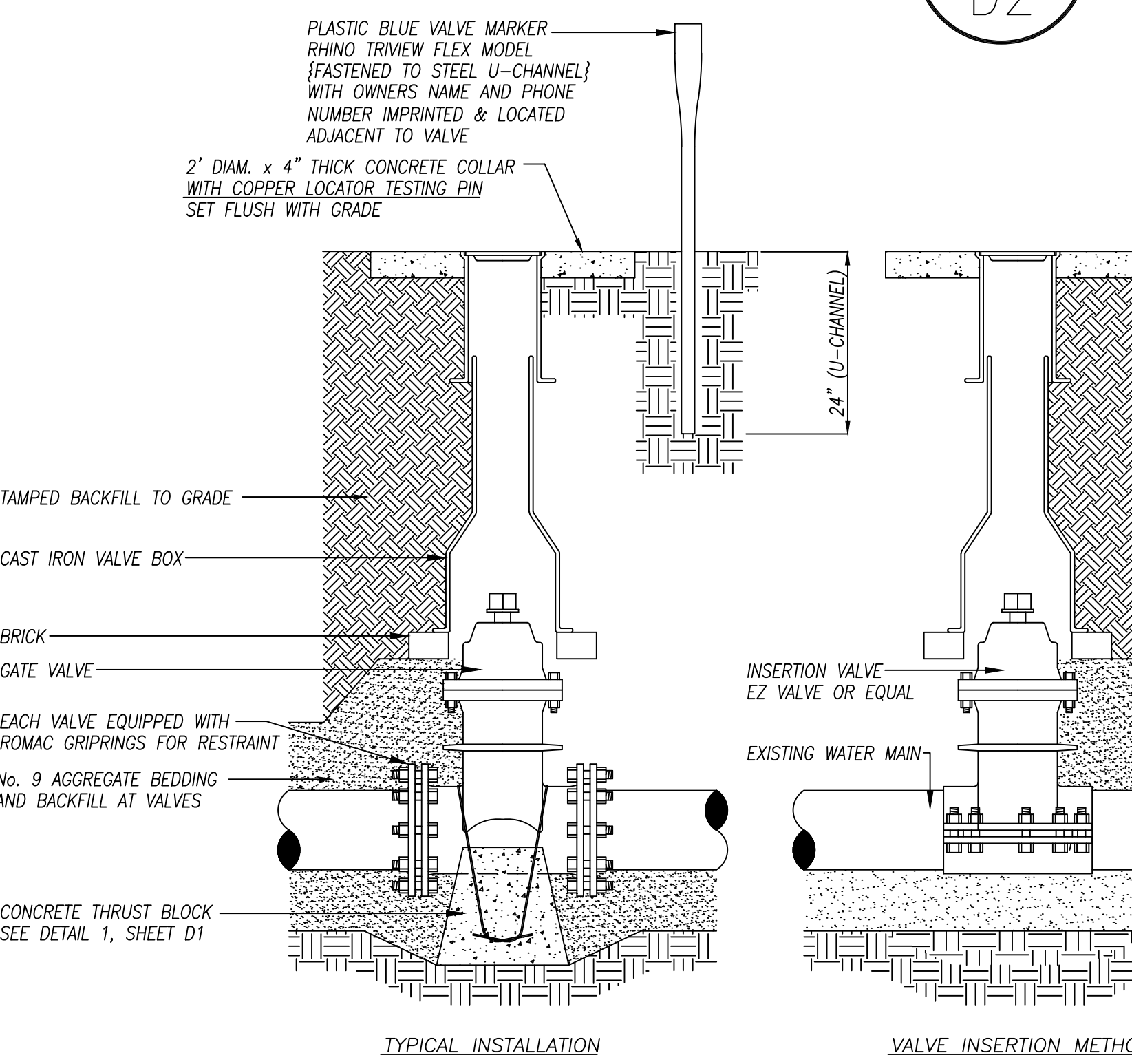


WETLAND CROSSING X-SECTION 5  
D2

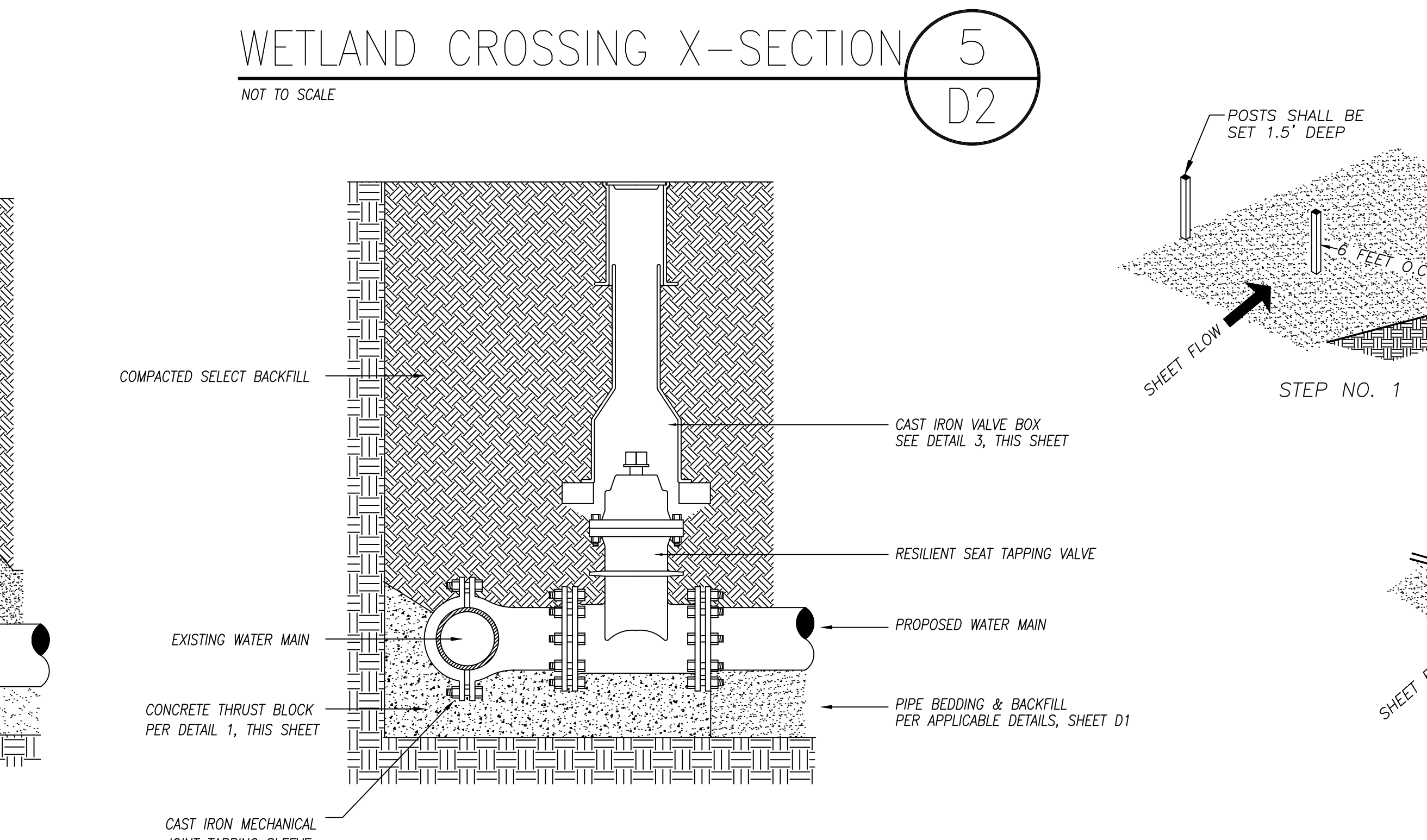
- GENERAL NOTES
- TRENCH PLUG SHALL CONSIST OF CLAY CONTAINING NO MORE THAN 15% STONE, NOT LARGER THAN 2" DIA. CLAY SHALL BE PLACED IN 6" LIFTS & COMPACTED BY MECHANICAL TAMPER TO NO LESS THAN 95% MAX. DENSITY.
  - TRENCH PLUGS SHALL BE INSTALLED AT EDGES OF ALL WETLANDS TO PREVENT TRENCH FROM DRAINING AREA.
  - TRENCH WIDTH AND DISTURBANCE SHALL BE KEPT TO A MINIMUM. RESTORE ORIGINAL GRADES THRU WETLANDS.
  - PROTECT AND PRESERVE VEGETATION TO THE MAXIMUM EXTENT POSSIBLE. MOUNDING OF FILL MATERIAL TO ALLOW FOR SETTLEMENT IN TRENCH IS PERMITTED.
  - MINIMIZE EROSION & PRECLUDE ITS ENTERING WETLAND AREA.
  - BACKFILL: THE TOP 6" OF TOPSOIL SHALL BE STRIPPED & SALVAGED PRIOR TO TRENCHING. AFTER TRENCHING, THE UPPER 6" OF BACKFILL SHALL BE RETURNED WITH THE NATIVE TOPSOIL. TOP 2" SHALL NOT BE COMPACTED.
  - PERMANENT RESTORATION SEEDING: REPLANT OR RESEED WITH INDIGENOUS WETLAND PLANTS OR NATIVE SEEDLINGS, LEAVING NO BARE SPOTS AND MULCHED WITH SMALL GRAIN STRAW.



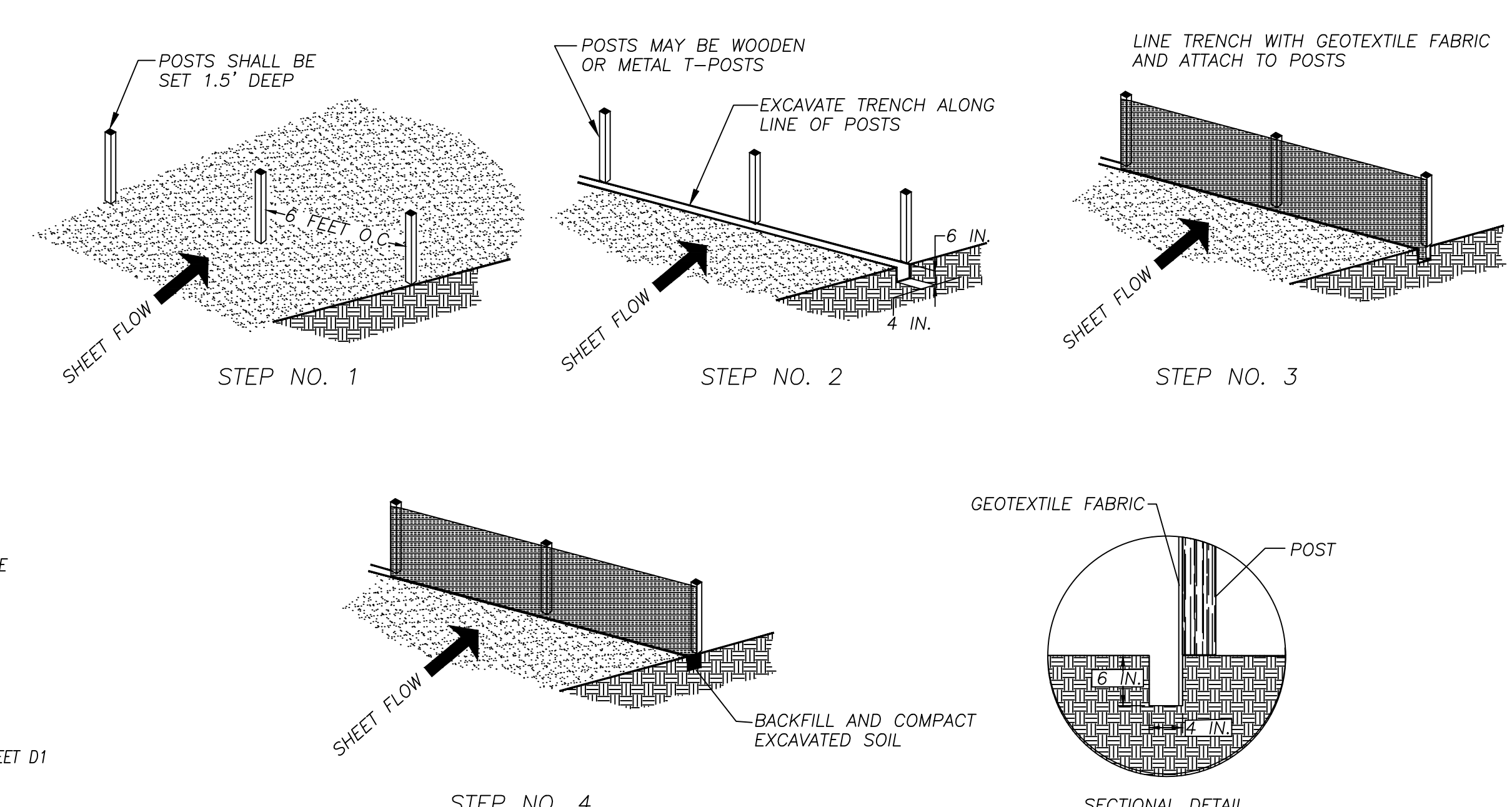
UNCASED DRIVEWAY BORE DETAIL 8  
D2



VALVE SETTING DETAILS 3  
D2



TAPPING SLEEVE & VALVE 6  
D2



SILT FENCE DETAIL 9  
D2

NO.	REVISION	DATE	BY
1	FOR CDDW REVIEW	08-16-18	CWW

**McGHEE ENGINEERING**  
202 Ewing Street  
Guthrie, KY 42234  
(270) 483-9985

**TODD COUNTY WATER DISTRICT**  
P.O. Box 520  
Elkton, KY 42220  
(270) 265-2229

FIRM: McGhee Engineering, Inc.  
DES BY: CWW CHK BY: MWV  
DWN BY: CWW APP BY:  
SCALE: AS SHOWN  
PROJECT DATE: 2018  
PRINTED:  
LENGTH OF BAR IS 1"  
ON ORIGINAL DRAWING

Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 1 - Water Line & Meter Station  
Water Line Details

**Quality On Tap!**

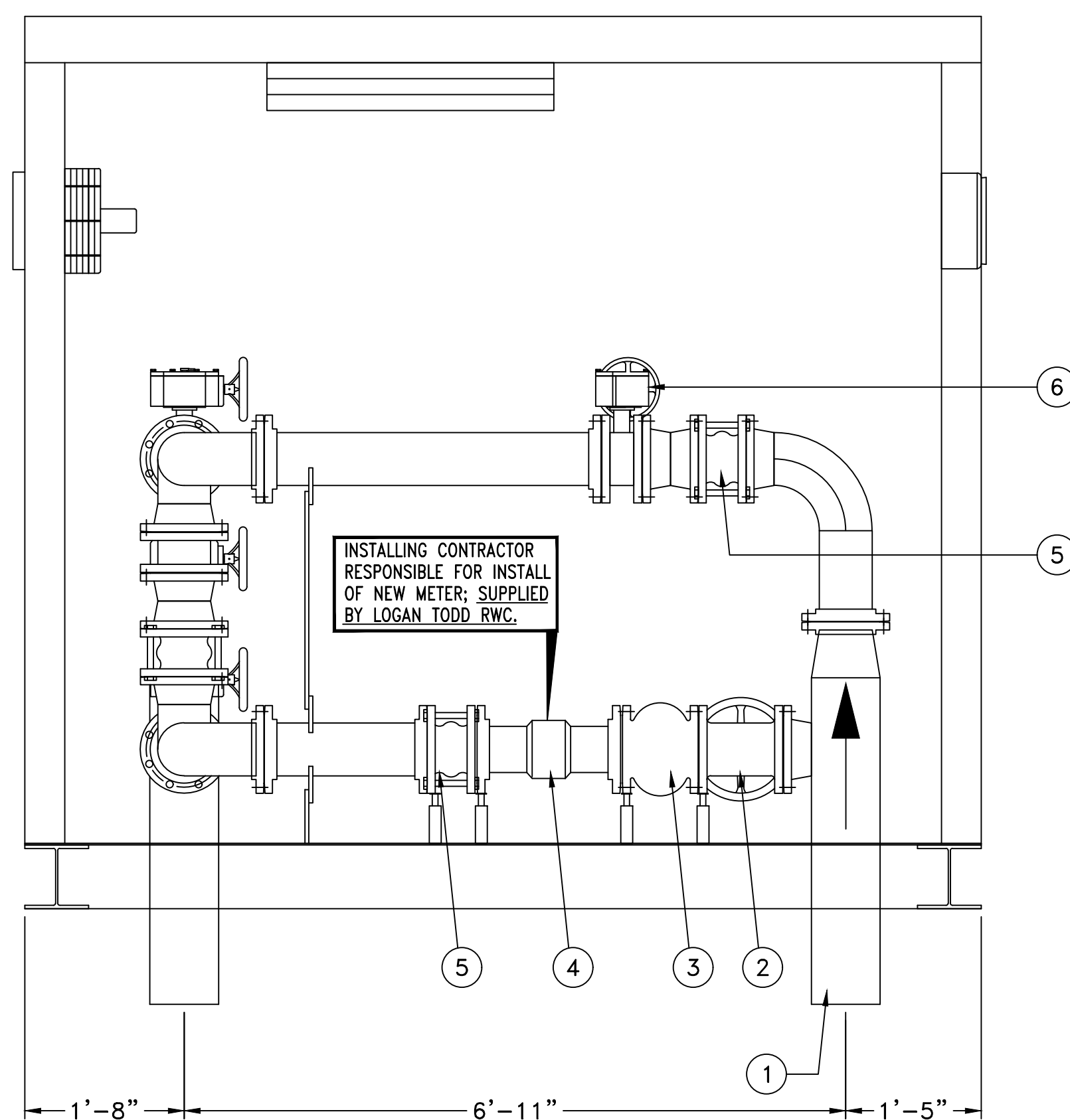
August 16, 2018  
CHRIS WILCOX  
21625  
PROFESSIONAL ENGINEER  
Chris Wilcox, P.E.

26	1		SHELF	
25	1		LAB SINK	
24	1		CHEMICAL FEED PACING PANEL	
23	1		HIGH WATER ALARM	
22	2		HEATER	WALL MOUNT
21	1		TELEMETRY	
20	1		TELEMETRY INTERFACE	36"X36"X12"
19*	1		42" MIN. CLEARANCE	SEE NOTES
18	1		CONTROL PANEL	
17	2		GAUGE	
16	1		DEHUMIDIFIER	
15	2		FLOOR REINFORCING	
14	2		FLOOR DRAIN	
13	2		FAN, EXHAUST	
12	4		LIGHTS, OVERHEAD	
11	2		LOUVERS	
10	1		BUILDING, DUPONT	11'-0"X16'-0"
9	1		SKID	11'-0"X16'-0"
8	1	8"	STATION DISCHARGE	
7	1	6"	VALVE, CONTROL	
6	5	6"	VALVE, ISO, AWWA, W/GEAR	PRATT
5	5	6"	COUPLING, PROCO, FLEX	
4	1	6"	METER, NEPTUNE TURBO	(FROM OTHERS)
3	1	6"	STRAINER, NEPTUNE	
2	1	6"	VALVE, GATE	CLOW
1	1	8"	STATION INTAKE	
ITEM	QTY	SIZE	DESCRIPTION	PART NO./NOTE

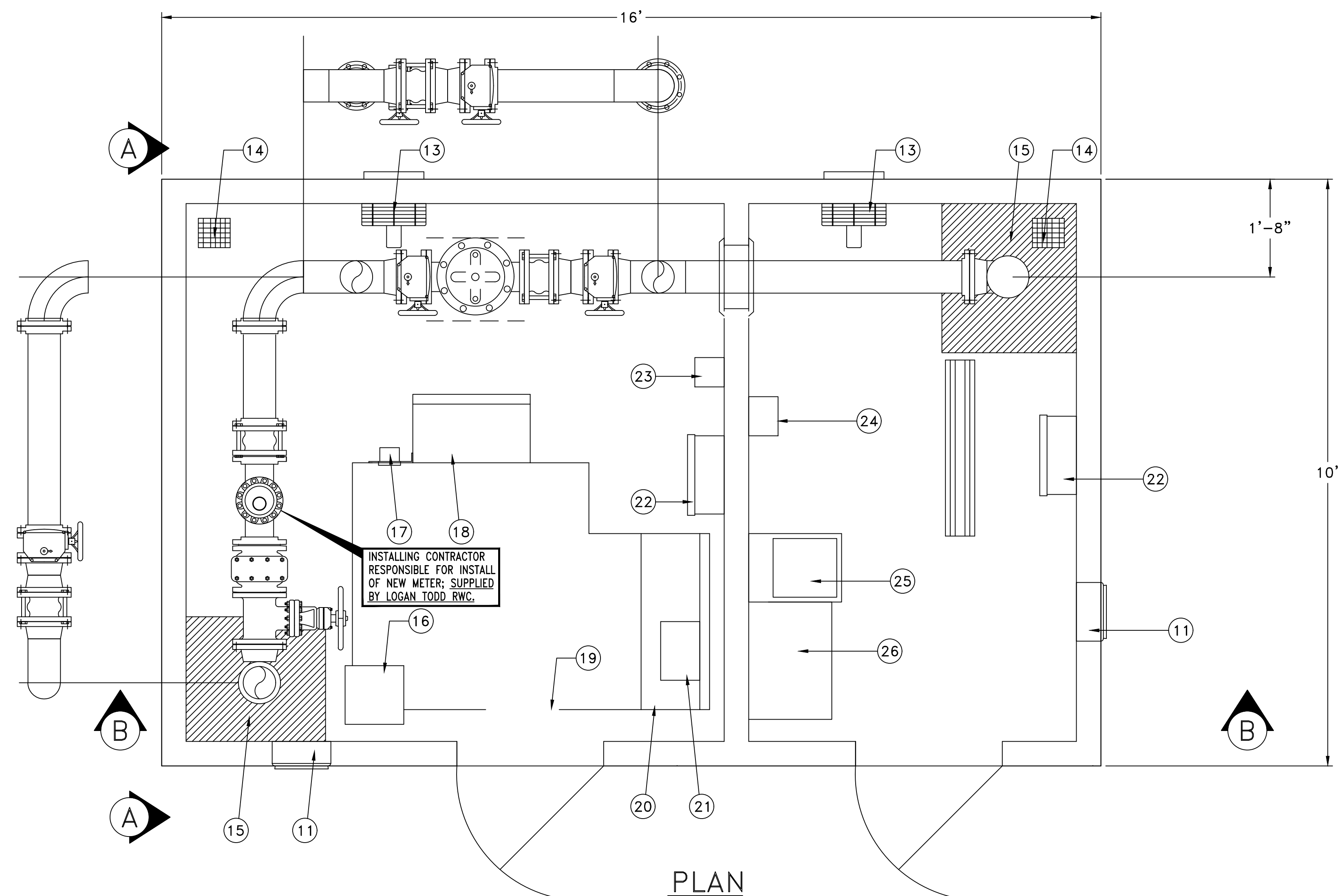
PARTS LIST

NOTE:

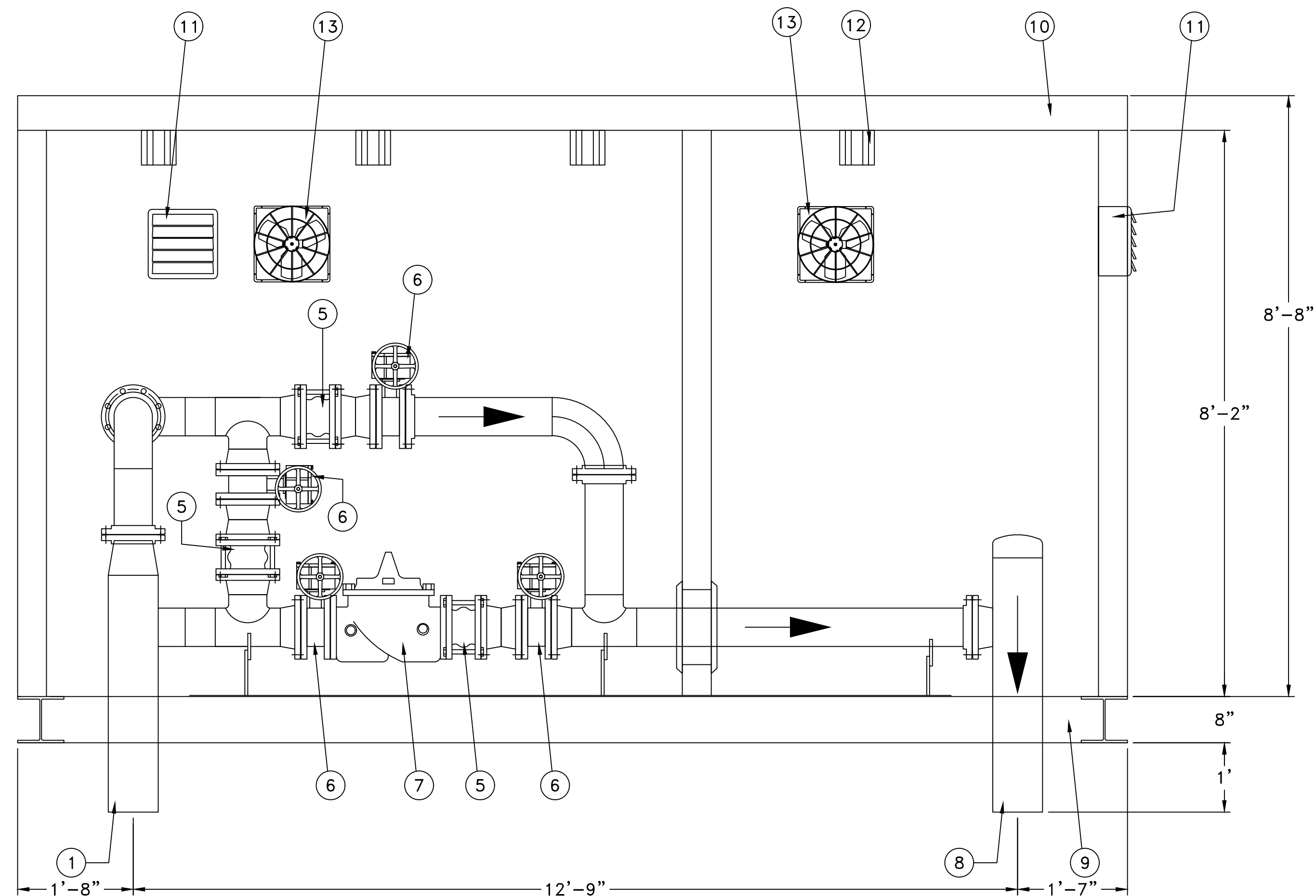
- INSTALL A 4" PVC DRAIN PIPE FROM EACH BUILDING DRAIN. EXTEND DRAIN PIPE TO DAYLIGHT, PROTECTING END WITH RIP-RAP, OR TERMINATE IN ROCK DRAIN BED PER DETAIL 5, SHEET MD-2.
- ESTIMATED WEIGHT OF STATION = 13,700 LBS (EXISTING METER STATION).
- IMPORTANT CONTACT INFORMATION:  
KY UNDERGROUND PROTECTION @ 811 OR (800) 752-6007
- FILL MATERIAL MAY BE OFF-SITE BORROW SUITABLE FOR STRUCTURAL BACKFILL AND ACCEPTABLE TO THE ENGINEER OR DENSE GRADE AGGREGATE. FILL SHALL BE PLACED AND COMPACTED PER THE SPECIFICATIONS.
- FERTILIZE, SEED AND MULCH ALL DISTURBED AREAS AFTER CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BUILDING RELOCATION WITH LOGAN TODD REGIONAL WATER, TRANSPORT & OFF-LOAD AT THE NEW SITE.
- THE EXISTING SITE IS RELATIVELY FLAT, THUS NO PROPOSED CONTOURS ARE INDICATED. HOWEVER, THE SITE SHALL BE PROPERLY GRADED TO INSURE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE.
- SHOP DRAWINGS OF EXISTING LTRWC-ALLENSVILLE STATION (FLOWTRONEX JOB #11374M) ARE AVAILABLE UPON REQUEST. EXISTING STATION IS LOCATED IN ALLENSVILLE, KY & AVAILABLE FOR INSPECTION AND REVIEW PRIOR TO RELOCATION.
- INSTALLING CONTRACTOR TO INSTALL NEW 6-INCH NEPTUNE HP TURBINE METER WITH STRAINER, SUPPLIED BY OTHERS (LOGAN TODD REGIONAL WATER COMMISSION).



SECTION A-A



PLAN



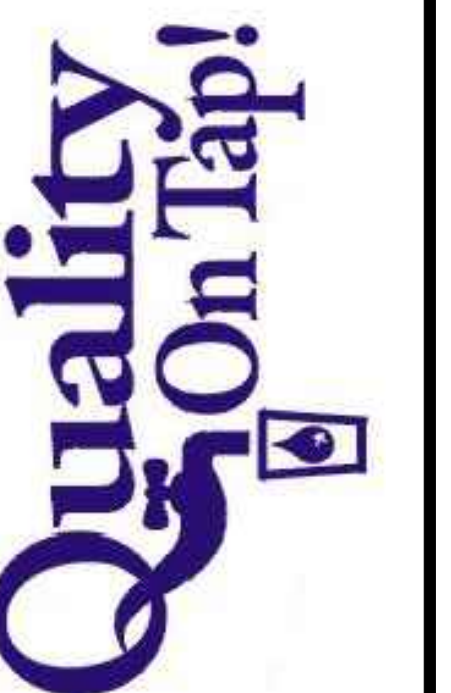
SECTION B-B

NO.	REVISION	DATE	BY
1	FOR RCDW REVIEW	08-16-18	CWW

**MCGHEE TODD COUNTY WATER DISTRICT**  
ENGINEERING  
202 Ewing Street  
Guthrie, KY 42234  
(270) 483-9985

FIRM: McGhee Engineering, Inc.  
DES BY: CWW CHK BY: MWW  
DWN BY: CWW APP BY:  
SCALE: 3/4" = 1'-0"  
PROJECT DATE: 2018  
PRINTED:  
LENGTH OF BAR IS 1"  
ON ORIGINAL DRAWING

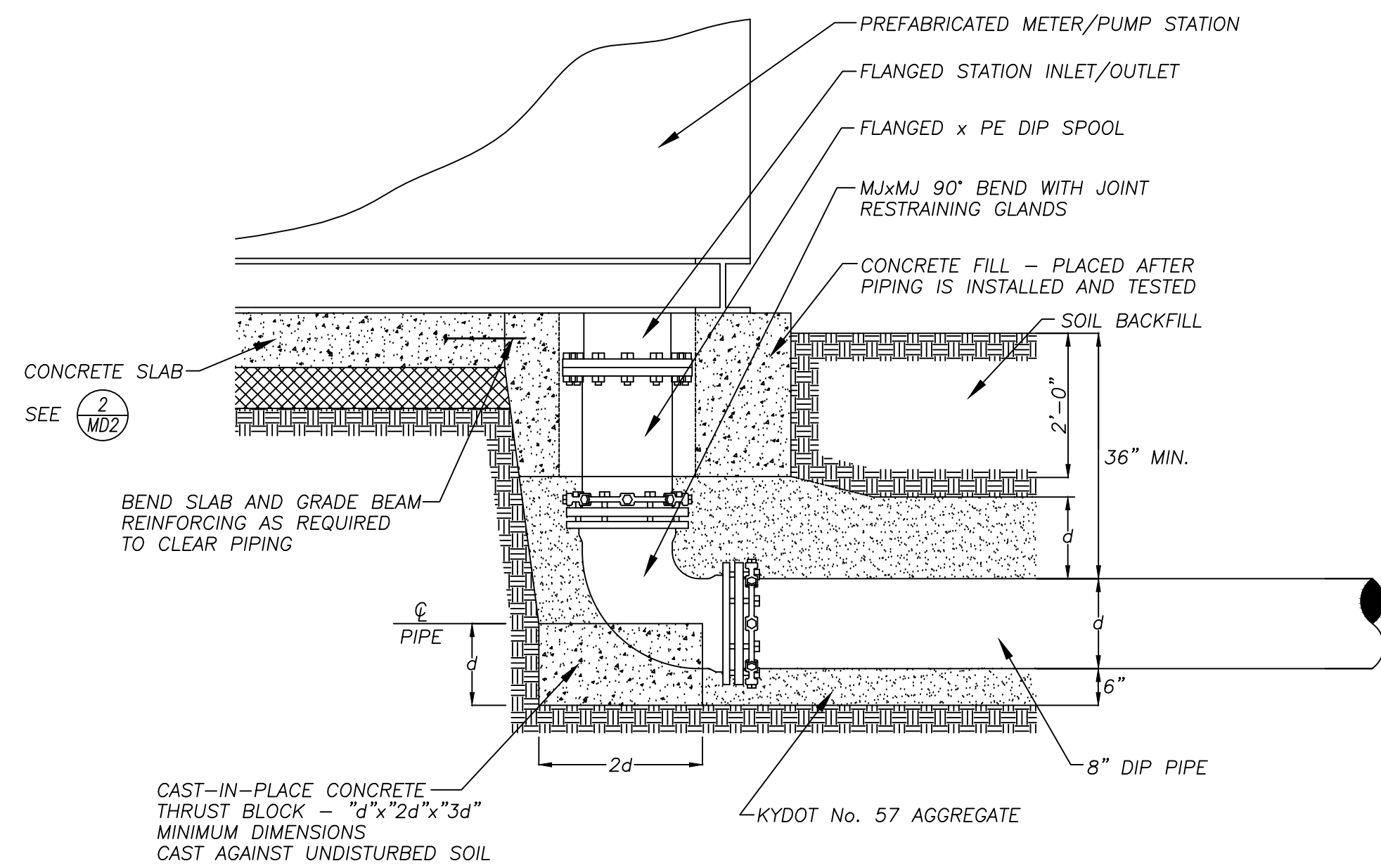
Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 1 - Water Line & Meter Station  
BASE BID: Existing Meter Station Details



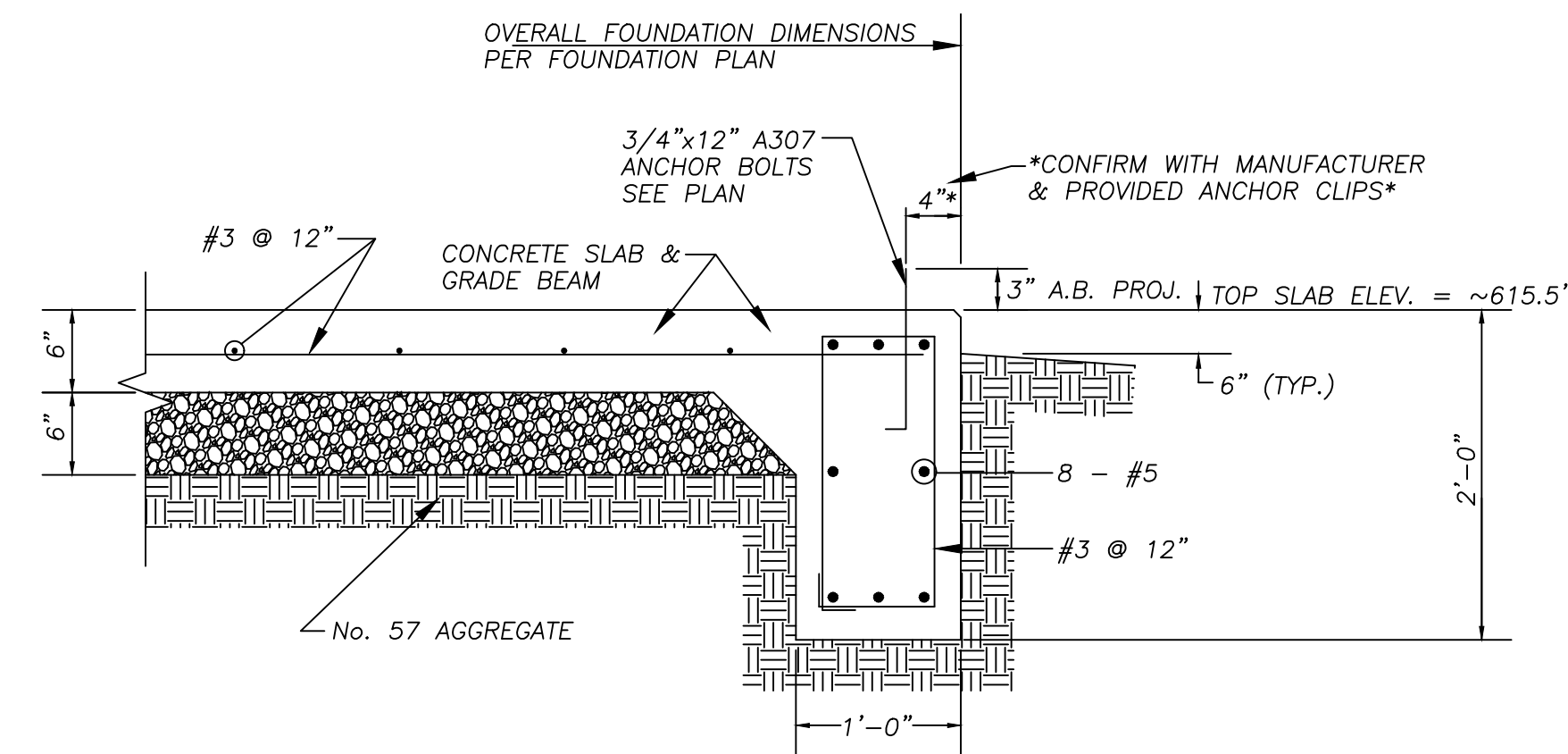
August 16, 2018  
CHRIS WILCOX  
21625  
Chris Wilcox, P.E.

DRAWING NO.

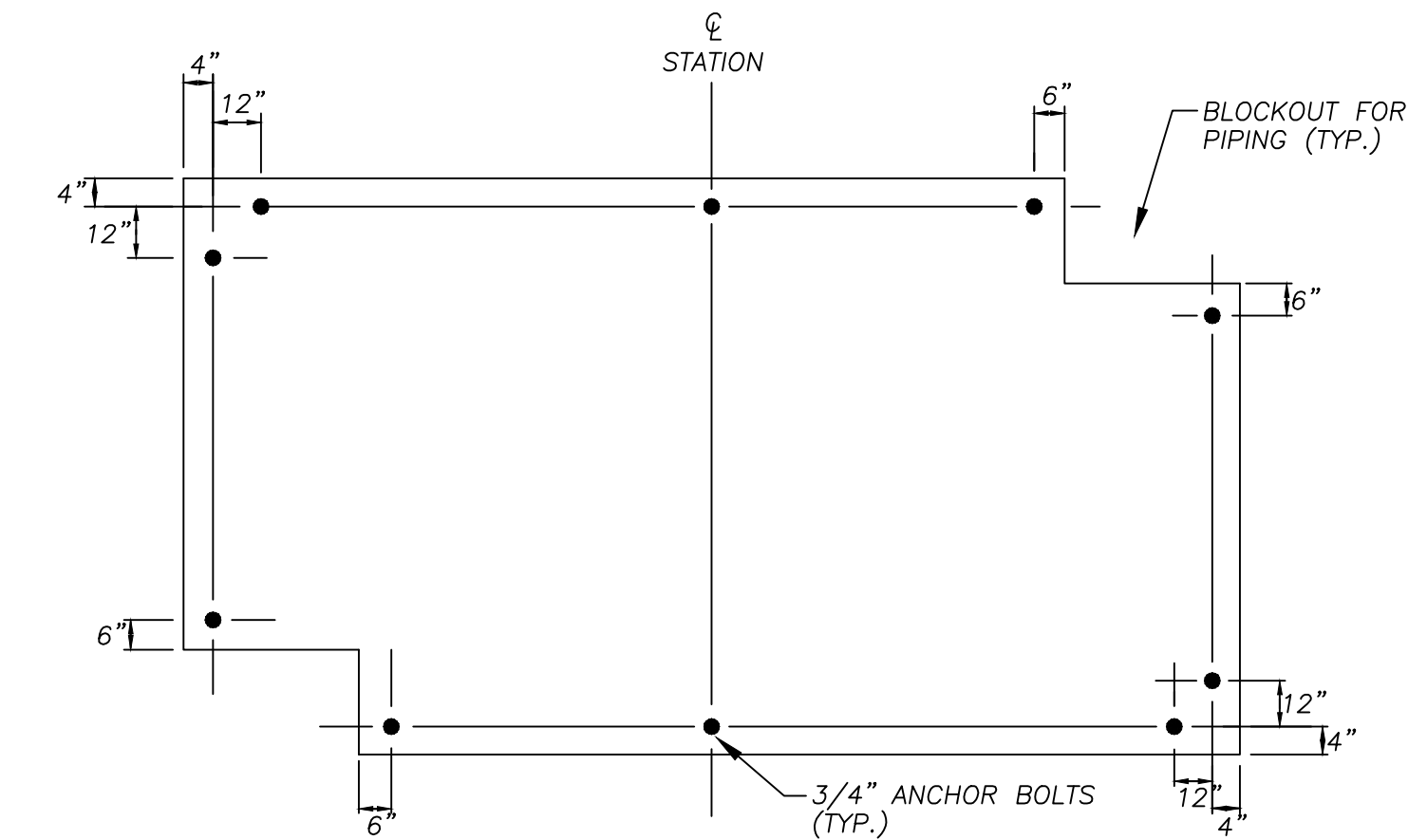
SHEET MD-1



**STATION INLET/OUTLET CONNECTION** 1  
NOT TO SCALE MD2

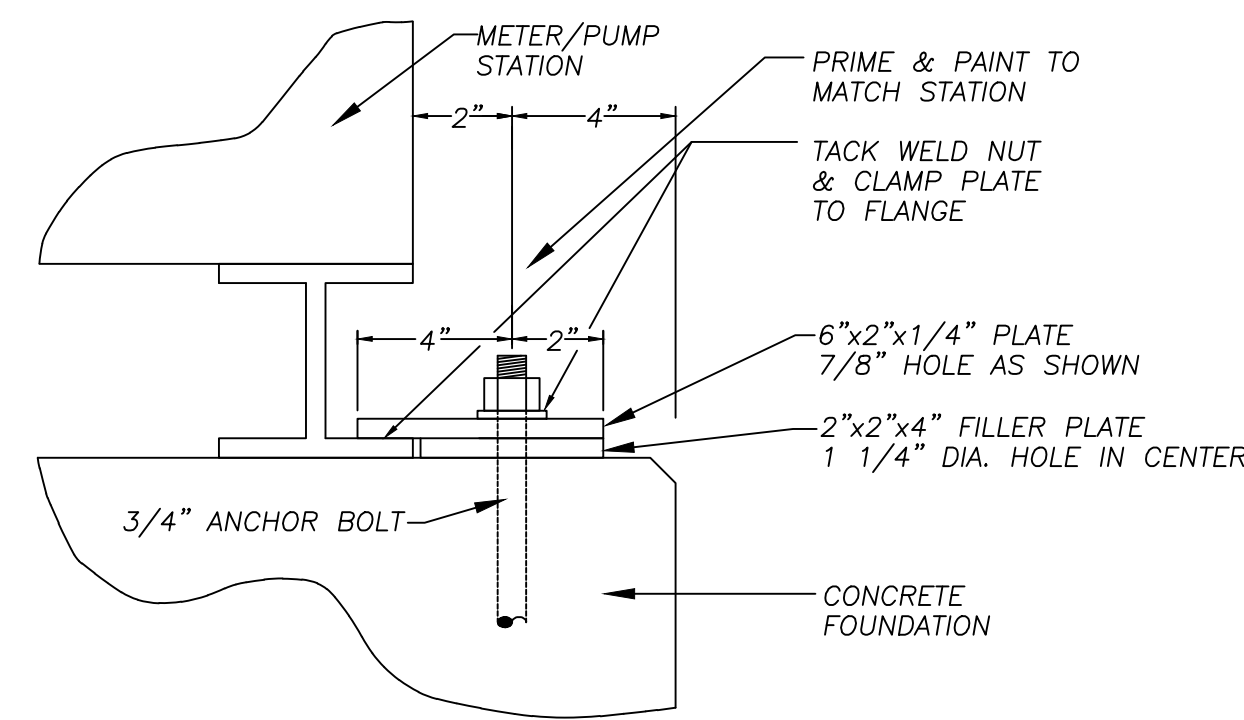


**FOUNDATION DETAIL** 2  
NOT TO SCALE MD2



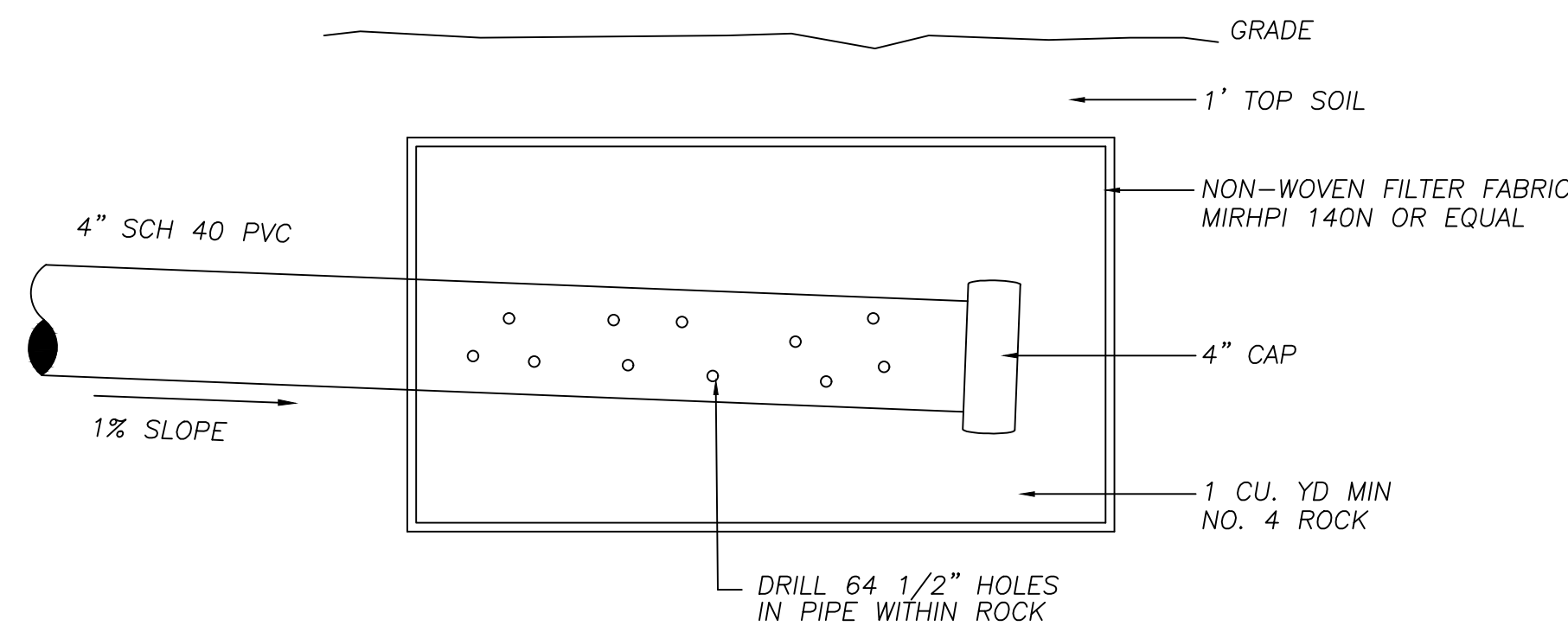
**ANCHOR BOLT PLAN** 3  
NOT TO SCALE MD2

- NOTES:  
1. PROVIDE 3 BOLTS EACH LONG SIDE & 2 BOLTS EACH SHORT SIDE AS SHOWN FOR A TOTAL OF 10 BOLTS PER STATION  
2. CONFIRM OFFSET FROM SLAB EDGE WITH ANCHOR CLIPS, PROVIDED BY STATION MANUFACTURER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

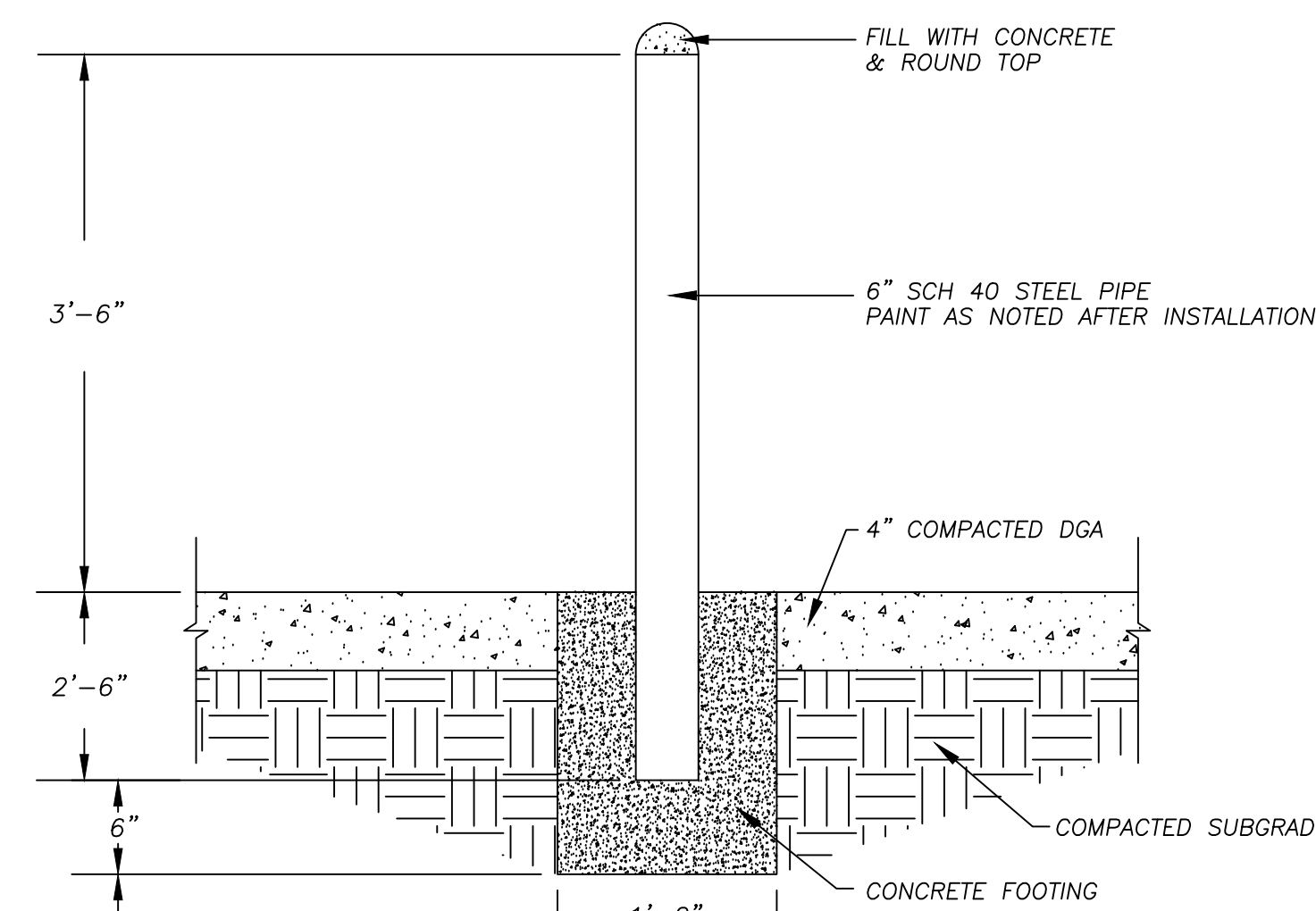


**ANCHOR BOLT DETAIL** 4  
NOT TO SCALE MD2

- NOTES:  
1. PROVIDE 3 BOLTS EACH LONG SIDE & 2 BOLTS EACH SHORT SIDE AS SHOWN FOR A TOTAL OF 10 BOLTS PER STATION  
2. CONFIRM OFFSET FROM SLAB EDGE WITH ANCHOR CLIPS, PROVIDED BY STATION MANUFACTURER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

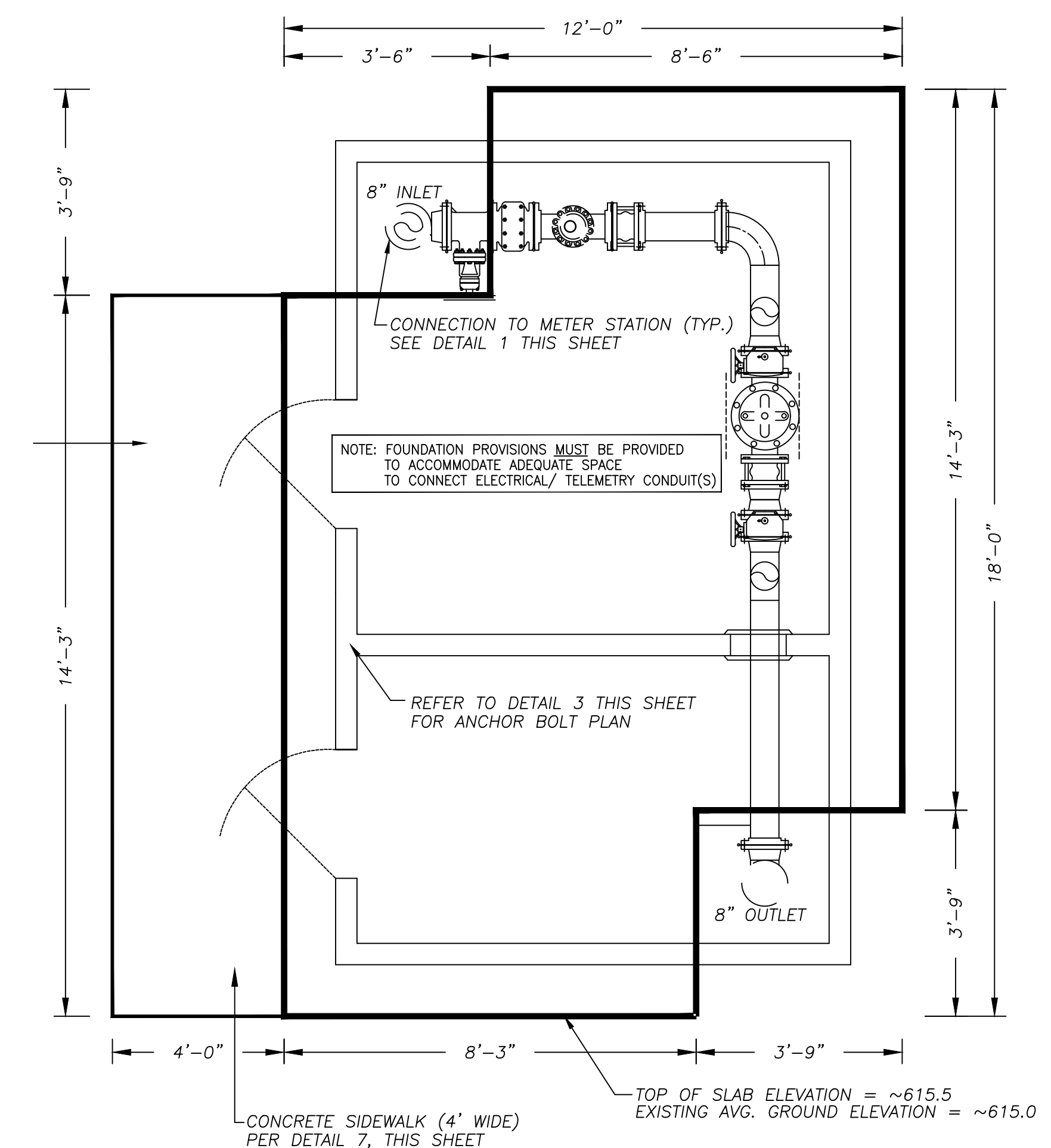


**BLOCK DRAIN BED DETAIL** 5  
NOT TO SCALE MD2

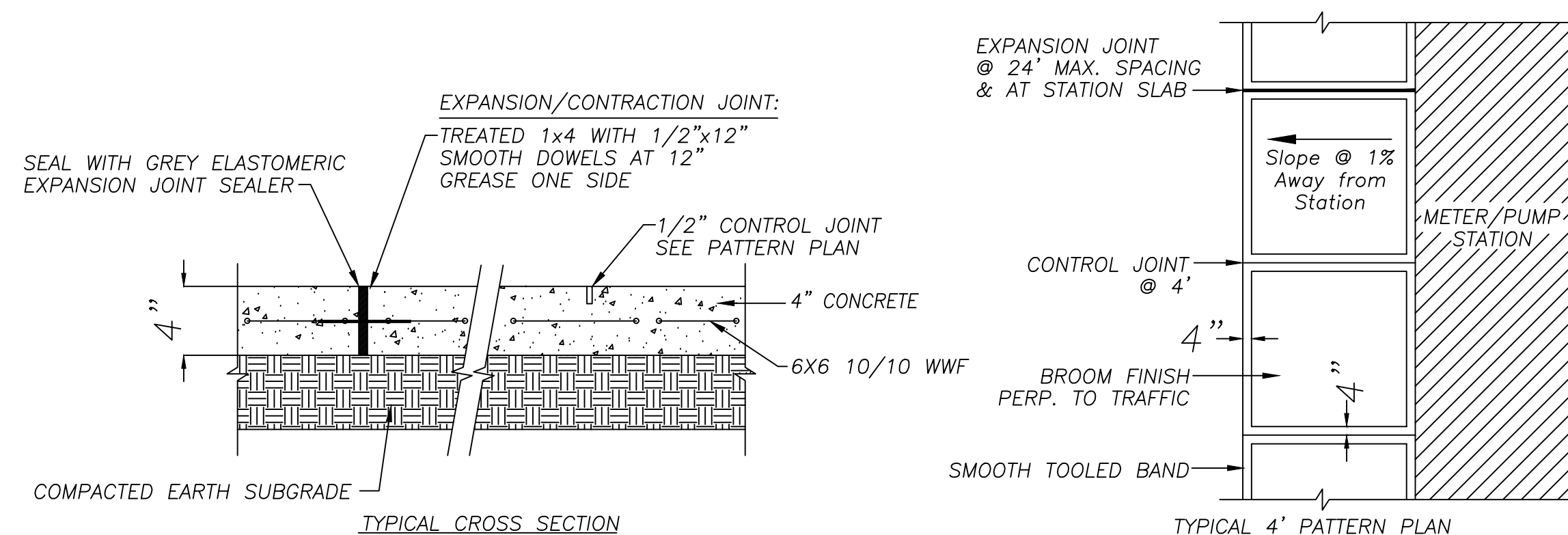


**PIPE BOLLARD DETAIL** 8  
NOT TO SCALE MD2

NOTE: PAINT STEEL PIPE AND CONCRETE CAP WITH ONE COAT OF RUST INHIBITING PRIMER AND TWO COATS OF SEMI-GLOSS ENAMEL. COLOR TO BE "SAFETY YELLOW."



**FOUNDATION PLAN** 6  
NOT TO SCALE MD2



**TYP. CONCRETE SIDEWALK** 7  
NOT TO SCALE MD2

NO.	REVISION	DATE	BY
1	FOR KDW REVIEW	08-16-18	CWW

**McGHEE TODD COUNTY ENGINEERING**  
202 Ewing Street  
Guthrie, KY 42234  
(270) 483-9985

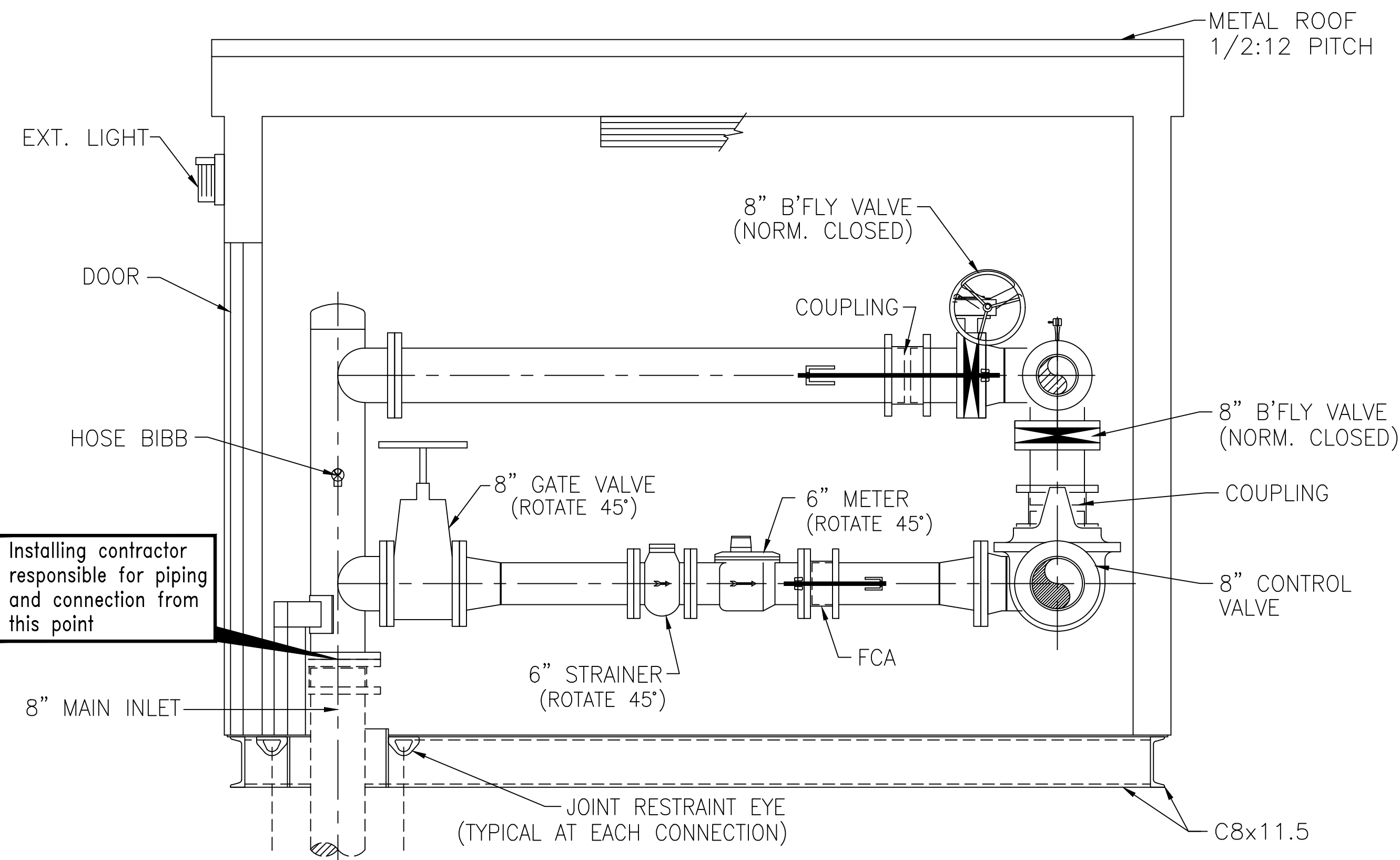
**TODD COUNTY WATER DISTRICT**  
P.O. Box 520  
Elkton, KY 42220  
(270) 265-2229

FIRM: McGhee Engineering, Inc.  
DES BY: CWW CHK BY: MWW  
DWN BY: CWW APP BY:  
SCALE: AS SHOWN  
PROJECT DATE: 2018  
PRINTED:  
LENGTH OF BAR IS 1"  
ON ORIGINAL DRAWING

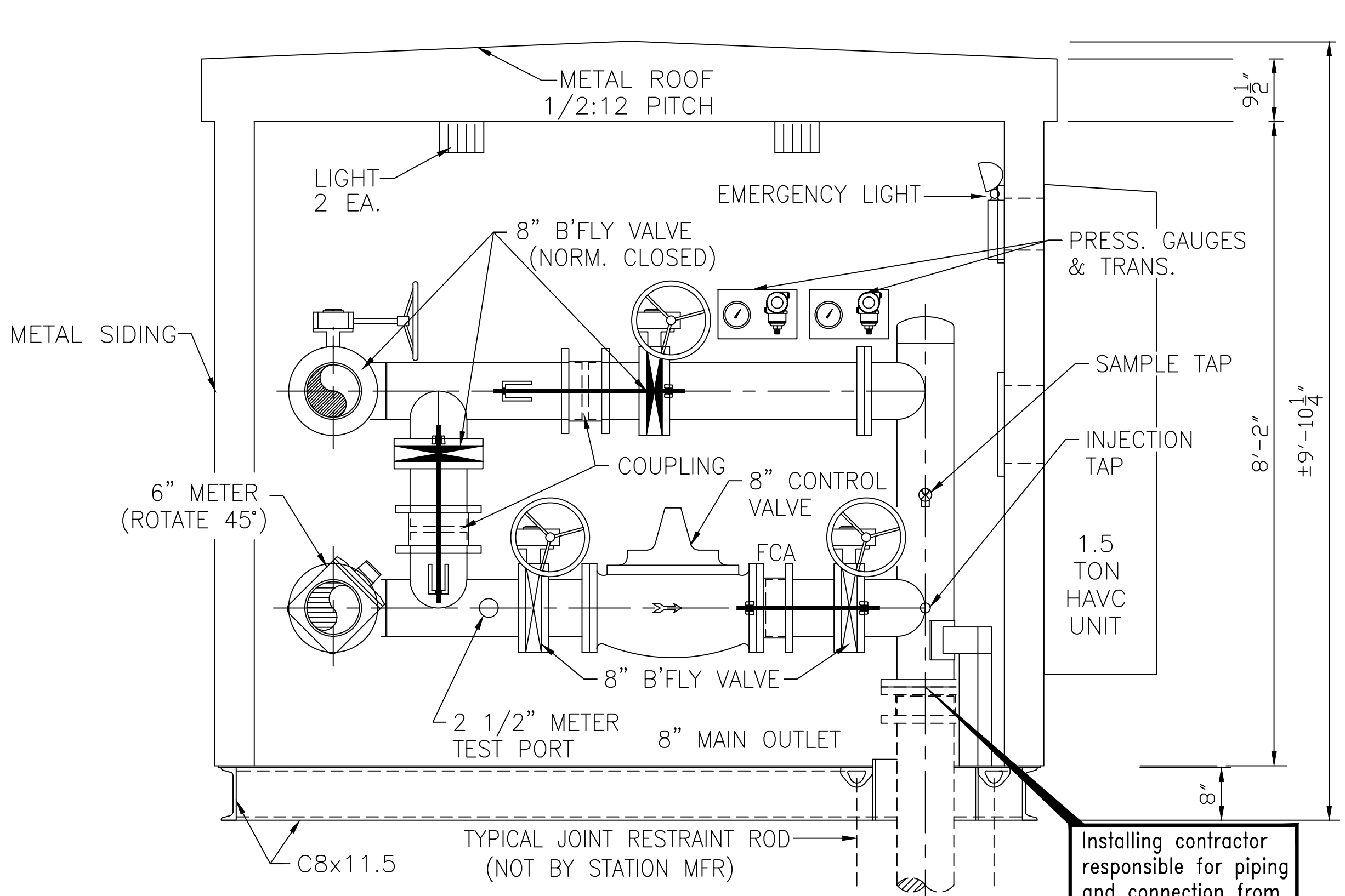
Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 1 - Water Line & Meter Station  
BASE BID: Existing Meter Station Details



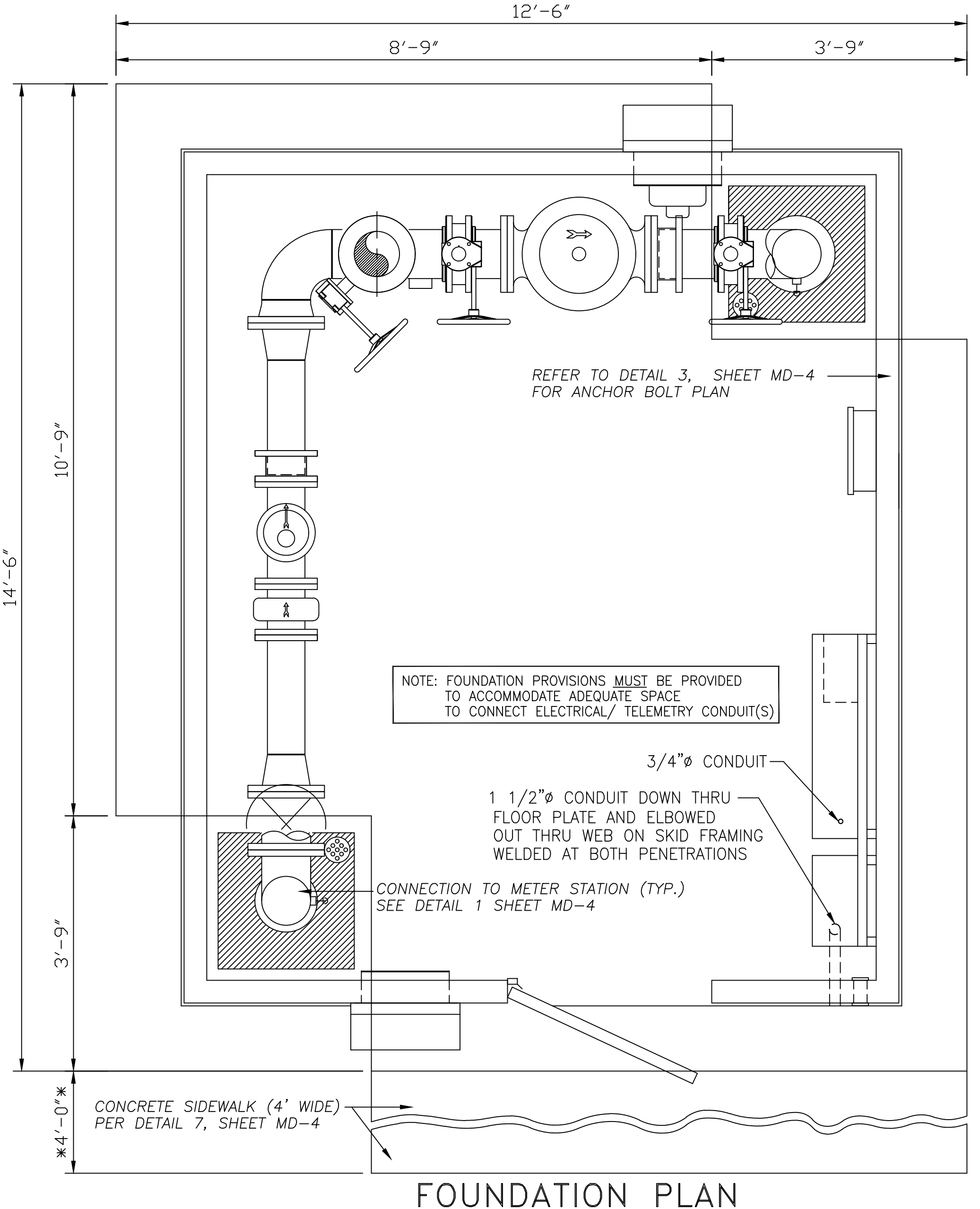
August 16, 2018  
CHRIS WILCOX  
2063  
Chris Wilcox, P.E.



SECTION A-A



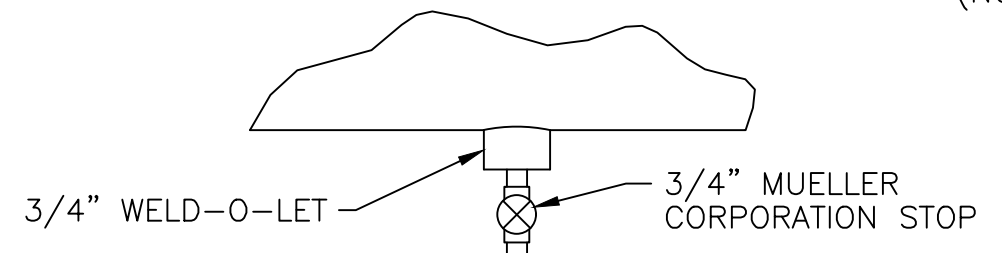
SECTION B-B



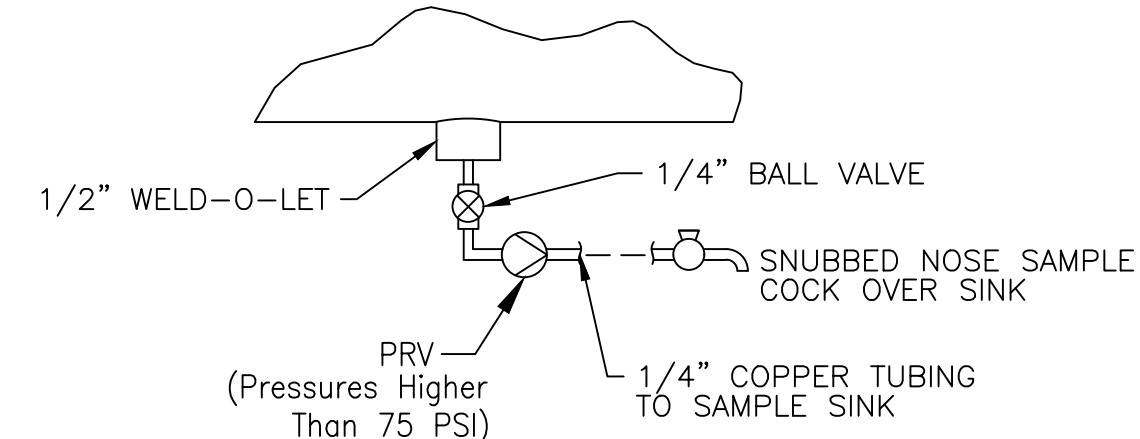
FOUNDATION PLAN

- NOTE:**
1. INSTALL A 4" PVC DRAIN PIPE FROM EACH BUILDING DRAIN. EXTEND DRAIN PIPE TO DAYLIGHT, PROTECTING END WITH RIP-RAP, OR TERMINATE IN ROCK DRAIN BED PER DETAIL 5, SHEET MD-4.
  2. ESTIMATED WEIGHT OF STATION = 13,000 LBS (SINGLE METER STATION).
  3. IMPORTANT CONTACT INFORMATION:  
KY UNDERGROUND PROTECTION @ 811 OR (800) 752-6007
  4. FILL MATERIAL MAY BE OFF-SITE BORROW SUITABLE FOR STRUCTURAL BACKFILL AND ACCEPTABLE TO THE ENGINEER OR DENSE GRADE AGGREGATE. FILL SHALL BE PLACED AND COMPACTED PER THE SPECIFICATIONS.
  5. FERTILIZE, SEED AND MULCH ALL DISTURBED AREAS AFTER CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE STATION DELIVERY WITH THE MANUFACTURER AND TO RECEIVE AND OFF-LOAD THE STATION. THE EXISTING SITE IS RELATIVELY FLAT, THUS NO PROPOSED CONTOURS ARE INDICATED. HOWEVER, THE SITE SHALL BE PROPERLY GRADED TO INSURE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE.
  6. BUILDING EXTERIOR & ROOF = METAL.

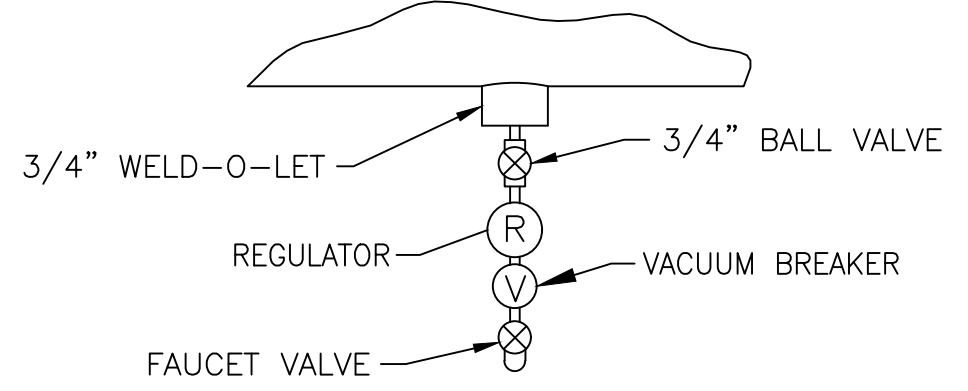
NOTE: FCA - FLANGED COUPLING ADAPTER



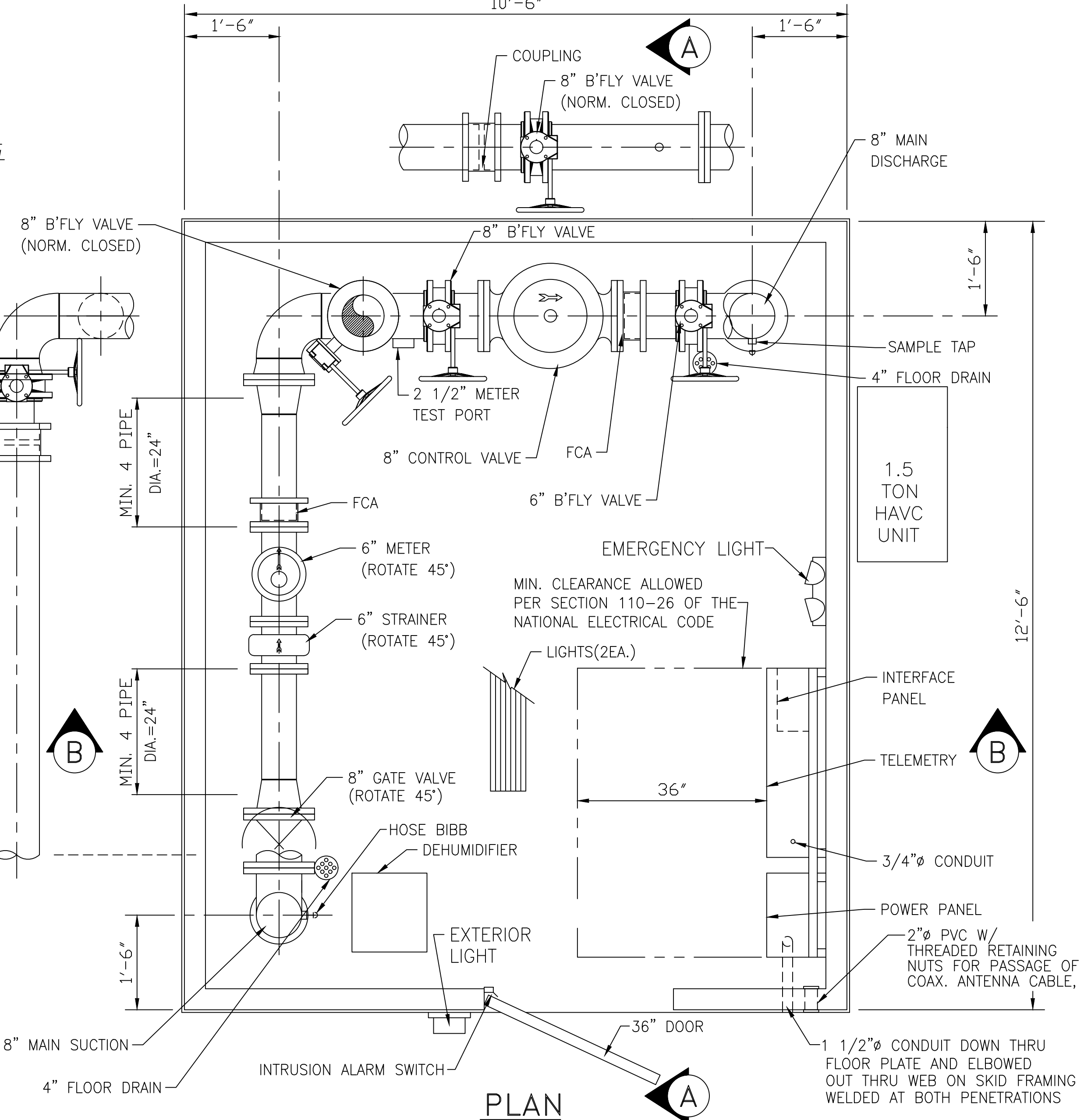
INJECTION TAP ALL LOCATIONS



SAMPLE TAPS ALL LOCATIONS



HOSE BIBB ALL LOCATIONS



PLAN

NO.	REVISION	DATE	BY
1	FOR KDW REVIEW	08-16-18	CWW

**McGHEE ENGINEERING**  
 202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985

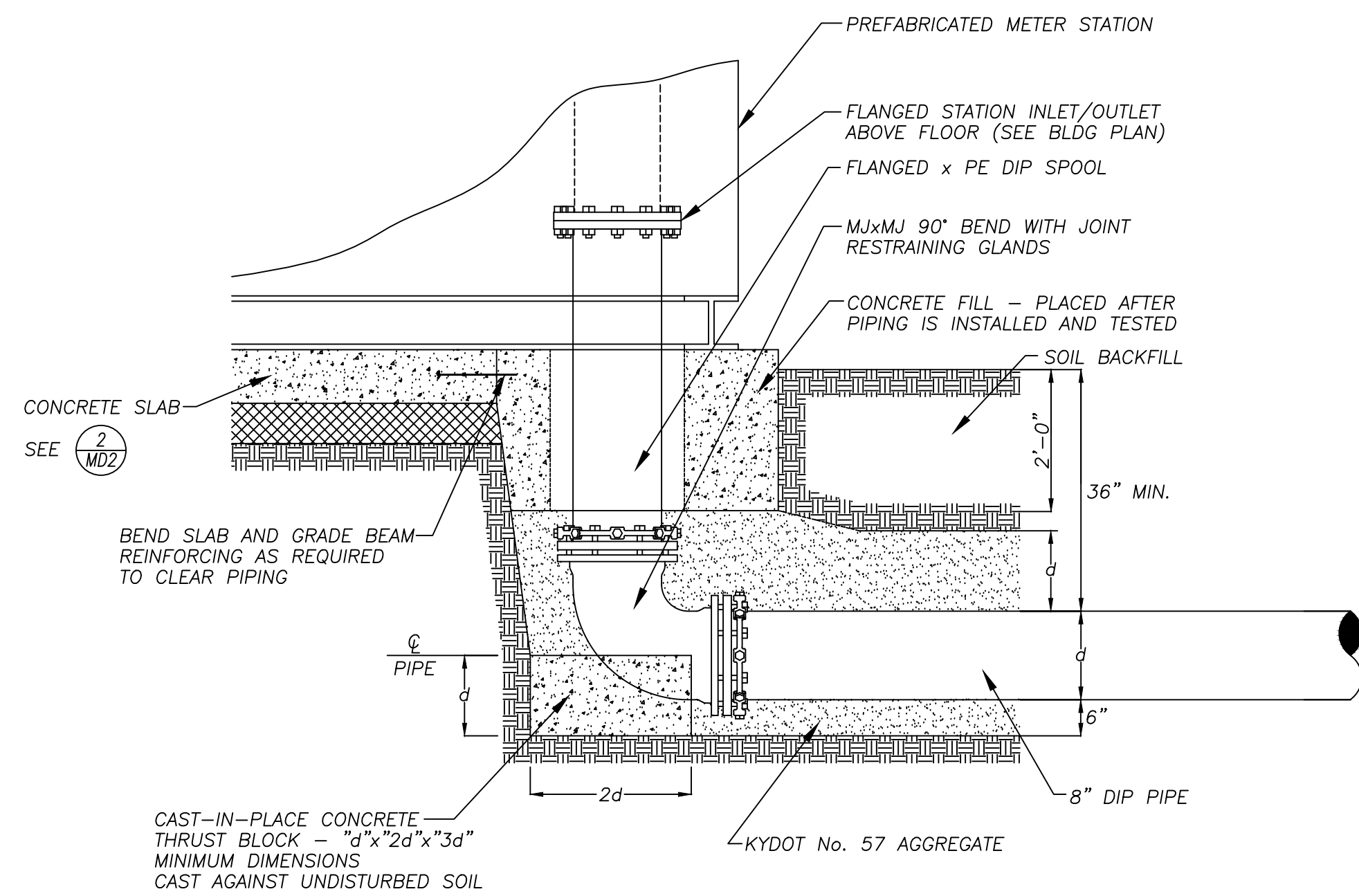
**TODD COUNTY WATER DISTRICT**  
 P.O. Box 520  
 Elkton, KY 42220  
 (270) 265-2229

FIRM: McGhee Engineering, Inc.  
 DES BY: CWW CHK BY: MWW  
 DWN BY: CWW APP BY:  
 SCALE: 3/4" = 1'-0"  
 PROJECT DATE: 2018  
 PRINTED: \_\_\_\_\_  
 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

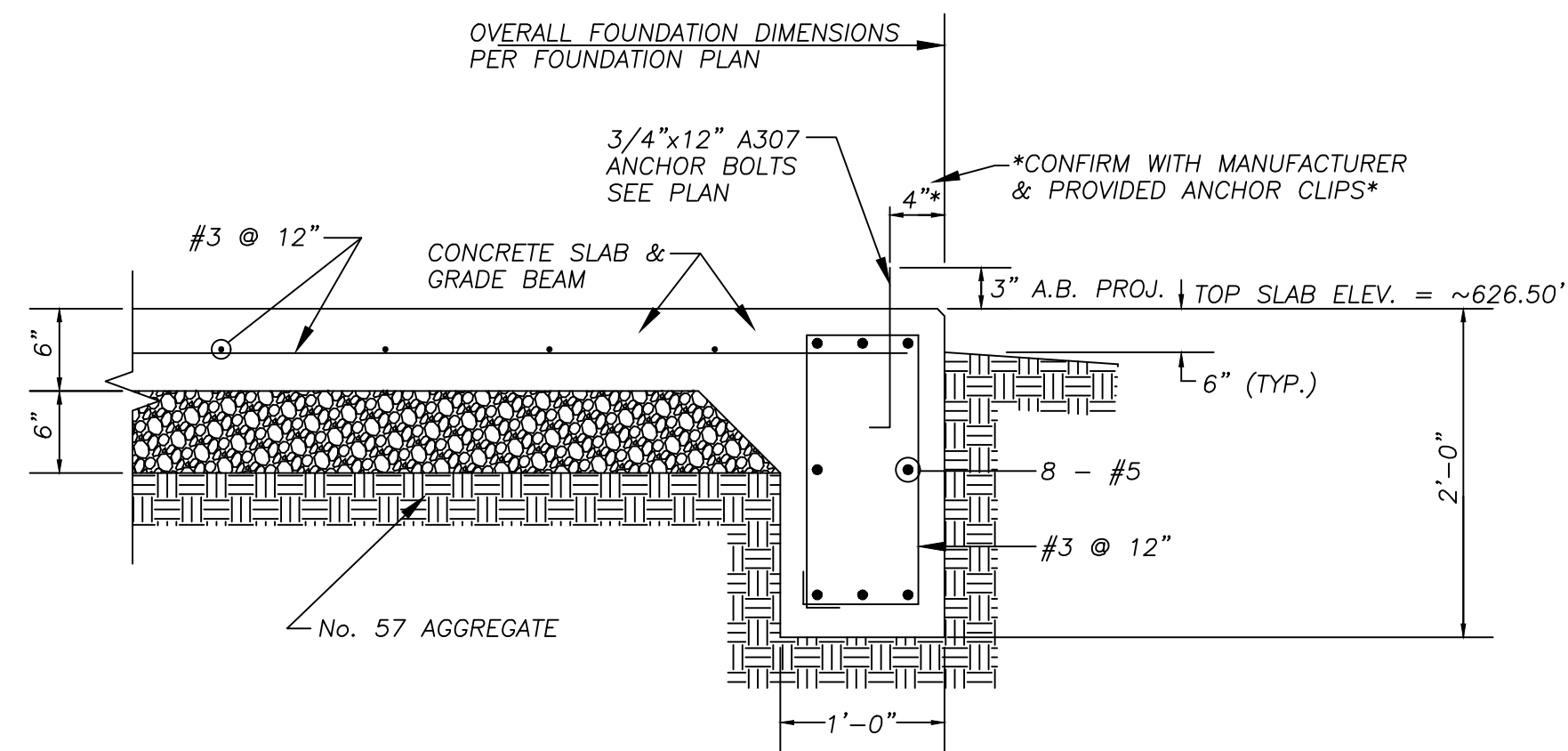
Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 ALT. BID: New Meter Station Details



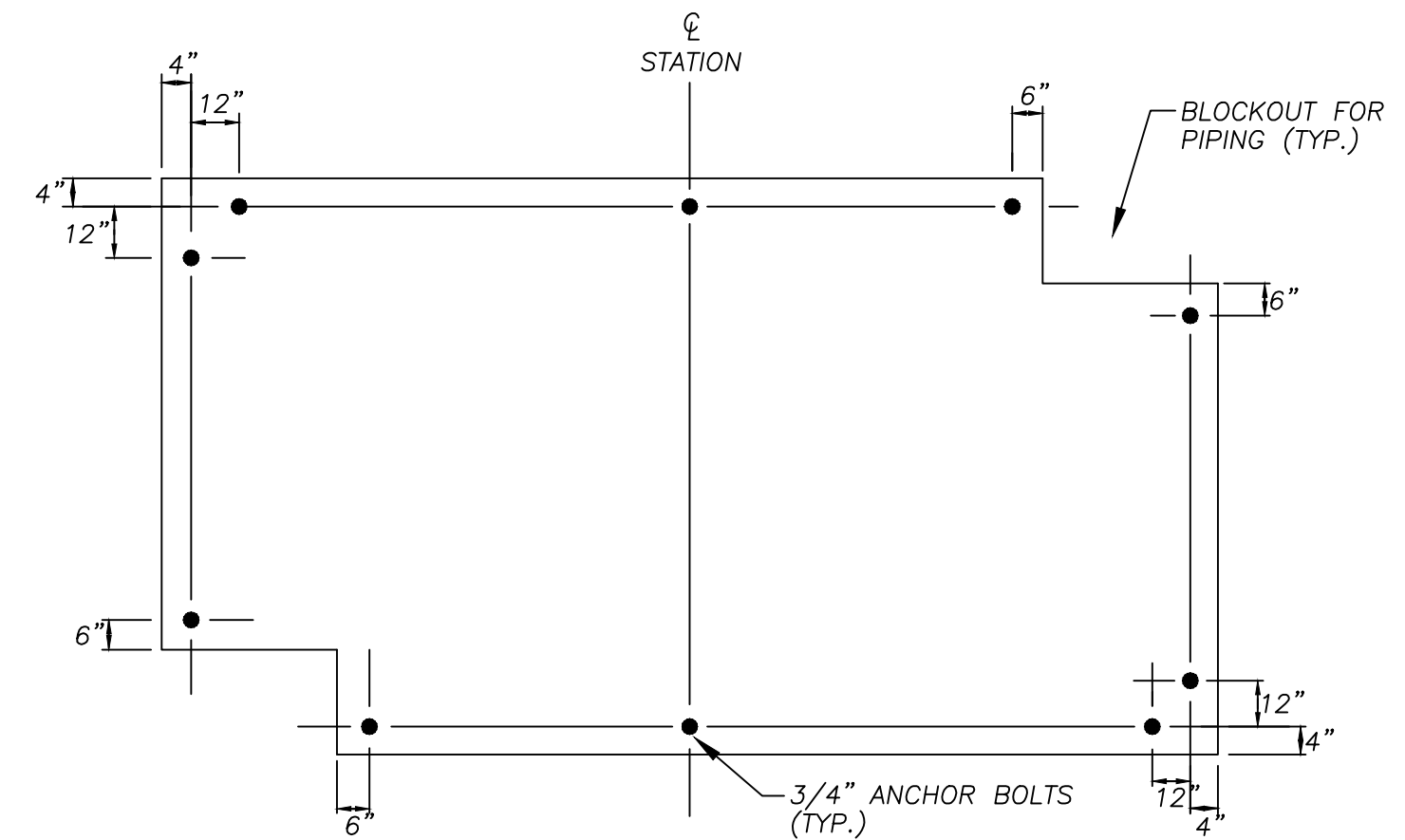
August 16, 2018  
 Chris Wilcott  
 Chris Wilcott, P.E.



**STATION INLET/OUTLET CONNECTION** 1  
NOT TO SCALE MD4

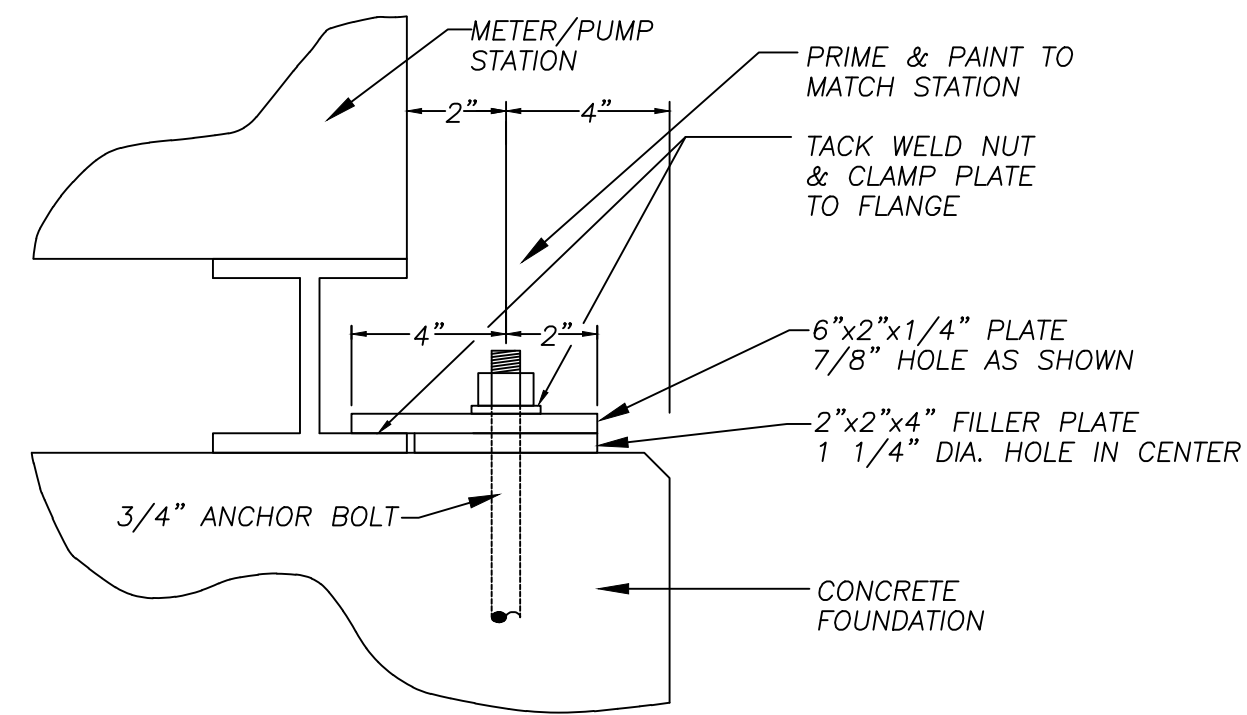


**FOUNDATION DETAIL** 2  
NOT TO SCALE MD4



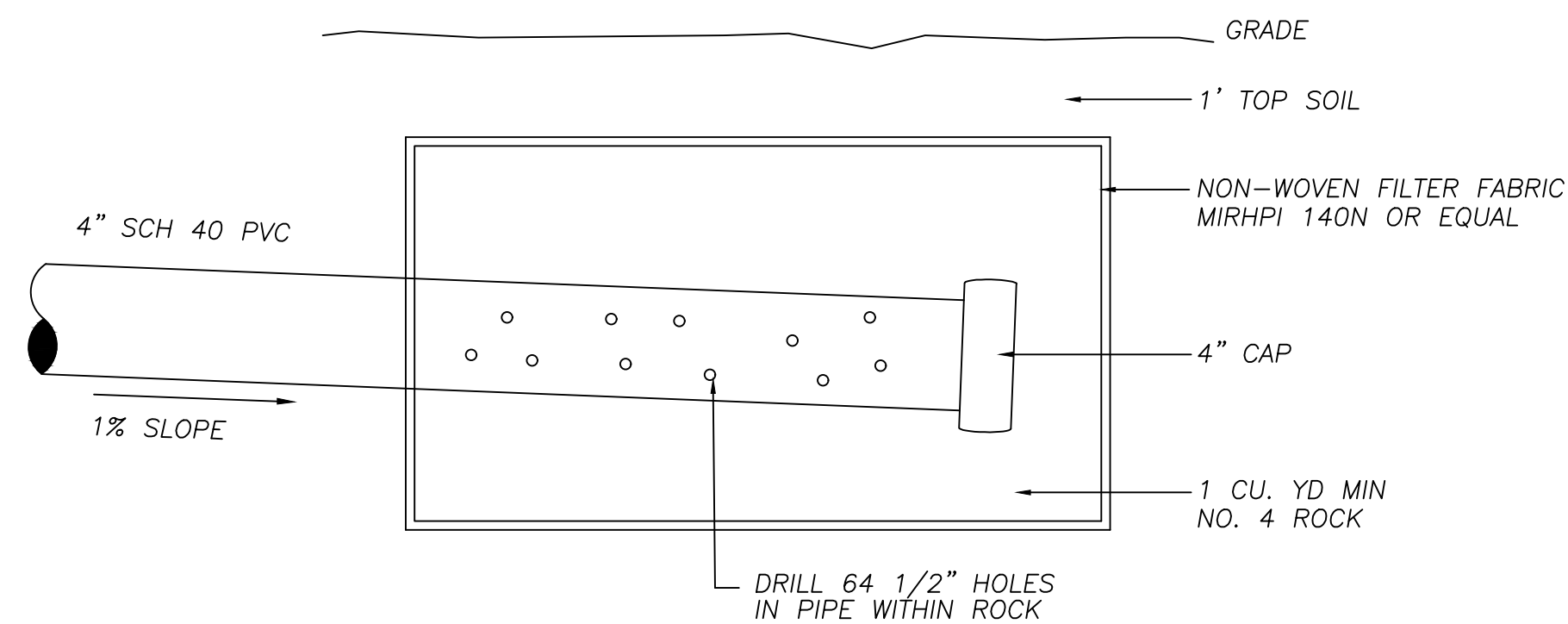
**ANCHOR BOLT PLAN** 3  
NOT TO SCALE MD4

- NOTES:
1. PROVIDE 3 BOLTS EACH LONG SIDE & 2 BOLTS EACH SHORT SIDE AS SHOWN FOR A TOTAL OF 10 BOLTS PER STATION
  2. CONFIRM OFFSET FROM SLAB EDGE WITH ANCHOR CLIPS, PROVIDED BY STATION MANUFACTURER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

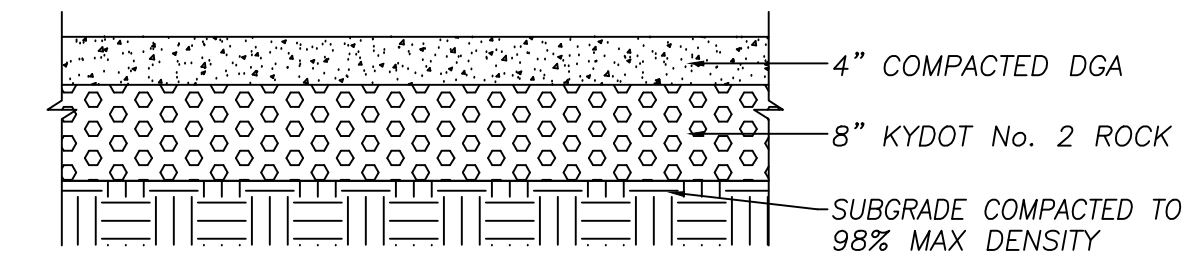


- NOTES:
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  2. CONFIRM OFFSET FROM SLAB EDGE WITH ANCHOR CLIPS, PROVIDED BY STATION MANUFACTURER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

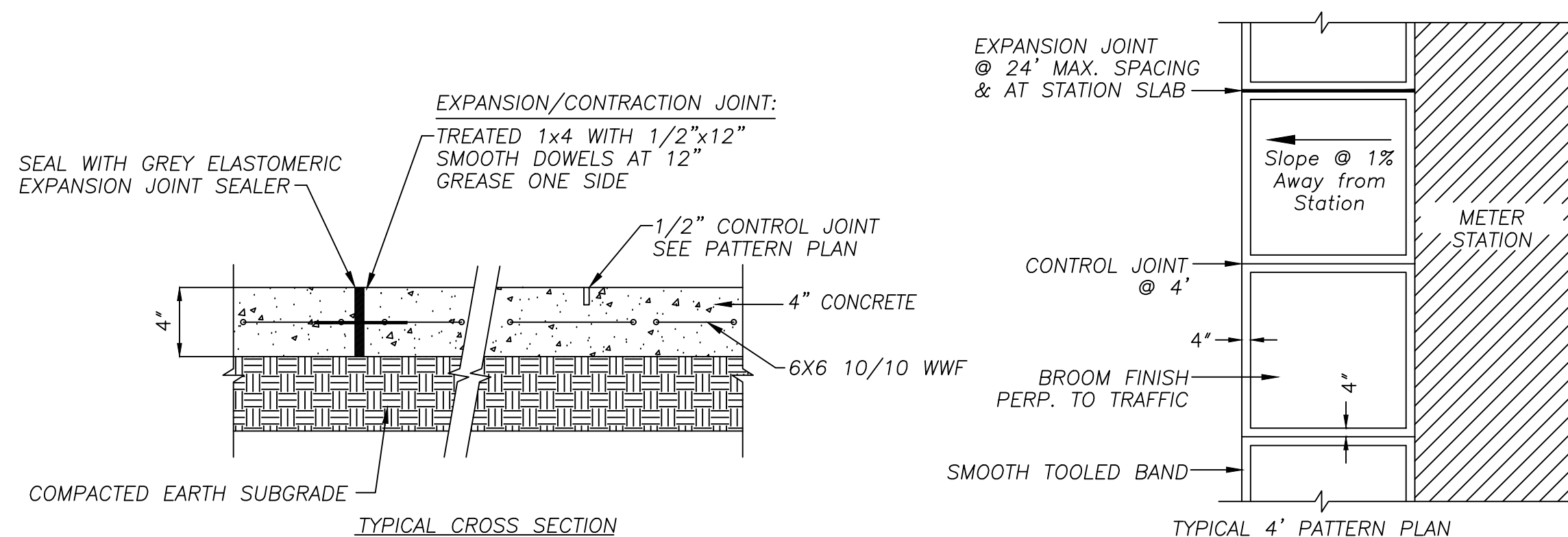
**ANCHOR BOLT DETAIL** 4  
NOT TO SCALE MD4



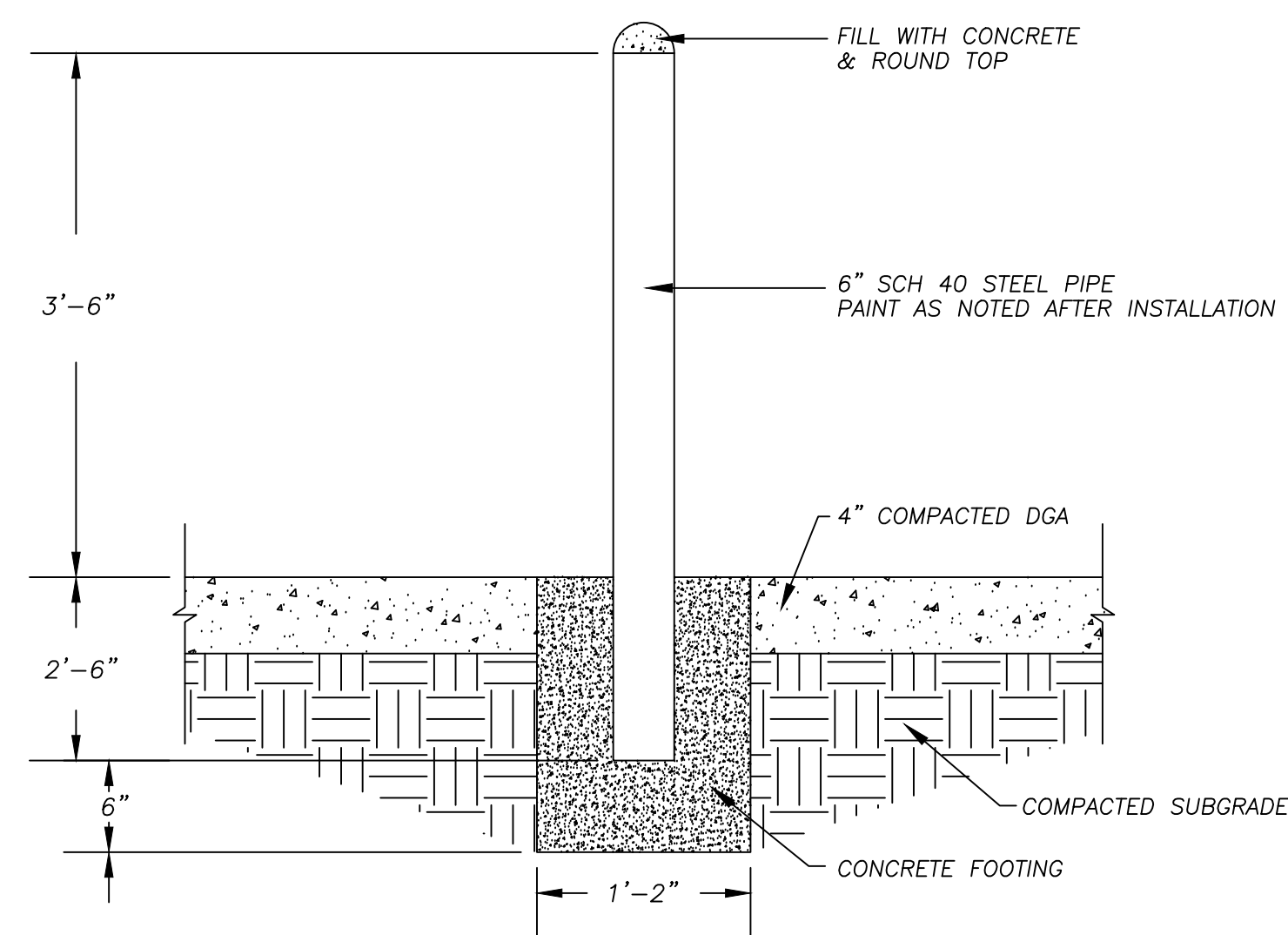
**BLOCK DRAIN BED DETAIL** 5  
NOT TO SCALE MD4



**ACCESS ROAD DETAIL** 6  
NOT TO SCALE MD4



**TYP. CONCRETE SIDEWALK** 7  
NOT TO SCALE MD4



NOTE: PAINT STEEL PIPE AND CONCRETE CAP WITH ONE COAT OF RUST INHIBITING PRIMER AND TWO COATS OF SEMI-GLOSS ENAMEL. COLOR TO BE "SAFETY YELLOW."

**PIPE BOLLARD DETAIL** 8  
NOT TO SCALE MD4

REVISIONS	
NO.	DATE
1	08-16-18
2	
3	
4	

**McGHEE ENGINEERING**  
 TODD COUNTY WATER DISTRICT  
 202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985  
 P.O. Box 520  
 Elkhorn, KY 42220  
 (270) 265-2229

FIRM: McGhee Engineering, Inc.  
 DES BY: CWW CHK BY: MWW  
 DWN BY: CWW APP BY:  
 SCALE: AS SHOWN  
 PROJECT DATE: 2018  
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 LENGTH OF BAR IS 1" ON ORIGINAL DRAWING

Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 1 - Water Line & Meter Station  
 ALT. BID: Existing Meter Station Details

**Quality On Tap!**

August 16, 2018  

 CHRIS WILCUTT  
 21625  
 PROFESSIONAL ENGINEER  
 Chris Wilcutt, P.E.

DRAWING NO.

SHEET MD-4



**Specifications and Contract Documents**  
***Novelis Water Supply Project***  
***Contract No. 2 – Tank Addition***

*prepared for the*

**Todd  
County  
Water  
District**



**Dr. George Brown**  
*Chairman*

**Billy Lear**  
*Board Member*

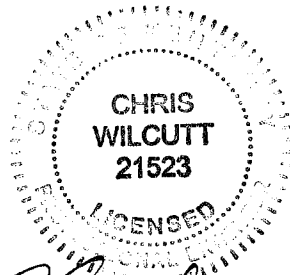
**Ed Slack**  
*Board Member*

**Tony Adler**  
*Board Member*

**Lois Brown**  
*Board Member*

*prepared by*

***McGhee Engineering, Inc.***  
202 Ewing Street, P. O. Box 267  
Guthrie, Kentucky 42234  
(270) 483-9985



*Chris Wilcutt*  
11/15/18

**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT: CONTRACT 2 – TANK ADDITION**

**CONTRACT DOCUMENTS**

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Certification Regarding Debarment, etc (AD 1048)	2
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**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT: CONTRACT 2 – TANK ADDITION**

**CONTRACT DOCUMENTS**

**Table of Contents (cont-)**

**Appendix**

- Appendix 1 - KPDES Form NOI-SW (Notice of Intent for Storm Water Discharges)
- Appendix 2 – USDA Kentucky Bulletin info regarding American Iron & Steel (AIS Requirement)
- Appendix 3 – Geotechnical Report (Vector Engineers, Inc.; Shelbyville, Kentucky)

**Contract Drawings**

Contract Drawings consist of 8 Sheets bound separately from this document.  
See the index on the cover sheet of the Contract Drawings.

## ADVERTISEMENT FOR BIDS

Todd County Water District  
P.O. Box 520  
2201 New Highway 68 West  
Elkton, KY 42220

**RE: Novelis Water Supply Project: Contract No. 2 – Tank Addition**

The **Todd County Water District** will receive separate, sealed Bids for their **Novelis Water Supply Project: Contract No. 2 – Tank Addition** until **3:30 p.m., Friday, February 1, 2019** at the office of Todd County Water District, 2201 New Highway 68 West, P.O. Box 520, Elkton, Kentucky 42220, at which time they will be publicly opened and read aloud.

The work to be performed involves the construction of a 500,000 gallon composite, elevated water storage tank and other related items near an industrial site along US Highway 79 in Guthrie, Kentucky (Todd County). Bids will be received for a single prime Contract. Bids shall be on a lump sum basis and possible additive alternate bid items 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. Prospective 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.mcgheengineering.com](http://www.mcgheengineering.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.mcgheengineering.com](http://www.mcgheengineering.com).

"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 listed 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."

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

Published by the authority of the      Todd County Water District  
John Haley, Manager

Dated: January 3, 2019

## **INSTRUCTIONS TO BIDDERS**

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

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Article 3 – Qualifications of Bidders

Article 4 – Site and Other Areas; Existing Site Conditions; Examination of Site; Owner’s Safety Program;  
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### 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, including but not limited to American Iron and Steel requirements as mandated and subsequent statutes mandating domestic preference which apply to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have



been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;

- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

## ARTICLE 6 – PRE-BID CONFERENCE

6.01 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 lump sum price basis for the Work on the Bid Form.

14.02 Bidders shall complete and submit with the Bid all such items as are identified as being part of the bid submittal.

14.03 Discrepancies between the price written in figures and price written in words will be resolved in favor of the price written in words.

14.04 Bids will be evaluated on the basis of price, and on the responsiveness and qualifications of the Bidder. Life-cycle cost analysis and the effect of time of completion on the overall project may be considered to determine the lowest overall cost to the entire water system. It shall be at the Owner's sole discretion to determine which bid, if any, is most cost effective considering price and time of completion in relation to the total water system project.

#### 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.

## 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 less the value of materials purchased directly by OWNER/COMMISSION, if applicable.

## 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 United States Department of Agriculture, Rural Utilities Service (RUS). RUS requirements will apply to the Project.**

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

## 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 (if applicable).

### 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 Pursuant to 2017 Kentucky House Bill 3, State prevailing wages do not apply to this Contract.

24.03 Federal Davis Bacon wage rates do not apply to this Contract.

### ARTICLE 25 – OTHER BID REQUIREMENTS

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

- List of Subcontractors
- Statement of Experience
- Certification Regarding Debarment, etc.
- Compliance Statement
- Certification for Contract Grants and Loans

### 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 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. "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 deminimis and minor components waiver apply to this contract.

## 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. **Bidders shall abide by all contract insurance requirements and limits as set forth in the Supplementary Conditions section of the Contract Documents.**

## 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*):

**Todd County Water District**  
**PO Box 520**  
**Elkton, KY 42220**

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum

\$

(Words)

(Figures)

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

**BIDDER**

**SURETY**

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By:

Signature

By:

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest:

Signature

Attest:

Signature

Title

Title

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

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

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

## BID FORM

Project Identification: Todd County Water District's  
Novelis Water Supply Project: Contract No. 2 – Tank Addition

Contract Identification: Contract No. 2 – Tank Addition

### ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is Submitted to: Todd County Water District  
2201 New Highway 68 West; PO Box 520  
Elkton, Kentucky 42220
- 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 and including all American Iron and Steel requirements.
  - D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
  - E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and

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

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

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

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of 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:

<b>BASE BID</b> <b>(Bidder to fill in bid price and completion time)</b>	
Provide a <b>500,000 gallon composite elevated water storage tank</b> including foundation, valves & accessories, fitting, piping, site work, fencing, power supply & connections, SCADA communications, access road and all other related work necessary for a complete and operational water storage system ready for use.	<b>Lump Sum Price</b>  \$ _____  _____

5.02 **The apparent Low Bidder is required to submit a detailed breakdown of his proposal within 48 hours after the bid opening which totals the lump sum amount above. This proposal should provide a detailed breakdown of the lump sum bid with unit pricing and thorough description of each component of the work. Any proposed deviations or exceptions from the specifications must be thoroughly described in the Bidder’s proposal. Any special provisions must be thoroughly described in the Bidder’s detailed proposal, if warranted.**

5.03 The prices shall include all labor, materials, (all excavation is bid unclassified and will not constitute any additional cost to OWNER if rock is encountered), overhead, profit, insurance, and other costs necessary to cover the finished work of the several kinds called for.

5.04 Bidder acknowledges that (1) the Lump Sum Bid Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) 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.

**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. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplemental General Conditions;
- C. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- D. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans;

- E. Manufacturers' Certification letter (See Appendix) on any approved "or equal" or substitute request to ensure compliance with AIS requirements and any subsequent statues mandating domestic preference.
- F. List of Subcontractors
- G. Statement of Experience

**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 \_\_\_\_\_, 2019.

Seal below (if required)

## LIST OF SUBCONTRACTORS

The following SUBCONTRACTORS are proposed for work on the PROJECT.

No.	Subcontractor Name, Address & Phone No.	Work Item(s)
1.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
2.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
3.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
4.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
5.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
6.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
7.	<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>

Bidder

## 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.

<b>No.</b>	<b>Contact Person, Company &amp; Phone No.</b>	<b>Project Description, Date &amp; Approximate Value of Work</b>
1.	_____ _____ _____	_____ _____ _____
2.	_____ _____ _____	_____ _____ _____
3.	_____ _____ _____	_____ _____ _____
4.	_____ _____ _____	_____ _____ _____
5.	_____ _____ _____	_____ _____ _____
6.	_____ _____ _____	_____ _____ _____

\_\_\_\_\_  
Bidder



CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

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

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

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

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

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

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

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

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

oOo

**U.S. DEPARTMENT OF AGRICULTURE**

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

---

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

**(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)**

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

---

Organization Name

PR/Award Number or Project Name

---

Name(s) and Title(s) of Authorized Representative(s)

---

Signature(s)

Date

## Instructions for Certification

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

## COMPLIANCE STATEMENT

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

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

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

1. I  have,  have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, I  have,  have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

If the proposed contract is for \$50,000 or more and I have 50 or more employees, I also represent that:

3. I  have,  have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, I  have,  have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

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

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

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

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

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

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

DATE \_\_\_\_\_

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

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

**NOTICE OF AWARD**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PROJECT Description: **Todd County Water District  
Novelis Water Supply Project  
Contract No. 2 – Tank Addition**

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated \_\_\_\_\_ 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 \_\_\_\_\_.

**TODD COUNTY WATER DISTRICT**

\_\_\_\_\_  
John Haley, System Manager

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE OF AWARD is hereby acknowledged and dated this \_\_\_\_ day of \_\_\_\_\_ 2019.

**(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 Todd County Water District (“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 construction of a 500,000 gallon composite, elevated water storage tank and other related items near an industrial site along US Highway 79 in Guthrie, Kentucky (Todd 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:

**Novelis Water Supply Project: Contract No. 2 – Tank Addition**

**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 **360** 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 **390** 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 an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A below:

A. For all Work other than Unit Price Work, a Lump Sum of:

\_\_\_\_\_ (words)

\_\_\_\_\_ (figure)

#### 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 consisting of 8 sheets with each sheet bearing the following general title: Novelis Water Supply Project: Contract No. 2 – Tank Addition
  9. Addenda (numbers \* to \*, inclusive).
  10. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages 1 to 4 inclusive).
    - b. Documents submitted by Contractor prior to Notice of Award – List of Subcontractors.
    - c. Documents submitted by Contractor prior to Notice of Award – Statement of Experience.
  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

**Todd County Water District** \_\_\_\_\_

\_\_\_\_\_

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

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

Title: **Dr. George Brown, Chairman** \_\_\_\_\_

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

[CORPORATE SEAL]

[CORPORATE SEAL]

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

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

Title: **John Haley, System Manager** \_\_\_\_\_

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

Address for giving notices:

Address for giving notices:

PO Box 520 \_\_\_\_\_

\_\_\_\_\_

Elkton, KY 42220 \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

**Todd County Water District  
PO Box 520  
Elkton, KY 42220**

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 16

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

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

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

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

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

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### 14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including

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

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

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

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

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

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

16. Modifications to this Bond are as follows:

**PAYMENT BOND**

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

**Todd County Water District  
 PO Box 520  
 Elkton, KY 42220**

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

**BOND**

Bond Number:

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

Amount:

Modifications to this Bond Form:  None  See Paragraph 18

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

**CONTRACTOR AS PRINCIPAL**

**SURETY**

\_\_\_\_\_ *(seal)*

Contractor's Name and Corporate Seal

\_\_\_\_\_ *(seal)*

Surety's Name and Corporate Seal

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

Signature

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

Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

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

Signature

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

Signature

Title

Title

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



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

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
  - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
    1. The name of the Claimant;
    2. The name of the person for whom the labor was done, or materials or equipment furnished;
    3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    4. A brief description of the labor, materials, or equipment furnished;
    5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
  - 16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
  - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
  - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

**NOTICE TO PROCEED**

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_

PROJECT: **Todd County Water District  
Novelis Water Supply Project  
Contract No. 2 – Tank Addition**

You are hereby notified to commence WORK in accordance with the Agreement dated \_\_\_\_\_ on or before \_\_\_\_\_. In accordance with the Agreement, the date of substantial completion is \_\_\_\_\_, and the number of days needed to achieve readiness for final payment is **360**. In accordance with the Agreement, the date of substantial completion is \_\_\_\_\_, and the number of days needed to achieve readiness for final payment is **390**.

Before starting work at the site, Contractor must comply with the following:  
Not applicable.

**TODD COUNTY WATER DISTRICT**

\_\_\_\_\_  
John Haley, Manager

**ACCEPTANCE OF NOTICE**

Receipt of the above NOTICE TO PROCEED is hereby acknowledged and dated this \_\_\_\_ day of \_\_\_\_\_ 2019.

**(contractor)**

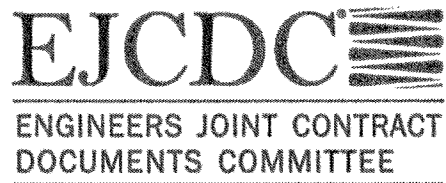
\_\_\_\_\_  
Name, Title

\_\_\_\_\_  
Employer Identification Number

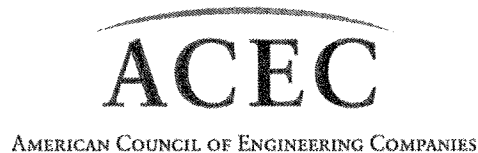
This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

## 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 consider 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.

Certificate of Owner's Attorney & Agency Concurrence

**CERTIFICATE OF OWNER'S ATTORNEY**

PROJECT NAME: Novelis Water Supply Project: Contract No. 2 -- Tank Addition

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

I, the undersigned, Harold Mac Johns, the duly authorized and acting legal representative of Todd County Water District, do hereby certify as follows:

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

\_\_\_\_\_  
Name

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

**AGENCY CONCURRENCE:**

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

Agency: \_\_\_\_\_

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

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

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

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. **Any applicable reports of explorations, drawings and/or tests of subsurface conditions at or adjacent to the Site are included within the Appendix of these contract documents.**

#### 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.

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:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Foreign voluntary worker compensation	<u>Statutory</u>

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

General Aggregate	\$ <u>3,000,000</u>
Products - Completed Operations Aggregate	\$ <u>3,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>

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

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 \$ 500,000

4. Excess or Umbrella Liability:

Per Occurrence \$ 1,000,000

General Aggregate \$ 1,000,000

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-13.03 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) 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.

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
	\$ _____	\$ _____
<b>TOTALS</b>	\$ _____	_____
<b>NET CHANGE IN CONTRACT PRICE</b>	\$ _____	_____

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)

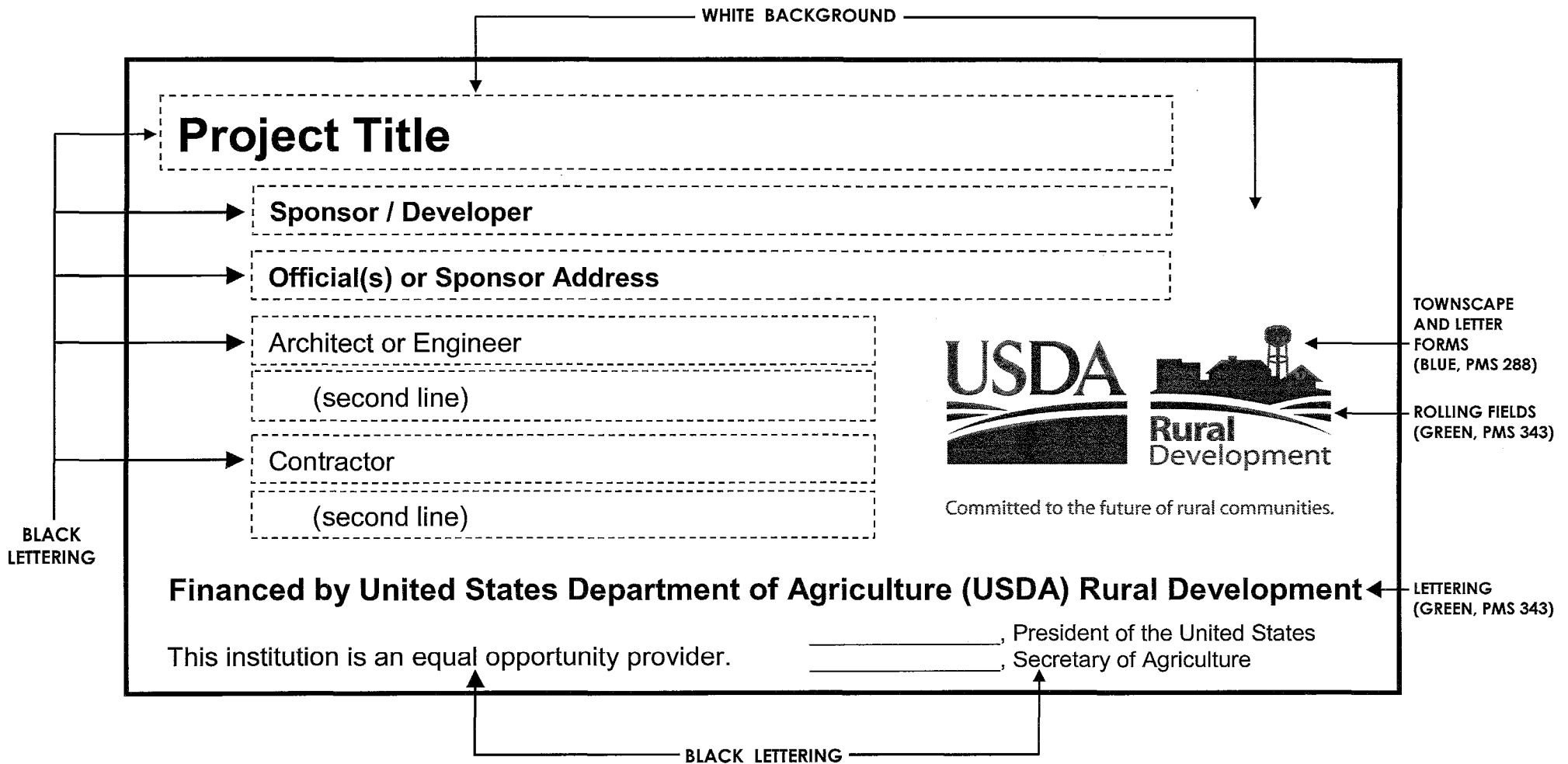
Accepted \_\_\_\_\_ (Contractor) \_\_\_\_\_ (Date)

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 CONSTRUCTION SIGN FOR RURAL DEVELOPMENT PROJECTS



**SIGN DIMENSIONS: 1200 mm x 2400 mm x 19 mm (approx. 4' x 8' x 3/4")**  
**PLYWOOD PANEL (APA RATED A-B GRADE-EXTERIOR)**

## 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.
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.

END OF SECTION

## SUMMARY OF WORK

### 1.0 WORK COVERED BY CONTRACT DOCUMENTS

The work to be performed involves construction of an elevated water storage tank and related items at an industrial site along US Highway 79 in Guthrie, Kentucky (Todd County) as described by the contract drawings and specifications. Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (AIS requirement) does apply to this project.

### 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.

**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 listed 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.**

The Bidder/Contractor shall submit Manufacturers' Certification letter of compliance with 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 for all equals or substitutes approved by Addenda for American Iron and Steel products as provided in these Contract Documents.

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 tank 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.

#### 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.

## 2.9 Project Sign

The Contractor shall prepare and install the specified project signs as shown herein, shall maintain the signs in good repair for the duration of the project, and shall remove and dispose of the signs upon completion of the work.

## 2.10 Construction Progress Meetings

The Contractor shall designate a Project Manager who shall be responsible for attending monthly progress meetings at a location near the site of the work. The Project Manager shall possess detailed knowledge of the type of work being performed, and of the status and progress of the Project.

## 3.0 EXISTING FACILITIES

### 3.1 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.

### 3.2 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.

#### 4.0 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 work (i.e. clean-up, surface restoration, etc.), to perform maintenance for the required period, or to provide warranty for that portion of the work.

#### 5.0 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

## SUMMARY OF WORK

### 1.0 WORK COVERED BY CONTRACT DOCUMENTS

The work to be performed involves construction of an elevated water storage tank and related items at an industrial site along US Highway 79 in Guthrie, Kentucky (Todd 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.

**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 listed 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.**

The Bidder/Contractor shall submit Manufacturers' Certification letter of compliance with 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 for all equals or substitutes approved by Addenda for American Iron and Steel products as provided in these Contract Documents.

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 tank 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.

#### 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.

## 2.9 Project Sign

The Contractor shall prepare and install the specified project signs as shown herein, shall maintain the signs in good repair for the duration of the project, and shall remove and dispose of the signs upon completion of the work.

## 2.10 Construction Progress Meetings

The Contractor shall designate a Project Manager who shall be responsible for attending monthly progress meetings at a location near the site of the work. The Project Manager shall possess detailed knowledge of the type of work being performed, and of the status and progress of the Project.

## 3.0 EXISTING FACILITIES

### 3.1 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.

### 3.2 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.

#### 4.0 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 work (i.e. clean-up, surface restoration, etc.), to perform maintenance for the required period, or to provide warranty for that portion of the work.

#### 5.0 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

## **SITE, ACCESS, TEMPORARY FACILITIES, UTILITIES**

### **1.0 SITE**

Todd County Water District's property along US Highway 79 in Guthrie, Kentucky (Todd 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 Todd County Water District, within easements on private property, and on existing public rights-of-way and will provide any other required permanent and construction easements. Access to the site of the work is the responsibility of the Contractor.
- b. **LOCATION OF TEMPORARY FACILITIES:** Owner's temporary office facilities, Contractor's Field offices, Sub-Contractors' Field Offices, Engineer's Field Office, Material Storage Buildings, Material and Equipment Storage Yards, and parking areas for all project workers shall be located in areas approved by the Engineer.
- 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.

The Contractor shall protect all existing structures and property from damage and shall provide bracing, shoring, or other work necessary for such protection.

### **2.0 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. The access road 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 the public roads shall be considered a matter of the Contractor's or his suppliers' public liability outside the purview of this Contract.

Contractor shall provide adequate barricades, warning signs, lights, etc., for construction operations hazardous to traffic and public safety.

### **3.0 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 on-site 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. On-site parking shall be limited to that space available in the assigned work and storage area. Additional 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.

#### 4.0 UTILITIES & SERVICES

- a. Water for disinfection and testing of lines and tanks will be available one time from the Todd County Water District without charge. Water for any other purpose will be paid for by the Contractor. The Contractor shall be aware that water may not be readily available until such time that the OWNER is pumping water into new infrastructure components, originating from its own facilities in Guthrie, Kentucky.
- 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.
- f. **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 01-150

## **SUBMITTALS**

### 1.0 SCHEDULE OF WORK

#### 1.1 Responsibility for Scheduling

The Owner reserves the right to direct that work in certain areas be given priority over other parts of the work. In the absence of such directives, however, the Contractor shall be responsible for establishing the schedule and progression of the work, subject to contract time limits.

#### 1.2 Project Schedule

Prior to beginning field work on the project, the Contractor shall prepare a detailed construction schedule for the entire project. The schedule shall be presented in bar chart form, and shall identify major work item durations, milestones and sequence of work. The schedule shall be presented on a single sheet of paper no larger than 24"x36", and shall be submitted within 14 days of notice to proceed.

At monthly intervals, corresponding to submission of pay requests, the Contractor shall submit an updated project schedule. The updated schedule shall compare current status of the work with the projected status. Any tasks identified as being behind schedule shall be addressed in a separate narrative report detailing steps to be taken to re-establish schedule compliance. Pay requests may not be processed until an acceptable, corresponding schedule update is submitted. Three copies of the schedule, and each update are to be submitted to the Engineer.

### 2.0 PROGRESS MEETINGS

The Contractor shall provide a representative to attend regular monthly board meetings to report on project progress and to respond to questions from the Board of Directors and the public. Monthly board meetings are normally conducted the last Monday each month at the District's water office in Elkton, KY. The Contractor shall attend other project related meetings from time to time as designated by the Engineer.

### 3.0 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

#### 3.1 General

Submit six copies of all required shop drawings to the 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 Engineer's review.

#### 3.2 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 therefore 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.

### 3.3 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. Tank Shell, Support & Foundation (with Calculations).
- b. Roof (with Calculations).
- c. Tank Accessories.
- d. Paint and Coatings.
- e. Fence and Gates.
- f. Ductile iron pipe and fittings.
- g. Overflow pipe and fittings.
- h. Pipe Certifications and Test Results.
- i. All valves (butterfly, gate, air release, air/vacuum, combination air, etc.)
- j. Aggregates used as bedding or backfill and roadways (source and gradation).
- k. Concrete mix designs.
- l. Reinforcing steel details and placement.
- m. Precast concrete items (i.e vaults, splash pads, etc).
- n. Access hatch and covers.
- o. Mechanical Joint Restraint
- p. Tank Lighting
- q. Electrical Wiring, Conduit and Devices

### 4.0 OPERATING AND MAINTENANCE MANUALS

Furnish four copies of manuals of instruction for operation and maintenance of the following items:

- a. Water Storage Tank
- b. Cathodic Protection System
- c. Valves
- d. Fences & Gates
- e. SCADA equipment, as applicable

Manuals shall include, as applicable, a parts list, exploded or sectional views, recommended maintenance program, internal piping and wiring details, operating procedures, complete description of the item including manufacturer (including address and telephone number), model number, style, options, etc., and name, address and telephone number of a local supplier or parts distributor.

### 5.0 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. Disinfection testing results as outlined in Section 11-102 or 11-103.
4. As-built drawings. (Marked-up set of construction drawings showing actual line location and any deviations from the plans. These drawings will be separate from those notes and measurements made by the resident inspector.)

END OF SECTION 01-200

SECTION 01-201

**ALLOWANCES**

1.0 GENERAL

1.1 WORK INCLUDED

The Contractor shall include the following amounts as allowances in the bid price. Allowances shall be administered as set forth in the General Conditions. Use of allowance funds must be approved in writing by the Engineer and Owner in advance of their use. Unused allowance funds will be retained by the Owner.

1.2 ALLOWANCE AMOUNTS

a. Establishment of SCADA Controls & Equipment for LTRWC (Primex/Strand)	<u>\$30,000.00</u>
TOTAL OF ALLOWANCES	\$30,000.00

1.3 USE OF ALLOWANCES

Allowance funds shall be used to pay out-of-pocket charges for project related expense items that were not within the specified scope of work of the contract. Allowance funds shall be used only after written concurrence of the Engineer.

Where approved for use, allowance funds shall be disbursed by the Contractor for the subject charge or expense. Documentation of the charge or expense shall be submitted with the next monthly pay request for reimbursement by the Owner. Unused allowance funds shall be credited back to the Owner.

END OF SECTION 01-201

## CONSTRUCTION LAYOUT AND RECORD DRAWINGS

### 1.0 WORK COVERED BY CONTRACT DOCUMENTS

The work to be performed involves all survey, calculations and measurement work for providing layout and staking of the construction work to be performed, and as-built survey and documentation of the finished work.

### 2.0 QUALIFICATIONS OF THE SURVEYOR

2.1 All work performed under this section shall be performed by or under the supervision of a Land Surveyor actively licensed to practice in the state in which the work is to be performed.

2.2 The Land Surveyor shall maintain the following insurance coverages for the duration of the work.

<u>Coverage</u>	<u>Minimum Coverage Limit</u>
General Liability	\$1,000,000
Professional Liability	\$1,000,000
Commercial Auto	\$1,000,000
Workers Compensation	Statutory Limit

2.3 Contractor shall submit for approval the name of the surveyor, evidence of professional licensure, a summary of the surveyor's professional experience relevant to the Project, and evidence of the required insurance in accordance with Section 01-300 prior to the performance of any work under this section.

### 3.0 PRIMARY PROJECT CONTROL

2.1 The Engineer has established primary project control points for use in design of the Work. These control points are noted on the Drawings. No additional control points will be set by the Engineer.

2.2 The Contractor's surveyor shall locate all primary control points and perform such measurements as may be required to confirm that no primary control point has been disturbed. In the event that any primary control point is missing, destroyed, or suspected of being disturbed, the Engineer shall be promptly notified.

### 3.0 VERIFICATION SURVEY

3.1 Prior to the initiation of any other field work, and prior to fabrication of any materials or structures that might be affected, the Contractor's surveyor shall conduct a field verification survey. The purpose of the field verification survey shall be to provide a spot check of critical areas to confirm the accuracy of design survey, and to verify that field conditions have not changed since the design survey.

3.2 The field verification survey shall concentrate on areas such as proposed tie-ins to existing facilities (e.g. manholes, building slabs, roadways, etc.) and areas where there is evidence of recent disturbance or other reason to suspect that changes may have occurred that would affect the proposed construction.

3.3 Any suspected error or changed condition revealed by the field verification survey shall be promptly brought to the attention of the Engineer.

3.4 An overlay drawing shall be produced in AutoCAD format indicating the results of the verification survey. An electronic file and one paper copy of the verification survey shall be submitted to the Engineer.

### 4.0 CONSTRUCTION STAKING

4.1 All project control in excess of the primary project control initially established by the Engineer shall be provided by the Contractor's surveyor.

4.2 All layout and staking required for construction of the Work shall be provided by the Contractor's surveyor.



- 4.3 Staking and layout work shall be performed by competent and experienced personnel using equipment as required to achieve accurate results. Precision of the survey work shall be consistent with industry standards for similar work.
- 4.4 After verification of the integrity of the primary project control, the Contractor will be responsible for replacing any control points or staking lost as a result of construction operations, vandalism, tampering, or other occurrences.
- 4.5 The Contractor's surveyor shall be responsible for establishing lines and grades to assure that the work is constructed according to the project plans, and to locate property boundary lines, easements, etc. as required to assure that the work is constructed within or upon the appropriate property or easements.

5.0 RECORD DRAWINGS

- 5.1 The Contractor's surveyor shall prepare an as-built survey of the completed work. The survey shall locate project features (e.g. manholes, valves, fittings, meters, structures, casings, etc.) in three dimensions relative to the primary project control. Buried pipelines shall be located in three dimensions at each change of direction, at an interval not exceeding 100 feet along straight runs, and at an interval such that the actual location of the pipeline shall not vary by more than 1 foot at any point along the chord resulting from a straight line connecting two location points.
- 5.2 An overlay record drawing shall be produced in AutoCAD format showing the as-built locations surveyed. An electronic file and one paper copy of the record drawing survey shall be submitted to the Engineer.

END OF SECTION 01 900

## **CLEARING, GRUBBING AND STRIPPING**

- 1.1 **SCOPE OF WORK:** The work to be performed under this section includes all clearing, grubbing, and stripping necessary to properly prepare the water tank site area on which work is to be done according to plans and specifications. Scarifying of all areas specified or shown on the plans to receive backfill, pavement and other construction shall be performed in accordance with the applicable sections.
- 2.1 **MATERIALS AND EQUIPMENT:** The Contractor shall use equipment and/or materials necessary to accomplish the intent and work described herein in an efficient and complete manner.
- 3.1 **CLEARING AND GRUBBING:** Areas to be excavated or on which fills are to be placed shall be cleared of trees, down timber, brush, rubbish, debris and other objectionable material. Other areas designated to be cleared of underbrush shall be cleared of all trees under 6-in. caliper except as directed by Engineer.
- Grubbing of roots within limits of excavation and fill operation shall consist of removal of stumps and roots having diameter larger than 3 inches so that no part shall extend nearer than 18 inches of finish construction subgrade.
- In areas of partial clearing (underbrush only) remove roots, stumps and other impediments sufficiently to permit light disking of soil for lawn seeding.
- In areas to receive paving, walks or structures, all stump holes or other excavation below subgrade shall be filled with selected earth fill and compacted to 95% of maximum density at optimum moisture.
- Burning of timber and debris from clearing and grubbing operations will not be permitted on the site. All debris, brush or rubbish removed shall be disposed of off the site by the Contractor.
- 3.2 **STRIPPING:** In all areas where construction of any type is to be performed, the top 2 inches of soil shall be stripped off and salvaged. This material may be used for top soil dressing on side slopes of swales, ramps, and yard areas.
- 3.3 **REMOVING MATERIAL:** Unless otherwise specified, cleared and grubbed material becomes property of the contractor, to be removed from the work site or disposed of in manner not to damage the owner.

END OF SECTION 02-102

## STRUCTURAL EXCAVATION AND BACKFILL

### 1.0 SCOPE

This section covers excavation and backfill for foundations, vaults, buildings and other structures.

### 2.0 GENERAL

Excavation work shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards. Excavations shall provide adequate working space and clearances for the work to be performed therein and for installation and removal of concrete forms. In no case other than for drilled shaft foundations, shall excavation faces be undercut for extended footings.

Subgrade surfaces shall be clean and free of loose material of any kind when concrete is placed thereon.

**The Contractor shall arrange a subgrade inspection by the Geotechnical Engineer prior to placing any subgrade materials or constructing foundations, as outlined within the geotechnical report.**

2.1 Blasting: Blasting, where required shall be performed by experienced personnel with all required certifications. Contractor shall be responsible for any damage to nearby structures resulting from blasting.

2.2 Preservation of Trees: No trees shall be removed unless their removal is necessary for construction, and the trees are located on Owner's property. Trees left standing shall be adequately protected from permanent damage by construction operations.

### 3.0 STRUCTURAL EXCAVATION

Bottom of excavations shall be accurately finished to the grades and slopes shown on the drawings. Excavations shall extend a sufficient distance from walls and footings to allow for forms, installation of services and for inspection, except where concrete for walls and footings is authorized to be deposited directly against excavated surfaces.

3.1 Unsuitable Material: All footings shall be carried to firm undisturbed earth or sound rock unless otherwise indicated. If suitable bearing for foundations is not encountered at the depth indicated on the drawings, the Contractor will immediately notify the Engineer, and shall not proceed until further instructions are given by the Engineer.

3.2 Sheeting and Shoring: Except where banks are cut back on a stable slope, excavation for structures shall be properly and substantially sheeted, braced, and shored, as necessary, to prevent caving or sliding, to provide protection for workmen and the work, and to provide protection for existing structures and facilities. Sheeting, bracing, and shoring shall be designed and built to withstand all loads that might be caused by earth movement or pressure, and shall be rigid, maintaining shape and position under all circumstances.

3.3 Over-Excavation: Placing of concrete walls, footings, slabs on grade, and foundations on earth-fill shall not be permitted unless otherwise indicated. Excavation below the required grades shall be replaced by and at the expense of the Contractor with the concrete placed at the same time and monolithic with the concrete above.

3.4 Mechanical Excavation: The use of mechanical equipment will be permitted in locations where its operation would not cause damage to trees, buildings, culverts, or other existing property, utilities, or structures above or below ground. In all such locations, hand excavating methods shall be used.

3.5 Storage of Excavated Material: Excavated material required to be used for backfill may be deposited by the Contractor in storage piles at points convenient for rehandling the material during the backfill operations. The location of storage piles shall be subject to the approval of the Engineer. Excavated material shall not be deposited in a manner that may endanger a partly finished structure or that may be

detrimental to any completed work in any way. Excess excavated materials shall be stored on the job site as directed by the Engineer.

#### 4.0 DEWATERING

The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water entering excavations, trenches, or other parts of the work. Each excavation shall be kept dry during subgrade preparation and continually thereafter until the structure to be built, or the pipe to be installed, therein is completed to the extent that no damage from hydrostatic pressure, flotation or other cause will result.

All excavations for concrete structures or trenches which extend down to or below ground water shall be dewatered by lowering and keeping the ground water level beneath such excavations 12 inches or more below the bottom of the excavation.

Surface water shall be diverted or otherwise prevented from entering excavated areas or trenches to the greatest extent practicable without causing damage to adjacent property.

The Contractor will be held responsible for the condition of any pipe or conduit which he may use for drainage purposes, and all such pipes or conduits shall be left clean and free of sediment.

#### 5.0 STABILIZATION

Earth subgrades for concrete structures shall be firm, dense, and thoroughly compacted and consolidated, shall be free from mud and muck, and shall be sufficiently stable to remain firm and intact under the feet of the workmen. At the contractors option, unless required by the contract drawings, a layer of unreinforced concrete may be used below the structure subgrade to maintain stable subgrade.

Subgrades for concrete structures which are otherwise solid, but which become mucky on top due to construction operations, shall be reinforced with one or more layers of crushed rock or gravel. The finished elevation of stabilized subgrades for concrete structures shall not be above subgrade elevations shown on the drawings.

All stabilization work shall be performed by and at the expense of the Contractor.

#### 6.0 STRUCTURAL BACKFILL

Backfill around and outside of structures shall be deposited in layers not to exceed 8 inches in uncompacted thickness and mechanically compacted, using platform type tampers, to at least 90 percent of maximum density at optimum moisture content as determined by ASTM D698. Compaction of structural backfill by rolling will be permitted provided the desired compaction is obtained and damage to the structure is prevented. Heavy rolling compaction equipment shall not operate closer to the wall than a distance equal to 2/3 the height of the fill above the base of the structure at any elevation. Compaction of structural backfill by inundation with water will not be permitted.

Material for structural backfill shall be composed of earth or approved rock only and shall not contain any wood, grass, roots, broken concrete, trash, or debris of any kind. Aggregate backfill shall be used where called for on the plans.

No tamped, rolled or otherwise mechanically compacted backfill shall be deposited or compacted in water.

All soil backfill material shall consist of loose, damp (not wet) earth having a moisture content such that maximum density of the compacted soil will be obtained. Moisture content shall be distributed uniformly and water for correction of moisture content shall be added sufficiently in advance that proper moisture distribution and compaction will be obtained.

Particular care shall be taken to compact structural backfill which will be beneath pipes, drives, roads, parking areas, walks, curbs, gutters, or other surface construction or structures to at least 95 percent of maximum density at optimum moisture content as determined by ASTM D698. In addition, wherever a

trench passes through structure backfill, the structural backfill shall be placed and compacted to an elevation 12 inches above the top of the pipe before the trench is excavated. Compacted areas, in each case, shall be adequate to support the item to be constructed or placed thereon.

Backfilling and construction of fills and embankments during freezing weather shall not be done except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials, snow, or ice be placed in any backfill, fill or embankment.

#### 7.0 SETTLEMENT

The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within one year after final completion of the Contract under which the work was performed.

The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after notice from the Engineer or owner.

END OF SECTION 02-222

## **WASTE MATERIAL DISPOSAL**

### 1.0 SCOPE

This section covers the disposition of waste material as required by demolition, trenching and excavation operations.

### 2.0 MATERIALS

All waste materials shall be the property of the Contractor and shall be disposed of by the Contractor at no additional cost to the Owner.

### 3.0 EXECUTION

All waste materials classified as such by these specifications shall be removed completely from the project site to the satisfaction of the Engineer. Arrangements for off-site disposal are to be made and paid for by the contractor.

No waste material may be disposed of by on-site burial or burning.

END OF SECTION 02-227

## CHAIN LINK FENCES AND GATES

- 1.1 SCOPE: This section covers the furnishing and installation of chain link fence, posts, and gates plus all accessories and specials necessary for and incidental to the proper erection and installation of the fence and gates in the locations shown on the drawings.
- 1.2 SUBMITTALS: Drawings, specifications, installation schedules and other data showing complete details of the fabrication, construction, and installation of the fence and gates together with complete data covering all materials proposed for use, shall be submitted in accordance with the procedure set forth in Section 01-200.
- 1.3 GENERAL: The Contractor shall follow the drawings in all matters concerning the location and placement of fences and gates. No changes shall be made from the drawings without approval of the Engineer.

The Contractor should familiarize himself with the plans and the location at which new fence is to be constructed. All workmanship is to be first-class in every detail, and equal to the best standards of workmanship for similar types of installations.

The Contractor shall construct a seven (7) foot high chain link fence including posts, and gates as located on the plans and in accordance with this specification.

### 2.1 MATERIALS:

2.1.01 Style of Fence: The fence shall be seven (7) feet in overall height consisting of a six (6) foot-high panel of wire fabric, with three strands of barbed wire on the outside secured to 45° extension arms mounted on the top of the posts. Wire fabric shall be held in alignment by top rail and a bottom tension wire.

2.1.02 Fabric: Fabric shall be of chain link wire woven in a 1.75 inch mesh. Fabric shall be woven of #9 (.148 diameter) gage wire before galvanizing.

Top and bottom edges of fabric shall have a twisted finish. The fabric shall be heavily zinc coated, by the hot dip process after weaving, in accordance with ASTM Designation A392, Class 2.

2.1.03 Barbed Wire: Wire shall be ASTM A-121 carbon steel wire, with a minimum of 0.10 and a maximum of 0.20 silicon added. Silicon element added to assure proper adherence of the zinc coating per ASTM standards.

The wire shall stand a tensile strength test of 80,000 lbs. per square inch based on a cross section of the galvanized wire. Each line shall contain two (2) strands of 12 1/2 gauge steel wire with four point barbs spaced on three (3) inch centers. This wire shall be heavily zinc coated by the hot dip process in accordance with ASTM 392.

2.1.04 Line Posts: Line posts shall be hot dipped galvanized two (2) inch nominal diameter, schedule 40 steel pipe spaced on centers not to exceed ten (10) feet. Fabric shall be attached to line posts with #6 gauge aluminum tie wire on 14 inch centers. Posts shall be set in Class D concrete in a nine (9) inch diameter hole not less than 24 inches deep in soil. In rock, the post shall extend at least 12 inches into sound rock. Galvanizing shall be in accordance with ASTM Designation A-123.

2.1.05 Terminal Posts: End, corner and pull posts shall be hot dipped galvanized three (3) inch diameter schedule 40 pipe set in Class D mix concrete in a twelve (12) inch hole not less than 30 inches deep in soil. In rock, the post shall extend at least 12 inches into sound rock. Galvanizing shall be in accordance with ASTM Designation A-123. Fabric shall be attached to terminal posts with 1/4" x 3/4" tension bars and 3/4" wide tension bands spaced at 14" intervals.

- 2.1.06 Terminal Post Fittings: All post fittings including tension bands and brace connections shall be made of not less than 14 gauge hot-dipped galvanized steel. Bands shall be manufactured in a fashion which will not result in sharp and dangerous edges. All bands and connections shall be securely fastened with 5/16 inch x 1-1/4 inch galvanized carriage bolts and nuts. Tension bars shall be hot-dipped galvanized a minimum of 3/4 inch wide and 1/4 inch thick and sheared ends shall be given two coats of aluminum paint. No aluminum or pot metal fittings will be acceptable.
- 2.1.07 Extension Arms: Contractor shall provide a pressed steel or malleable iron base with riveted, pressed steel extensions, galvanized after assembly. The arms shall be able to withstand a weight of 200 lbs. applied at the outer strand of barbed wire. The base shall be designed in such a manner that all pipe posts will be completely covered to exclude rain water from inside the post.
- 2.1.08 Top Rails: 1-1/4" nominal diameter standard weight pipe, passing through the line post tops to form a continuous brace for each stretch of fence. Rails should be securely fastened to the terminal posts with malleable rail end cup and 7/8" beveled steel brace band. Provide outside sleeve type couplings at least seven (7) inches long. Provide every fifth coupling with a heavy spring to take up expansion and contraction of the rail.
- 2.1.09 Bottom Tension Wire: Bottom tension wire shall be #7 gauge galvanized steel spring coil tension wire, fastened to chain link fabric with #11 gauge galvanized hog rings on 24 inch centers. Tension wires shall run the entire length of the fence.
- 2.1.10 Braces: Brace material shall be 1-1/4 nominal diameter pipe, hot dipped galvanized, and shall extend from terminal post to first adjacent line post.

Braces shall be securely fastened to posts by suitable pressed steel or malleable connections, then trussed from line post back to terminal with 3/8 inch galvanized round rod with tightener. Braces shall be used at end posts, corner posts and gate posts.

- 2.1.12 Gates: Gate frames shall be fabricated of two (2) inch O.D. hot dipped galvanized pipe, wt. 2.62 lbs. per linear foot with galvanized pressed steel or malleable iron corner ells, securely riveted to the frame with four (4) rivets per corner. Internal bracing shall be 1-5/8 inch O.D. hot dipped galvanized pipe, wt. 2.27 lbs. per linear foot with 3/8 inch adjustable truss rods. The bottom hinge is to be ball and socket type, or type allowing pivot on vertical member of gate frame preventing removal of gate without disassembling of hinge, made of malleable iron; upper hinges to be 180° wrap around type, made of malleable iron, base galvanized, to allow gate to swing 180°. Gates shall be complete with padlocking device, center rests and semiautomatic catch to secure gates in open positions. End members of each gate leaf shall be complete with three (3) equally spaced strands of barbed wire attached with eye bolts.

Fabric is to match that used in the line fence and to be centered in the frame, attached by means of tension bars and bands. Top bar of gate frame shall be on level plane and at the same height as top rail.

- 2.1.13 Gate Posts: Gate posts supporting gate leaves up to and including twelve (12) feet in width shall be hot dipped galvanized four (4) inch diameter schedule 40 pipe set in Class D concrete in a twelve (12) inch hole not less than thirty-six (36) inches deep in soil. In rock, the post shall extend at least 12 inches into sound rock. Galvanizing shall be in accordance with ASTM A-123.

- 3.0 CONSTRUCTION: The fence shall be installed by skilled and experienced fence erectors, and on lines and grades indicated on the drawings. All posts shall be set plumb and in concrete footings of the size specified under corresponding post section of this specification. The concrete shall extend a minimum of three (3) inches below the bottom of the posts. Concrete shall be crowned slightly above grade and troweled to provide a smooth, neat appearance. Posts shall be uniformly spaced between corner posts. Concrete shall be Class D. The bottom of the fabric shall be held as uniformly as is practical to one (1) inch above the finish grade. The three strands of barbed wire shall be installed with maximum tension in order to prevent the smallest amount of sagging in the future.

END OF SECTION 02-711



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

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.

1.05 SUPPLEMENTAL UNIT PRICE

The CONTRACTOR shall fill in a unit price for "Reinforcing" in the blank space provided in the Bid to apply in the event of any deletions from or additions to the work. All reinforcement shown or specified shall be included in the Lump Sum bid. The unit prices shall include all elements of work specified in this section.

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

1.1 WORK INCLUDED

The work in this section shall include all formwork, shoring, bracing, anchorage, concrete reinforcement and accessories for cast-in-place concrete.

1.2 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.

1.3 RELATED WORK

- A. Section 02-222: Excavation.
- B. Section 03-100: Concrete Formwork.
- C. Section 03-210: Reinforcing Steel.

1.4 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. ANSI 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.	

1.5 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.
  - 4. For the Tank's Concrete Shaft, the Contractor shall submit a Concrete Forming Plan, including the proposed forming system and procedures. This plan shall be submitted along with the tank's shop drawings. Forming shall be in general conformance with Technical Specification 03-100 and industry standards.

- 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.

## 1.6 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-mil 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

2.1 Contractor shall supply concrete only from an approved ready mixed concrete supplier.

## 2.2 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.

## 2.3 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.

## 2.4 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 Pozzoloth 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.

## 2.5 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.

## 2.6 WATER

The mix water for concrete shall be potable.

## 2.7 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.

## 2.8 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.

## 2.9 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

#### 3.1 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.

### 3.2 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.

### 3.3 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.

### 3.4 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.

### 3.5 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.

### 3.6 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.

### 3.7 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.

### 3.8 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.

### 3.9 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 slimmed to grade and the 1-inch void filled with nonshrink epoxy grout.

END OF SECTION 03-310

## SECTION 03-320

### PRECAST STRUCTURAL CONCRETE

#### 1.0 GENERAL

##### 1.1 WORK INCLUDED

The work in this section shall include all formwork, shoring, bracing, anchorage, concrete reinforcement and accessories for precast concrete.

##### 1.2 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.

#### 2.0 PRODUCTS

2.1 Contractor shall supply precast concrete from an experienced supplier.

##### 2.2 CONCRETE MIX

Structural concrete shall be proportioned by Section 3.9 of ACI 301 to produce the following 28-day compressive strengths:

- A. Selection of Proportions for all precast concrete:
  - 1. 4,000 psi compressive for strength at 28 days.
  - 2. 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. 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.

##### 2.3 REINFORCING STEEL

A. All reinforcing steel shall conform to ASTM A-615, grade 60.

#### 3.0 EXECUTION

##### 3.1 FORMING

- A. All forming shall be with suitable wooden or metal forms to provide the specified shape and finished thickness.
- B. Precast concrete shall remain in the forms until it develops sufficient strength to safely withstand handling stresses.

##### 3.2 PLACEMENT AND FINISHING

- A. Concrete shall be placed and compacted in the forms with vibrators to remove air pockets. Reinforcing steel and embedments shall be placed in the location shown on the drawings and secured in a way to avoid displacement during concrete placement.
- B. Precast concrete shall receive a float finish. Surfaces shall be smooth and uniform.

END OF SECTION 03-320

## COMPOSITE ELEVATED WELDED STEEL WATER STORAGE TANK

### 1.0 GENERAL

#### 1.1 Scope of Work

This section describes the scope of work involved with a welded steel water storage tank supported by a reinforced concrete pedestal, commonly referred to as a composite elevated tank. The work called for in this Section shall consist of all the necessary materials, tools, equipment and all labor for the design, delivery, construction of the tank foundation, piping, tank erection and all necessary appurtenances as shown on the plans. It shall also include fabrication, field erection, testing and coating system all in conformity with detailed shop and erection drawings to be furnished by the tank manufacturer and as specified herein. All tanks supplied by this Specification must be NSF certified and meet AWWA D-107.10 and be approved by the Tennessee Department of Environment and Conservation.

#### 1.2 Qualifications of Tank Supplier

The work described in this section shall be performed by an experienced Contractor that has successfully designed, constructed and commissioned elevated tanks of the type described by this specification that are of similar capacity, all in satisfactory operation for at least five years.

All pre-qualified Bidders proposing construction of a composite elevated welded steel water storage tank must submit with their bid a listing of the ten most recent tanks of that type completed by the Bidder, and a listing of any composite elevated tanks constructed within the last 10 years that involved construction of a pumping station within the tank pedestal. Projects where the tank contractor and any proposed subcontractors worked together are of particular interest. The listing shall include a general description of the tank, including volume and height, name address and telephone number of the Owner, name of the erection contractor, and the completion date. The Bidder shall also provide similar information for all uncompleted composite elevated welded steel water storage tanks 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.

Acceptable pre-qualified manufactures for the type of tank described by this specification are as follows:

- CB&I Constructors, Inc.
- Caldwell Tanks, Inc.
- Landmark Structures, L.P.
- Phoenix Fabricators and Erectors, Inc.

Other manufactures may be pre-qualified by meeting the requirements listed in the Instructions to Bidders – Article 3. Other potential bidders 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.

Elevated tank design, concrete support structure design, and steel tank construction shall not be subcontracted. These items shall be self-performed by the Contractor. It is anticipated that deep foundation design will be subcontracted. A qualified supervisor shall be on site at all times during construction of the foundation, support structure, steel tank, piping and mechanical work, and coatings.

#### 1.3 Tank Design Parameters

The composite elevated tank shall consist of the following: deep foundation, reinforced concrete support structure and a welded steel water tank. The steel sections of the elevated tank shall be all welded construction, of the most economical design. All steel tank components encapsulating stored water shall include a 1/16 inch corrosion allowance over and above the design thickness otherwise required. All members of structural steel or of reinforced concrete shall be designed to safely withstand the maximum stresses to which they may be subjected during erection and operation. The support structure shall extend vertically from the foundation as a circular

concrete wall. A domed concrete slab shall be provided as structural support for the steel tank within the perimeter of the wall. A reinforced concrete ring beam shall be provided to connect the steel tank, concrete dome and concrete support wall. The elevated tank shall be in accordance with the shape, dimensions and details required by these specifications and drawings.

The tank shall be supported on a deep foundation to be designed by an engineer experienced in the field and licensed in the state of Tennessee. The design shall be in full conformance with these specifications, the project geotechnical report, and with sound engineering principals. The Contractor shall bear all responsibility for the design, construction and performance of the foundation system.

The tank, of the composite elevated tank type, shall have the following minimum dimensions/capacity.

Inside Diameter (feet)	56.5
Head Range (feet)	30
Height-base to overflow (feet)	230
Net Capacity (Gallons)	500,000
Overflow Elevation (feet)	801.00

#### 1.4 Submittal Drawings and Specifications

Submittals of supporting data and shop drawings shall be in accordance with the procedure set forth in Section 01-200.

Construction shall be governed by the Owner's drawings and specifications showing general dimensions and construction details, after written approval by the Engineer of detailed erection drawings prepared by the tank bidder. There shall be no deviation from the drawings and specifications, except upon written order from the Engineer. Electronic submittals are acceptable if the format and procedures are approved in advance by the Engineer.

The bidder is required to furnish, for the approval of the Engineer and at no increase in contract price, six sets of complete specifications and construction drawings for all work not shown in complete detail on the bidding drawings. A complete set of structural calculations shall be provided for the tank structure and foundation. All such submissions shall be stamped by a Professional Engineer who is <sup>(1)</sup> licensed in the State of Tennessee and <sup>(2)</sup> in responsible engineering charge of the work. The Contractor's Design Engineer shall have a minimum of five years of experience in the design of the elevated type tank described by this specification. The foundation engineer shall have at least five years of experience in the design of the type of foundation system proposed.

When approved, two sets of such prints and submittal information will be returned to the bidder marked "NO EXCEPTIONS" and these drawings will then govern for the work detailed thereon. The approval by the Engineer of the tank supplier's drawings shall be an approval relating only to their general conformity with the bidding drawings and specifications and shall not guarantee performance, detailed dimensions, or quantities, which remain the bidder's responsibility.

The Contractor shall submit certified mill test reports from an independent testing laboratory for all steel plates and principal structure members.

The tank manufacturer's and installing contractor's warranty shall be included with submittal information.

## 2.0 PRODUCTS

### 2.1 MATERIAL

- A. All welded steel water tanks and accessories shall be in conformance to the latest revisions of AWWA Standard D107 and with AWWA Standard D102. All steel tank components encapsulating stored water shall include a 1/16 inch corrosion allowance over and above the thickness otherwise required. All metal in the structure shall be manufactured, rolled or shaped in accordance with the current A-283 specifications of ASTM. The minimum thickness of any steel plate in contact with

water shall be 5/16 inch (1/4" plus 1/16" corrosion allowance). Corrosion allowance applies to the roof.

- B. Plate and Shell Materials shall be open-hearth electric-furnace, or basic oxygen-process steel conforming to ASTM Specification A36 for hot-rolled structural shapes as outlined in AWWA Standard D107, Section 2.
- C. Bolts, anchor bolts and nuts shall conform to ASTM Specification A325 as outlined in AWWA Standard D107, Section 2.
- D. Accessories shall be as shown on the drawings and conform to AWWA Standard D107 Section 7 for:
- |                     |                                 |
|---------------------|---------------------------------|
| 1. Shell Manholes   | 6. Safety Devices               |
| 2. Pipe Connections | 7. Roof Openings                |
| 3. Ladders          | 8. Vents                        |
| 4. Overflow         | 9. Ladder Platforms             |
| 5. Access Tube      | 10. (1) Man & (1) Overhead Door |
- E. All safety devices shall conform to Federal Specification RR-S-1301 and OSHA requirements.
- F. The manufacturer shall design and detail the tank and foundation in accordance with AWWA Standard D107 and submit the design drawings for the steel structure and foundation to the Engineer. All Drawings must be signed and sealed by a Professional Engineer licensed in the State of Tennessee.
- G. The following Minimum Design Standards, corresponding to the latest revision of AWWA D107, shall apply and the structure shall safely withstand the following loads acting separately or in combination:
1. Seismic Zone Characteristics (*For classification, refer to procedures defined by ASCE 7*)
  2. Specific gravity of contents = 1.0.
  3. Design Wind Speeds (*For classification, refer to procedures defined by ASCE 7*)
  4. Snow Load = 25 psf.
  5. No freeboard.
  6. Weight of the structure
  7. Weight of the water in the tank.
  8. Weight of all appurtenant loadings.
- Where more stringent design criteria are required by referenced standards or are appropriate in the judgment of the professional engineer responsible for the detailed tank design, those criteria shall be used.
- H. Foundation: shall be designed by the tank manufacturer and design drawings shall be submitted to the Owner as stated above.
1. Excavation shall be in accordance with Division 02 of these Specifications.
  2. Concrete work shall be in accordance with Division 03 of these Specifications and other requirements set forth in this Section.
  3. Piping and valves shall be in accordance with Section 11-200 of these Specifications.
  4. Tank foundation is to be designed as a pile-type deep foundation utilizing the reinforced cast-in-place drilled concrete shaft method, or the rammed aggregate pier system as provided by Geopier Foundation Company, Davidson, NC. The piling foundation system shall be designed in accordance with the loadings imposed by the supported structure in accordance with parameters set forth in the project geotechnical report. Pilings shall transfer all of the vertical load from the supported structure to sound bedrock.
- I. Concrete Support Pedestal: shall be designed by the tank manufacturer and design drawings shall be submitted to the Owner as stated above.

1. Concrete work shall be in accordance with Division 03 of the Specifications.
2. The concrete support wall shall be reinforced concrete with a minimum thickness of 12 inches exclusive of any architectural relief. Wall thickness shall be provided such that the average compressive stress due to the weight of the structure and stored water is limited to 25% of specified compressive strength, but not greater than 1000 psi. A minimum total wall reinforcement of 0.15% vertically and 0.20% horizontally shall be distributed approximately equally to each face. A minimum of 0.75% vertical reinforcement shall be provided in the top 6 ft. of the wall extending into the concrete ring beam. Minimum concrete cover for interior / exterior faces shall be 1 inch and 1-1/2 inches respectively.
3. Tank floor shall be a reinforced concrete dome not less than 8 inches thick. The average compressive stress due to the weight of the structure and stored water shall not exceed 15% of the specified compressive strength, nor greater than 600 psi. Minimum total reinforcement in orthogonal directions shall be 0.40% distributed approximately equally to each face. Additional reinforcement shall be provided for stress caused by edge restraint effects.
4. The effects of openings in the wall shall be considered in the design. Not less than 60% of the interrupted reinforcement in each direction shall be placed each side of the opening. Reinforcement shall extend past the opening not less than half the transverse opening dimension.

Openings wider than 3 ft. 6 in. shall be subjected to a rigorous analysis taking into account the stress concentrations and diminished lateral support that exist in the vicinity of such openings. Each side of the opening shall be designed as a column in accordance with ACI 318.

Openings 8 ft. 0 in. or wider used for vehicle access shall be strengthened against vehicle impact and local buckling by means of an internal buttress located on each side of the opening. The buttress shall consist of a thickened, reinforced concrete wall section that is integrally formed and placed with the support wall. The buttress section shall be not less than 3 ft. 0 in. wide and 6 in. thicker than the nominal wall dimension. If an opening is to be used as a vehicle entrance into the wall, the entrance shall be further protected from impact with steel pipe bollards on the interior and exterior.

J. Support/Tank Interface: shall be designed by the tank manufacture and design drawings shall be submitted to the Owner as stated above.

1. Interface Region: The interface region includes those portions of the concrete support structure and steel tank affected by the transfer of forces from the tank cone and the tank floor to the concrete support wall. This includes a ring beam and connection details. The Contractor shall provide evidence that a thorough review of the interface region has been performed. Finite element and finite difference analyses are the required methods for examining such local stresses in detail.

The geometry of the interface shall provide for positive drainage and not allow either condensate or precipitation to accumulate at the top of the concrete wall or ring beam.

2. Ring Beam: The ring beam shall be reinforced concrete with a nominal width and height of at least two times the support wall thickness. Minimum radial and circumferential reinforcement shall be 0.25%. For direct tension, reinforcement shall be provided such that the average service load stress in tension reinforcement due to the weight of the structure and stored water does not exceed 12,750 psi.

Ring beam design shall consider unbalanced forces from the steel tank cone and concrete dome, load conditions varying with water level, eccentricity of loads resulting from design geometry, and allowance for variations due to construction imperfection and tolerance.

K. Cone: The cone shall be designed by the tank manufacturer and design drawings shall be submitted to the Owner as stated above. For areas of the elevated tank where the water is

supported by a steel cone, the Contractor shall submit evidence that the design is based on a finite element shell analysis. The analysis shall include the effects of material and geometric non-linearity and residual stresses. The modeled imperfection shall not be less than  $0.04(RT)^{1/2}$  over a length of  $4(RT)^{1/2}$ , where R is the radius normal to the plate surface at the point of consideration, and T is the plate thickness. The design shall have a minimum factor of safety of 2.0 against buckling.

If the above analysis is not performed, the design shall be based on the use of Table 9 of AWWA D107 to determine the allowable compressive stress.

- L. The tank manufacturer may propose minor deviations in the dimensions of the tank to conform to manufacturer's standards, manufacturing and/or shipping economies, provided the alterations do not diminish the functionality of the tank. All such deviations shall be approved by the Engineer prior to fabrication and shipping of materials to the job site.
- M. The tank manufacturer shall design the tank, support and foundation in accordance with AWWA Standard D107 and submit the design drawings to the Engineer. All drawings must be signed and sealed by a Professional Engineer licensed in the State of Tennessee. The construction of the foundation and erection of the steel shall be in strict compliance with the approved design drawings and in accordance with AWWA Standard D107. A National Sanitation Foundation Certificate must be supplied with the tank shop drawings.

### 3.0 EXECUTION

Elevated tank design, concrete support structure construction, and steel tank construction shall not be subcontracted. These items shall be self-performed by the Contractor. The foundation design and construction may be subcontracted to qualified providers. A qualified supervisor directly employed by the Contractor shall be on site at all times during construction of the foundation, support structure, steel tank, piping, pumping equipment, electrical and controls.

#### 3.1 Excavation

The Contractor is responsible for all excavation for the foundation and piping. All excavated material not used for backfill or grading shall be disposed of off site by the Contractor. All excavation shall be performed as outlined in this Specification and shown on the Plans. It is required that the deep foundation excavation and installation process be inspected by a representative of the geotechnical engineer prior to pile installation. The Contractor will be responsible for providing sufficient advance notice to arrange the inspection.

#### 3.2 Foundation

Install approved erosion control systems prior to beginning any excavation. Contractor shall be responsible for obtaining any required permits or approvals from the Tennessee Department of Environment and Conservation relating to erosion and sediment control for the project, and complying with all regulations during construction.

The foundation shall be excavated to the depth and dimension shown on the approved Contractor submittals. All excavation shall be to stable material and shall be in accordance with Division 02 of this specification. Excavations shall be inspected prior to placing concrete. Reinforcing steel shall be as detailed on the approved shop drawings and shall be clean, free from rust, scale and dirt. All concrete and concrete work shall be in accordance with Division 03 and described in other sections of the Specifications and detailed on the Plans.

- A. Install deep foundation pilings in conformity with the approved shop drawings. Contractor may provide a separate concrete working slab below the proposed pile cap at his expense if he so chooses. Grade the site to prevent runoff from entering the excavation.
- B. Concrete Construction: Insure that the pile cap is in direct contact with and fully supported by the pilings. Reinforcement placed adjacent to earth shall have a minimum cover of 3 inches. Reinforcement in contact with a concrete working slab shall have a 2 in. minimum cover. All reinforcement shall be supported by metal bar supports.



The sides of foundations shall be formed using any suitable system conforming to ACI 318. Earth cuts shall not be used as forms for vertical surfaces. Forms shall be provided on top sloping surfaces steeper than 2.5 horizontal to 1 vertical. Straight form panels may be used to form circular foundation shapes. The minimum design radius shall be maintained at all sections.

- C. Finish: Formed surfaces shall have a smooth form finish when exposed and a rough form finish when not exposed. Unformed surfaces shall have a troweled finish when exposed and floated finish when not exposed.

### 3.3 Reinforced Concrete Construction

For the Tank's Concrete Shaft, the Contractor shall submit a Concrete Forming Plan, including the proposed forming system and procedures. This plan shall be submitted along with the tank's shop drawings. Forming shall be in general conformance with Technical Specification 03-100 and industry standards. Also, if concrete form depth is greater than five (5) feet, temporary bulkheads are required.

- A. Reinforcement: Fabrication, placement, development and splicing of reinforcement shall be in accordance with ACI 318 and ACI 117.
- B. Formwork: Formwork design, installation and removal shall comply with the minimum requirements of ACI 318 and ACI 117 and with the applicable requirements of ACI 347.

Forming systems shall be designed with the provision of ties and bracing such that concrete components conform to the correct dimensions, shape, alignment and elevation without leakage of mortar. Formwork systems shall be designed to safely support all loading conditions. Embedded items shall be properly positioned and secured. Form surfaces shall be cleaned of foreign materials and coated with a release agent prior to placing reinforcement.

- C. Concrete: Concrete proportioning, production, placement, quality control and curing procedures shall comply with ACI 318 and ACI 117. Concrete shall satisfy the specific structural, durability and architectural requirements of the completed components.
  - 1. Proportioning: The proportions of materials for concrete shall be established to provide adequate workability and proper consistency to permit concrete to be worked readily into the forms and around reinforcement without excessive segregation or bleeding. Unless otherwise specified, concrete without high range water reducer shall be proportioned to produce concrete slumps at the point of placement between 2 and 4 in. If high range water reducer is used, concrete slump prior to addition shall be 3 to 4 in. The slump, after addition of high range water reducer, shall be a maximum of 9 in. Air shall be entrained to provide concrete with 3.5% to 6.5% air content.
  - 2. Production: Concrete that arrives at the project with slump below that suitable for placing, may have water added within the limits of the maximum permissible water-cement ratio. Maximum slump shall not be exceeded. The water shall be incorporated by additional mixing equal to at least half of the total mixing time required. For concrete with site-administered high range water reducer, the pre-plasticized minimum slump requirement shall be attained as permissible by addition of water and mixing prior to the addition of the water reducer.
  - 3. Placement: Prior to concrete placement, all snow, ice, water or other foreign material shall be removed from the spaces that the concrete will occupy. Concrete shall be deposited in its final position in accordance with ACI 318. Drop chutes or tremies shall be used in walls and columns to prevent free-fall of the concrete over 5 ft. and to allow the concrete to be placed through the cage of reinforcing steel. These shall be moved at short intervals to prevent stacking of concrete.

All concrete shall be consolidated by vibration so that the concrete is thoroughly worked into the corners of forms and around the reinforcement and embedded items to eliminate

all air or stone pockets which may cause honeycombing, pitting, or planes of weakness. Internal vibrators shall be the largest practical size that can be used in the work and they shall be operated by competent workmen.

Concrete delivery and placement shall be coordinated so as to avoid cold joints in the concrete. The Engineer may require that concrete containing a cold joint be removed and replaced at the Contractor's expense.

- D. Weather: Concrete shall not be placed during precipitation or extreme temperatures unless protection is provided. During cold weather the recommendations of ACI 306 shall be followed. During hot weather the recommendations of ACI 305 shall be followed.
- E. Field Testing: Concrete testing and inspection shall be in accordance with Section 03 of these specifications.

### 3.4 Concrete Support Structure

- A. Concrete Construction: The concrete and formwork requirements of this section shall be strictly enforced to ensure concrete of the highest practicable structural and architectural standards. Support wall reinforcement shall be installed with plastic supports. Maximum spacing of supports for welded wire fabric shall be 5 ft. centers, horizontal and vertically.

The support pedestal shall be constructed using a form system having curved, prefabricated form segments. Concrete lifts shall be a minimum of 4 feet and a maximum of 12 feet. Form panels shall extend the full height of the concrete pour using only vertical panel joints. Form system shall incorporate a positive means of adjustment to maintain dimensional tolerances specified in 3.4C. Wall forms shall be adjusted for vertical plumb and circularity and secured using through wall form bolts prior to concrete placement. Panels shall be designed for lateral pressures associated with full height plastic concrete head, and support and bracing shall be provided for construction related impact loads and wind loads. Working platforms that allow safe access for inspection and concrete placement shall be provided. Form facing material shall be metal, or plywood faced with plastic or fiberglass.

The form system shall incorporate a uniform pattern of vertical and horizontal rustications to provide architectural relief to the exterior wall surface. All construction joints and panel joints shall be located in rustications. Vertical panel joints shall be sealed using closures which combine with the form pattern to prevent grout leakage and panel joint lines. The vertical and horizontal rustications shall be proportioned and combined to impart a symmetrical architectural pattern to the completed structure. Form ties shall be located in a uniform pattern. No architectural form treatment is required on the interior surface.

Wall forms shall not be disturbed or removed until the concrete has attained sufficient strength to prevent forming operations or environmental loads from causing surface damage or excessive stress. The minimum concrete strength shall be established by the Contractor, based on an analysis of stress at critical stages throughout the forming and concrete operations. Support wall concreting operations shall occur a maximum of once per day. Multiple form movements and concrete placements within a day are not permitted.

The formwork system for the domed structural floor shall be designed to support all construction loads. Adequate shoring and bracing shall be provided to transfer loads without appreciable movements. Form surfaces shall be steel, plastic or fiberglass coated material. Shoring and forms for the structural dome slab shall remain in place until the concrete has gained sufficient strength to carry the floor weight without damaging deflections.

Concrete surfaces shall be protected in accordance with the recommendations of ACI 306 until the component attains 35% of the specified compressive strength. At this time, protection may be removed subject to the allowable temperature differential. A reasonable temperature differential shall be defined, based on component thickness and restraint conditions.

- B. Finish: Provide a smooth form finish without rub for the interior and exterior support wall. Tie holes shall be plugged using grout on the interior and manufactured plugs on the exterior which match the color of the cured concrete as closely as possible. Provide a light sandblast to the exposed exterior concrete support wall surface. The finished exposed concrete shall be of a uniform color and surface consistency.

Provide a smooth form finish without rub for the interior dome slab. The unformed surface shall have a floated finish.

- C. Dimensional Tolerances: Support structure concrete construction shall conform to the following:

Variation in thickness:

wall -3.0% to +5.0%  
dome -6.0% to +10%

Support wall variation from plumb:

in any 5 feet of height 3/8 inch  
in any 50 feet of height 1-1/2 inch  
maximum in total height 3 inches

Support wall diameter variation 0.4%  
not to exceed 3 inches

Dome floor radius variation 1.0%

Level alignment variation:

from specified elevation 1 inch  
from horizontal plane 1/2 inch

### 3.5 Steel Tank Structure

All welding, fabrication, and erection shall be in accordance with AWWA D-107.10.

All Welds except those on roof structures must be full penetration butt welds. Lap welds will only be acceptable on roof structures provided they are seal welded on the interior of the tank. Welding must be done by operators who have been qualified within the previous year, in accordance with the requirements of the American Welding Society. Records of these qualification tests shall be available to the Engineer. Lap welds are acceptable for the tank bottom closure plates.

Weld inspection shall be in accordance with AWWA D-107.10 except that inspection of full penetration butt-welded joints shall be made by radiographic method. Inspection by removal of sectional specimens shall not be permitted. All weld testing required by AWWA D107 is to be paid for by the Contractor. If requested by the Owner, the contractor shall provide additional spot radiographic inspections to be paid for by the Owner.

In accordance with construction methods outlined in ACI 318, the tank's bottom liner plates shall be formed to match the shape of the concrete dome. The liner shall be placed directly on the concrete dome during field erection.

### 4.0 ACCESSORIES

The following accessories shall comply with the minimum requirements of the specifications and current applicable safety regulations, and the operating requirements of the structure. Also, the water storage tank, ladders, and accessories shall be painted in accordance with the latest revision of AWWA Standard D102, and with this specification.

- A. Ladder Access: Ladders shall be provided from the slab on grade inside the base of the support wall to the upper walkway platform located below the tank floor. The tank floor manhole shall be provided with ladder access from the upper platform. A ladder shall extend from the upper platform,

through the access tube interior to the roof. A ladder mounted on the access tube exterior shall be provided for access to the tank interior, extending from the roof manhole to the tank floor.

Ladders that terminate at platforms or landings shall extend a minimum of 48 in. beyond the platform elevations.

Ladders located in the concrete support structure and access tube interior shall be galvanized steel. Tank interior ladders shall be coated in accordance with the tank interior coating system.

Ladder side rails shall be a minimum 3/8 in. by 2 in. with a 16 in. clear spacing. Rungs shall be minimum 3/4 in. diameter, spaced at 12 in. centers and plug welded into holes drilled in the side rails. Tank interior ladders shall be provided with 1 in. diameter rungs and 1/2 in. x 2 in. side rails and shall be fully seal welded. The support wall ladder shall be provided with a full safety cage per OSHA requirements.

Ladder shall be secured to the adjacent structure by brackets located at intervals not exceeding 10 ft. Brackets shall be of sufficient length to provide a minimum distance of 7 in. from the center of rung to the nearest permanent object behind the ladder. Ladder brackets located on the access tube exterior shall be reinforced at the access tube shell so that potential ice damage is confined to the ladder and bracket and not the access tube shell.

- B. Safe Climbing Device: High strength aluminum, rigid rail safe climbing devices shall be provided on all ladders. Rails shall be center mounted and extend from 3 ft. above the ladder bottom to the top of the ladder section. Mounting brackets, fasteners and splice bars shall be provided as required for a rigid installation.

Three trolleys with snap hooks shall be provided that are designed to be operated with the aluminum rail. A safety body harness with front and side rings shall be supplied for each trolley.

- C. Step-Off Platforms: Step-off platforms shall be provided at intervals not to exceed 30 feet on the support wall ladder. The ladder shall be discontinuous at each step-off platform. A 4 ft. wide upper walkway platform shall be located at the top of the support wall to provide access from the support wall ladder to the roof access ladder located on the interior of the access tube. Platforms shall be provided with handrails, midrails and toe plates in accordance with OSHA requirements. Grating shall be used for the walking surface. All components shall be galvanized steel.

A fixed lanyard shall be provided at all platforms to provide fall prevention.

- D. Support Wall Doors

1. Personnel Man Door: Door frames shall be 16-gauge with concealed reinforcement at hardware locations. Expansion type anchors for existing openings shall be installed near the top, bottom and intermediate point of each jamb to rigidly secure the frame. Doors shall be 1 3/4 in. thick insulated, reinforced, full, flush type with 18-gauge face sheets and concealed reinforcement at hardware locations. All edges shall be finished flush with watertight seams. Shop applied finish for the frame and door shall be baked on rust inhibitive primer. Field finish shall be compatible with the tank exterior. Standard hardware shall be stainless steel and include three 4 1/2 in. by 4 1/2 in. hinges, industrial duty closer and lockset.

The location of one single personnel door shall be as shown on the drawings.

2. Overhead Vehicle Door: Door installation shall be on the interior face of the support wall. The door frame shall be a steel plate fabrication suitably detailed, fastened and reinforced to accept the door. Operation shall be manual with a chain hoist. The curtain shall be formed of 22-gauge steel interlocking slats with end locks and wind locks designed for a wind loading of 20 psf. Torsion springs shall be mounted on a solid torsion rod, which is attached to an exterior mounted spring tension adjustment wheel. A 24-gauge steel hood shall be provided with a weather seal to protect the assembly. Steel brackets shall be

installed to the interior face of the wall with expansion anchors which enclose and support the counterbalance assembly with sealed bearings. Steel curtain guides are mounted to the brackets. The curtain, bottom bar, brackets, guides, hood, pipe and chain shall be galvanized. Provide with locking device.

A single 12-foot x 12-foot roll-up type vehicle door shall be located as shown on the drawings.

F. Tank Openings

1. Floor: Provide a 30 in. diameter manhole through the tank floor. The manhole shall be operable from a ladder located on the upper platform and shall be designed to withstand the pressure of the tank contents without leakage. The manhole assembly shall include a stainless steel hand wheel operator and threaded components.
2. Roof: Provide two 30 in. diameter access hatches on the roof of the tank. One hatch shall allow egress from the access tube to the roof. The second hatch, located adjacent to the first, shall allow access to the interior of the tank via the ladder mounted on the exterior of the access tube. The opening shall have a minimum 4 in. curb. Provide aluminum covers with a 2 in. down turned edge, stainless steel hardware, hold open arm and a locking mechanism.

G. Access Tube: Provide a 60 in. diameter centrally located access tube through the steel tank to provide access to the tank roof from the upper walkway platform. The area under the access tube shall be provided with a galvanized drip pan to prevent condensation from dripping onto the concrete floor slab below. The drip pan shall extend 3 in. beyond the drip line of the access tube. A 3/4" in. PVC drainpipe shall be provided. The drain shall exit the support wall 6" above grade.

H. Roof Railing: A 42 in. high roof handrail shall be provided to enclose all centrally located roof accessories.

I. Rigging Access: Provide a 24 in. x 36 in. opening at the top of the support wall. This opening shall be accessible from a platform and shall provide access to the exterior rigging rail located at the tank/support wall intersection. The access opening shall be provided with a hinged stainless steel cover.

A minimum 24 in. diameter opening shall be provided on the tank roof to provide access to the tank interior rigging rails. This access opening may be combined with a pressure/vacuum relief mechanism.

J. Painters Rails: Provide permanently installed painter rails suitable for rolling trolleys at the interior of the tank at the wall/roof and access tube/roof connections. Provide an exterior painters rail at the base of the tank adjacent to the support structure.

K. Overflow & Interior Inlet and Outlet Piping

1. Buried Pipe: All buried pipe, including yard piping leading from the supply main to the tank, and underslab piping within the tank pedestal shall be pressure class 350 ductile iron pipe (DIP) with joint restraint. Buried fittings shall be mechanical joint type compact fittings with restraining glands for joint restraint. Partially or fully exposed piping shall be flanged ductile iron pipe, thickness class 53 to the point of connection to the stainless steel riser pipe.
2. Inlet and Outlet Riser Pipes: Provide separate 12-inch diameter inlet and outlet riser pipes to extend from the connection to DIP at the base of the support structure to the termination point within the tank bowl. Riser pipe material shall be Type 304L stainless steel – minimum thickness schedule 10S. Connections between carbon and stainless steel shall be made in accordance with AWS requirements for welding dissimilar metals. Stainless steel shall not be coated.

The inlet and outlet pipes shall be designed to support all related static and dynamic loads. Suitable stainless steel brackets, guides and hangers shall be provided on the support wall and tank floor at intervals not exceeding 20 feet.

The inlet and outlet pipe shall be designed and constructed to accommodate any differential movement caused by settlement and by thermal expansion and contraction over the range of extreme temperature differences expected for the support wall and pipe. The required flexibility shall be provided by a stainless steel body expansion joint located in the vertical section of pipe.

All other piping and valves shall be in accordance with Section 11-200.

3. **Overflow Pipe:** Provide an overflow pipe and broad crested weir assembly to discharge excess water from the tank in the event of overfilling. The crest of the overflow weir shall be located within the tank at the overflow elevation. It shall discharge to a 12-inch diameter pipe running vertically beside the central access tube and extending through the tank floor, at which point it shall turn 90° and run under the tank floor to the support wall. This horizontal run shall be sloped to drain. The pipe shall then turn 90° and run vertically beside the support wall to grade. Pipe, fittings, and weir material shall be Type 304L stainless steel. At grade, the overflow pipe shall connect to the ductile iron drain outlet as indicated on the Plans.

A broad crested weir shall be provided sized to accommodate a flowrate of 8,000 GPM at a head over the weir not exceeding 6 inches. A vortex prevention device shall be provided.

The overflow shall be designed to support all related static and dynamic loads. Suitable stainless steel brackets, guides and hangers shall be provided on the support wall and tank floor at intervals not exceeding 20 ft. Support hardware shall match the material of the pipe.

The overflow pipe shall be designed and constructed to accommodate any differential movement caused by settlement and by thermal expansion and contraction over the range of extreme temperature differences expected for the support wall and pipe. The required flexibility shall be provided by a stainless steel expansion joint in the vertical section of pipe.

The completed piping shall be pressure tested by installing temporary blind flanges on outlets, filling the line with water and pressure testing in accordance with Section 11-200. Pressure testing shall be successfully completed prior to filling the tank for the first time. Disinfection of the piping may be done concurrently with disinfection of the tank.

4. An 4-inch diameter stainless steel drain line shall be installed to allow drainage of water from the lowest point of the tank bowl to discharge in the tank overflow line. The tank drain shall be provided with a gate valve operable from the tank access walkway.
5. **Stainless Steel Requirements:** Stainless steel pipe and fittings shall be Type 304L stainless steel fabricated from material meeting the requirements of ASTM A-240. Fabrication, inspection, testing, marking and certification of pipe and fittings shall be in accordance with ASTM A-778 and A-774 respectively. Backing flanges shall be in accordance with ASTM A285-C drilled to ANSI B16.5 Class 150. Pipe, fittings and welds shall be cleaned and passivated.

Pipe, fittings and flange thickness shall be in accordance with the manufacturer's certified pressure rating for the applicable service pressures. For piping located within closed or valved sections, the design pressure rating shall be 250 psi minimum.

6. **Valves, Meters and Appurtenances:** Gate valves, butterfly valves, check valves, air release valves, pressure relief valves, and other valves and piping appurtenances shall meet the requirements of Section 11-200.

7. Magnetic Flow Meter: An 8-inch and 12-inch flanged magnetic flow meter shall be installed by the contractor in the tank piping; coordinate with SCADA contractor. The flow meter shall be installed as specified in the piping plan, including minimum spacing distances illustrated.

L. Ventilation

1. Tank Ventilation: A tank vent shall be provided, located centrally on the tank roof above the maximum weir crest elevation. It shall consist of stainless steel components, including a support frame, screened area and cap. The support shall be fastened to a flanged opening in the tank roof. The vent cap shall be provided with sufficient overhang to prevent the entrance of wind driven debris and precipitation. A minimum of 4 in. shall be provided between the roof surface and the vent cap.

The tank vent shall have an intake and relief capacity sized to prevent excessive pressure differential during the maximum flow rate of water, either entering or leaving the tank. The overflow pipe will not be considered as a vent. The maximum flow rate of water exiting the tank shall be calculated assuming a break in the inlet/outlet at grade when the tank is full. The vent shall be provided with an insect screen. Vent capacity shall be determined based on open area provided by the screen.

In addition to the tank vent, a pressure/vacuum relief mechanism shall be provided that will operate in the event of vent failure. The mechanism shall be designed to return automatically to its original position after operation. The pressure/vacuum relief mechanism shall be located on the tank roof above the maximum weir crest elevation, and it may be incorporated in the vent assembly.

2. Support Structure Ventilation: Ventilation within the support structure shall comply with the governing building code requirements, based on occupancy classification. As a minimum, one louvered vent shall be provided at the top of the support wall. This vent shall be accessible from the upper platform and may also be designed to provide access to the exterior rigging rails located at the tank/support wall intersection. Vents shall be accessible from the interior ladders, platforms or floors provided. Vents shall be stainless steel and provided with a removable insect screen.

- M. Interior Floors: Provide an 8 inch (minimum) thick concrete floor slab on grade in the base of the support structure. The slab shall be thickened to 12 inches at equipment supports and piping penetrations. The slab shall be supported on compacted granular fill and shall be reinforced with #4 reinforcing steel at 12 in. centers each way. Provide welded embedment rings at floor slabs and support walls for pipes that extend through the floor. Place cap strip and sealant over the expansion joint. The slab shall be sloped at 0.5% toward the embedded trench drains for drainage. Concrete work shall be in accordance with Division 03 of the Specifications.

- N. Cathodic Protection: Not required.

- O. Identification Plate: A tank identification plate shall be mounted on exterior of the support wall, adjacent to the man door. The identification plate shall contain the following information:

- |                    |  |
|--------------------|--|
| 1. Tank Contractor | 2. Owner                               |
| 3. Engineer        | 4. Contractor's project or file number |
| 5. Tank capacity   | 6. Height to overflow                  |
| 7. Date erected    |  |

P. Lighting & Wiring

Contractor shall provide a 110/240v – 200 amp service panel within the tank pedestal, and shall be responsible for bringing power from the utility service pole to the panel. The tank shall be provided with suitable LED lighting of the support column interior to allow routine inspections and

maintenance of the structure. Interior lighting shall be activated by a switch adjacent to the exterior doors at grade. The tank exterior shall be provided with a photocell operated light sufficient to provide adequate illumination of the tank door area. The fenced area surrounding the tank shall be illuminated by suitable fixtures mounted to the tank support column and controlled by a switch located inside the access mandoor. Four 110 volt, 20 amp GFCI outlets shall be provided within the column interior, 3 at grade and 1 at the upper access platform. All wiring shall be performed by a licensed electrician and shall conform to applicable codes.

5.0 PAINT & COATING SYSTEM

- A. Surface Preparation - All steel surfaces shall be prepared by as specified in the Steel Structures Painting Council Specification. Interior surfaces shall receive SSPC-SP10 "Near-White Blast Cleaning". Exterior surfaces shall receive SSPC-SP6 "Commercial Blast Cleaning". A minimum angular anchor surface profile of 1.5 mils is required.
- B. After blast cleaning, all surfaces shall be thoroughly and completely cleaned of any residue or dust before applying primer. Primer must be applied within 24 hours after blast cleaning.
- C. Interior Painting System - The tank interior shall receive a zinc/epoxy paint system equal to the following Tnemec System:

Application	Acceptable Products	DFT (mils)	Color
Primer	Tnemec Series 94-H <sub>2</sub> O Hydro-Zinc	2.5-3.5	Gray
Stripe Coat	Tnemec Series N140 Pota-Pox Plus	3-4	White
Intermediate	Tnemec Series N140-39BL Pota-Pox Plus	4-6	Delft Blue
Finish	Tnemec Series N140-15BL Pota-Pox Plus	4-6	Tank White
Total		10.5-15.5	

- D. Exterior Painting System - The tank exterior shall receive a zinc/urethane/fluoropolymer coating system. The paint manufacturer utilized shall furnish an extended 15-year warranty to the owner for color and gloss retention, adhesion and corrosion resistance for the exterior coating system in accordance with the following:

1. Check, crack, blister or delaminate from the substrate.
2. Allow the substrate to corrode in excess of 1% of the surface area being coated as measured in accordance with ASTM D 610-95 "Standard Test Method for Evaluating Degree of Rusting on Painted Surfaces" for a period of five (5) years from substantial completion date or corrode in excess of an additional 0.5% per year for balance of the warranty coverage period.
3. Change color more than 5 DE Hunter units as determined in accordance with ASTM D 2244 by comparing the affected exposed coating cleaned with water and a soft cloth with unexposed Original Project Color Standards maintained the Manufacturer and the Owner.
4. Exhibit loss of gloss in excess of 24 units as measured by a gloss meter in accordance with ASTM D523-89 with 60 degree geometry.
5. Chalk in excess of a rating of 8 as measured in accordance with ASTM D4214, Method A.

The paint manufacturer shall also furnish an extended 10-year material warranty to the owner for corrosion resistance and not to check, crack, blister or delaminate from the substrate for the interior coating system in accordance with the following:

1. Check, crack, blister or delaminate from the substrate
2. Allow the substrate to corrode in excess of 1% of the surface area being coated as measured in accordance with ASTM D 610-95 "Standard Test Method for Evaluating Degree of Rusting



on Painted Surfaces” for a period of five (5) years from substantial completion date or corrode in excess of an additional 0.5% per year for balance of the warranty coverage period.

The specified exterior systems are as follows:

Application	Acceptable Products	DFT (mils)	Color
Primer	Tnemec Series 94-H <sub>2</sub> O Hydro-Zinc	2.5-3.5	Gray
Intermediate	Tnemec Series 1075 Endura-Shield II	2-3	White
Finish*	Tnemec Series 700 Hydroflon	2-3	See Appendix
Logos	Tnemec Series 700 Hydroflon: Two	2-3	See Appendix
	Coats may be needed per logo colors		
Total		6.5-9.5	

\*Owner reserves the right to change finish color selection at the time of shop drawing review.

Concrete foundations shall be sweep blast cleaned to remove laitance and any existing coating systems.

Tank graphics shall consist of finish coat material applied at 2-3 mils dry film thickness in colors to be selected by the Owner. Two coats may be needed to achieve proper hide depending on logo colors selected. Graphics shall consist of a logo in the text style and colors as indicated in the Appendix of these contract documents. The graphic shall be located on two sides of the tank as indicated on the plans. The Contractor shall submit a layout drawing to the Engineer for approval before proceeding with the work.

- E. All coatings shall be a system and shall be thoroughly compatible each with the other. No coatings or primers of different manufacturers shall be applied one upon the other. The Contractor shall submit the proposed coatings systems to the Engineer for approval prior to application.
- F. Follow the Manufacturer’s recommendations regarding application procedures and suitable application conditions. Each application shall achieve a dry film thickness within the specified range. More than one coat per application may be required depending upon the means of application.
- G. Paint shall not be applied in rain, snow, fog, or mist, or when the steel surface temperature is less than 5°F above the dew point.
- H. Each coat of paint shall be in proper state of cure or dryness before the application of the succeeding coat. Follow manufacturers recommendations regarding minimum and maximum recoat intervals.
- I. All weld seams shall receive one brush coat of the specified primer after the sandblasting and cleaning has been completed. This brush prime coat is in addition to the specified prime coat. Remove weld spatter, burrs, or protrusions; remove and/or round sharp edges; and smooth rough welds prior to abrasive blasting. Welds should be ground to remove any irregularities and are considered ready for painting when a minimum finishing level of a D designation, as defined by NACE SP0178 latest revision, has been achieved.
- J. All coats shall be smooth, free of brush marks, streaks, laps or pile up of paints, and skipped or missed areas. If required to achieve the required dry film thicknesses, more than the stated number of coats may be necessary.
- K. All work will be subject to inspection by the Owner's representative. The Contractor shall provide suitable testing equipment including magnetic dry film thickness gauge, surface thermometer, psychrometer and holiday tester along with any necessary calibration devices. The Contractor shall conduct on-going quality control testing sufficient to assure compliance with all specified requirements. The finished coatings shall be subjected to a wet sponge holiday test to be

conducted by the Contractor and witnessed by the Engineer. The Contractor shall correct any defects found by testing.

## 6.0 FIELD TESTING

Hydrostatic Test - Following completion of erection and cleaning of the tank, and pressure testing of the piping, the structure shall be tested for liquid tightness by filling tank to its overflow elevation. Timing of the filling shall be in conformance with recommendations of the project geotechnical report. Any leaks disclosed by this test shall be corrected by the erector in accordance with the manufacturer's recommendations, and the test repeated until no leakage is observed. Water required for the initial testing shall be furnished once by the Owner at the time of tank erection completion at no charge to the tank erector. Water for subsequent tests will be paid for by the Contractor. Proper disposal of test water, including dechlorinating, shall be the responsibility of the Contractor. Labor and equipment necessary for tank testing is to be included in the price of the tank.

## 7.0 DISINFECTION

Disinfection – The completed tank shall be disinfected in accordance with AWWA 652 and in accordance with requirements of the Tennessee Department of Environment and Conservation. The contractor shall provide and pay for all labor and materials associated with disinfection, except that the Owner will provide water equal to one tank volume for disinfection purposes. Any additional water needed will be charged to the contractor. The Contractor shall fill the tank in accordance with the procedure outlined within the Geotechnical Report. Afterwards, the contractor shall deliver bacteriological testing results indicating satisfactory disinfection of the tank to the owner.

## 8.0 CERTIFICATIONS

Upon completion of the tank, the Contractor shall provide the Owner with a "Notarized Certification of Compliance" stating that the tank has been designed, fabricated, erect, inspected, tested and disinfected in accordance with all the requirements of the American Water Works Association Standard D107, and that the results of all inspections, radiographs, and tests indicate the tank is in full compliance with AWWA Standard D107.

## 9.0 WARRANTY

The Contractor shall warrant the Project for a period of at least one year from the date of completion and acceptance by the Owner. The warranty shall provide that any part of the Project shall be free from defects in material and workmanship, and that the Contractor shall correct any deficiencies in materials or workmanship that occur during the warranty period at no cost to the Owner. An end-of-warranty inspection of the work shall be conducted in accordance with AWWA D102 no earlier than one year beyond the date of final completion of the project. The Owner and Engineer shall witness the inspection. The Contractor shall be responsible for scheduling and performing the inspection. The warranty period will not expire until after the end-of-warranty inspection, and the correction of any defects found thereby.

END OF SECTION 11-102

**PIPING AND VALVES**

1.0 SCOPE OF WORK

This section describes piping, valves (if specified) and related items to be used in performance of the work.

2.0 MATERIALS

2.1 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 or Class 250 polyvinyl chloride plastic (PVC 1120) SDR-21 or SDR-17, respectively. 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 no 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>
17	250	800
21	200	630

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 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.

## 2.2 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 be approved by the National Sanitation Foundation for potable water use. All ductile iron pipe 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 a maximum internal working pressure equal to 250 psi. All areas specifically designated for restrained ductile iron pipe and fittings (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, US Pipe MJ Field Lok restrained joint gaskets, or an equivalent product. **All restraining gaskets shall be colored to distinguish themselves differently from regular black gaskets.**

## 2.3 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.

Where buried restrained fitting joints are required to resist thrust due to internal pressure, fabricated, push-on restrained joints (American Flex-Ring or equivalent product from US Pipe, McWane, etc) OR mechanical joint, restrained fittings shall be utilized at the specified locations. Restrained joints shall be rated for a working pressure of 350 psi minimum (4"-18") and 250 psi minimum (20"-64"). Restrained joints shall have a rating identical to the pressure class of the restrained joint pipe being utilized.

## 2.4 Valves

### A. 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 US Pipe Metroseal 250 or Mueller A-2360. All components shall be manufactured in the United States of America.

Valves which are to be located within a section of restrained joint pipe shall be equipped with a restraint mechanism equal to Megalug 1100 Series. The pressure rating of the restraint mechanism shall equal 350 psi. Gate valves used in exposed piping applications shall have flanged ends and shall be supplied with a standard handwheel operator.

#### B. Butterfly Valves

Buried butterfly valves shall be cast iron body and disc with stainless steel reinforced rubber disc seat. The valve shall have an offset disc and stub shaft design allowing minimal head loss through the valve, and consistent drip tight closure. The valve shall be capable of being installed and operated in either flow direction and shall be furnished with mechanical joint ends. Valves shall be suitable for installation in an approximately vertical position in buried pipelines. The disc and internal flow path shall be coated with a two-part thermosetting epoxy. The valve exterior shall be coated with asphaltic varnish. All valves shall open to the left (counter-clockwise), and shall be provided with 2" square operating nut. All underground butterfly 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 suitable for maximum working pressures up to 250 psi and shall be equal to latest specifications of AWWA C-504 in all respects. Valves shall be equal to Mueller B-5227.

Valves which are to be located within a section of restrained joint pipe shall be equipped with a restraint mechanism equal to Megalug 1100 Series. The pressure rating of the restraint mechanism shall equal 350 psi.

Manual butterfly valves used in exposed piping applications shall meet the above requirements, but shall have flanged ends and shall be supplied with a standard handwheel operator. Valves shall have a factory-applied epoxy paint coating to exposed surfaces.

Electrically actuated butterfly valves shall meet all requirements for butterfly valves in exposed service, and shall be supplied with an electrically powered motor actuator suitable for opening and closing the valve upon a remote signal from a SCADA system. Upon verification with the project's SCADA integrator, the operator shall be powered by 120VAC and shall have the following features:

1. Local-Remote Selector switch to allow the operators to control the valve locally or remotely from the SCADA System.
2. Open and closed pushbuttons to allow the operator to control the valve when selector switch is in "Local" mode.
3. Dry contact for "In Remote" indication at SCADA
4. Limit switch for "Opened" indication at SCADA
5. Limit switch for "Closed" indication at SCADA

#### C. Check Valves

Check valves 3 inch and larger shall be iron body, bronze mounted, swing type, gravity operated with bronze disc, rubber disc facing and flanged ends. All internal parts shall be removable through the top of the valve. Check valves shall be approved for potable water service and shall comply with AWWA C508. Check valves shall be equal to Mueller A-2602-06.

### 2.5 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. Contract 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, marked "Water", shall be equal to Russco B-129.

## 2.6 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.

## 2.7 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.

## 2.8 Flushing Hydrant

Large Flushing Hydrants, where specified, shall be 5¼" nominal diameter with 3-way outlet equal to Mueller A-423. All components shall be manufactured in the United States of America.

## 2.9 Casing End Seals & Spacers

Casing end seals shall be heavy-duty rubber seals as manufactured by Fernco or approved equal. Casing Spacers shall be of heavy-duty two-piece stainless steel as manufactured by Advance Products (Model CI-center restrained) or approved equal.

## 2.10 Valve Markers

Plastic blue valve markers shall be TriView marker as manufactured by Rhino with owner's name and phone number imprinted on the marker. The 54 inch TriView markers shall be anchored by a 6 foot, 1.2 lb (2" dia. max.) steel U-channel. The U-channel shall be driven into the ground 2 feet with 48 inches left above ground to allow for the TriView marker to be installed over the top and fastened at the base.

## 2.11 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.

## 2.12 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.

Precast Concrete Manholes: Precast concrete manholes shall conform to the requirements of the ASTM Serial Designation C478, with subsequent revisions. Whenever necessary, barrel sections shall be custom made with openings to meet indicated pipe alignment conditions and invert elevations. The thickness of the wall base section shall conform to details on the drawings. Standard Manhole Frame and Cover shall be plain "Sewer" No. 1110 Nashville Standard Traffic as manufactured by John Bouchard & Sons Company, or R-1668 as manufactured by Neenah Foundry Company, Neenah, Wisconsin, or equal. The lid shall be solid with no vent holes, and marked "Sewer".

#### 2.13 Miscellaneous Items

Pressure gauges shall be equal to Ashcroft 35-1009AW (reading 0 to 200 psi) and provided with a bronze isolation ball valve. Hose bibbs located in exposed piping shall be equal to Nibco 44/45U, 3/4 inch.

#### 2.14 Magnetic Master Meter

Magnetic master meters, coordinated with the SCADA telemetry integrator, are to be ABB Watermaster Electromagnetic Flow Meter or approved equal. The meter shall include a submersible rated flow head with remote mount digital display with internal powered to 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.

### 3.0 INSTALLATION

All piping, valves (if specified) and related items are to be installed as recommended by the manufacturer and as indicated on the plans.

### 4.0 TESTING & ACCEPTANCE OF PIPING

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.

#### 4.1 Pressure and Leakage Tests of Piping

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 hour, 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.

#### 4.2 Disinfection of Piping

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.

#### 4.3 Water for Testing of Piping

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.

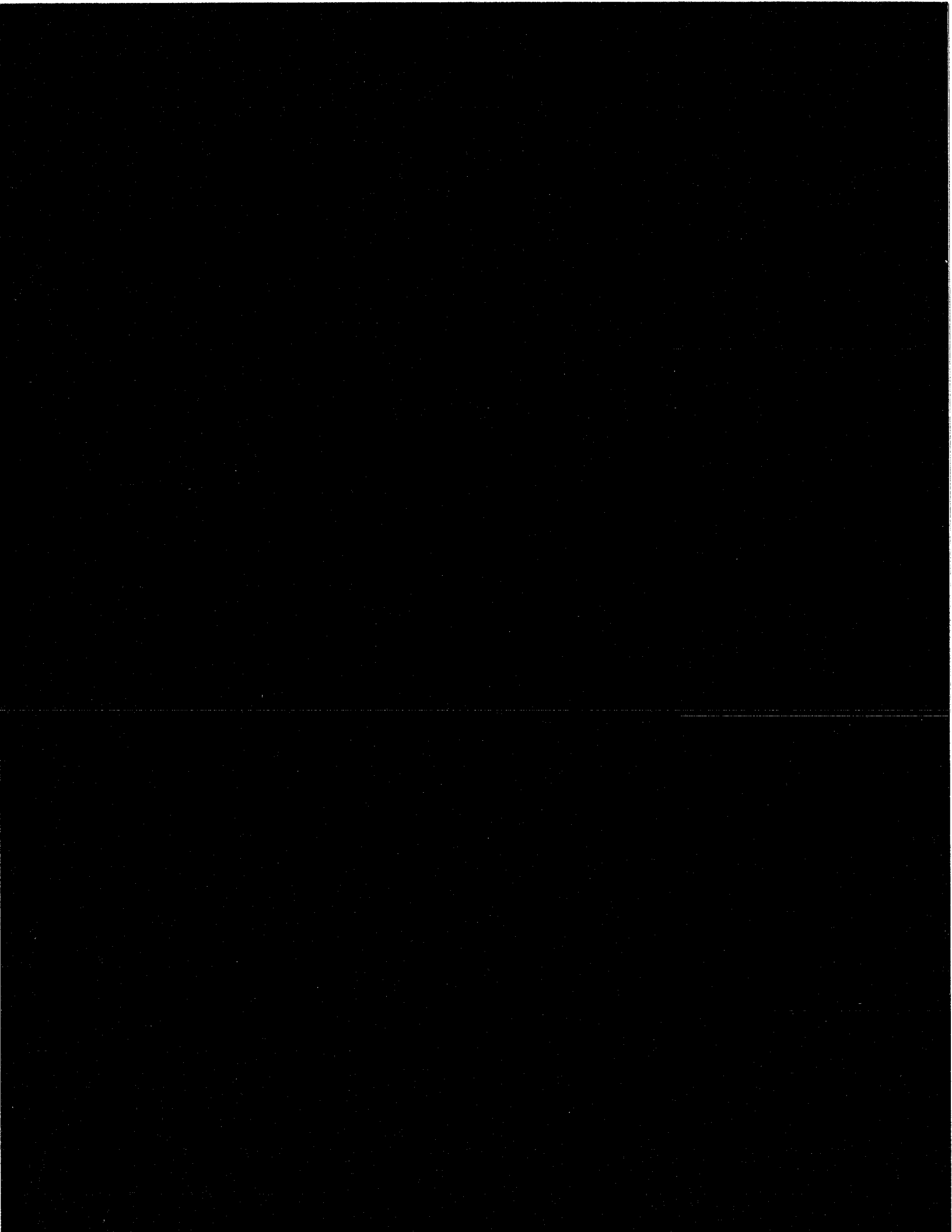
The rate at which water may be drawn from the utility providing the test water shall be set by the utility, and the Contractor will be required to limit the draw of water as dictated by the utility. During certain times of the year or certain demand conditions, water for testing may not be available. 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.

#### 4.4 Pipe 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.

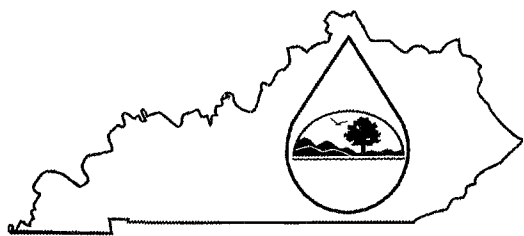
END OF SECTION 11-200





## 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

**AMERICAN IRON AND STEEL COMPLIANCE STATEMENT**

"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 statues mandating domestic preference applies an American Iron and Steel requirement to this project.

All parties are required to comply with these requirements and to ensure that all iron and steel products used on this project are produced in the United States. The term "iron and steel products" means the following products made of primarily 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."

\_\_\_\_\_  
**RD Specialist Signature**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
**Borrower Signature or Approved Representative**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
**Engineer's Signature**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
**Contractor's Signature**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

**ENGINEER'S CERTIFICATION LETTER**

DATE:

RE: APPLICANT  
PROJECT NAME  
CONTRACT NUMBER

I hereby certify that to the best of my knowledge and belief, iron and steel products referenced in the Plans, Specifications, and Bidding Documents for this project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 and any subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee. This certification is not intended to be a warranty in any way, but rather the designer's professional opinion that to the best of their knowledge, the products comply.

I hereby commit that to the best of my ability, all iron and steel products that will be referenced in the Bid Addenda, Executed contracts, and Change Orders will comply with Section 746 of the Title VII of the Consolidated Appropriations Act, 2017 and any subsequent statutes mandating domestic preference or are/will be the subject of a waiver approved by the Secretary of Agriculture or designee.

\_\_\_\_\_  
Name of Engineering Firm (Print)

\_\_\_\_\_  
By Authorized Representative (Signature)

\_\_\_\_\_  
Title

This document is to be submitted prior to Agency authorization for Advertisement for Bids.

**CONTRACTOR'S CERTIFICATION LETTER**

DATE:

RE: **APPLICANT**  
**PROJECT NAME**  
**CONTRACT NUMBER**

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

---

Name of Construction Company (Print)

---

By Authorized Representative (Signature)

---

Title

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



**MANUFACTURER'S CERTIFICATION LETTER**

Date:

Company Name:

Company Address:

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

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

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

- 1.
- 2.
- 3.

Such process for AIS took place in the following location:

---

City, State

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

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

---

Authorized Company Representative

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

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

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

**EXAMPLES OF CONSTRUCTION MATERIALS (included but not limited to)**

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

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

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

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

**INFORMATIONAL CHECKLIST FOR PROJECT SPECIFIC WAIVER REQUEST**

Please reference the specifications of the product.

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

EXAMPLE COST TABLE FOR A PROJECT COST WAIVER

AIS/Non-AIS Cost Comparison Table							
Specification	Item or Description	Quantity	Unit	Unit Price	Cost if applying AIS	Cost if a waiver to AIS is applied	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	
					\$ -	\$ -	

TOTAL COST:

\$0.00

\$0.00



## APPENDIX 3





# VECTOR ENGINEERS, INC.

GEOTECHNICAL • MATERIALS • SPECIAL INSPECTIONS

June 25, 2018

Mr. Michael W. McGhee, PE  
McGhee Engineering, Inc.  
202 S. Ewing Avenue  
Guthrie, Kentucky 42234

Subject: Report of Geotechnical Engineering Subsurface Characterization  
**Novelis 500,000 Gallon Elevated Water Tank**  
Guthrie, Kentucky  
Vector Project 18-3392

Dear Mr. McGhee,

VECTOR Engineers, Inc., has completed the geotechnical engineering subsurface characterization for the proposed elevated tank. This exploration was in general accordance with our proposal No. 18-448, dated April 30, 2018, which was accepted by Mr. Mike McGhee with McGhee Engineering. The purpose of this exploration was to obtain subsurface data to develop site preparation and foundation recommendations for the proposed elevated tank. This report describes our understanding of the project, summarizes our findings, discusses the geotechnical concerns, and contains our engineering recommendations.

## PROJECT INFORMATION

Project information was provided to us through conversations with Mr. McGhee. We understand that Novelis plans to construct a 500,000-gallon composite elevated water storage tank. We do not have specific information regarding the tank. However, we understand that the tank will have an overflow height of 231 feet from ground level. Based on our experience on numerous other tanks, we are assuming that the dead load and the live load combined will be on the order of 6,500 to 7,000 kips. We are anticipating that the elevated tank will have settlement tolerances of less than ½-inch differential and 1-inch total. We understand that the tank will have a concrete slab-on-grade floor within the pedestal.

## FINDINGS

As part of our geotechnical site characterization, we observed site conditions, reviewed regional geological maps, performed a subsurface exploration, and observed the groundwater conditions. The following sections report our findings.

### Site Surface Conditions

Mr. Matt Slusser, PE, with Vector Engineers, initially visited the site on May 23, 2018 and revisited the site on May 30 and 31, 2018, to observe surface conditions to aid in interpreting the subsurface data and to detect conditions which could affect the project. The following is a general description of the site.

The Novelis site is located off U.S. Highway 79 northeast of Guthrie, Kentucky. The site is bordered to the southwest by a railroad, to the southeast by U.S. Highway 79, and on the remaining sides by farmland. The tank site is located near the southern corner of the site. At the time of our site visit, the tank site had been covered with about 7 to 8 feet of soil embankment removed from the building pad of the Novelis facility, which is currently under construction. We understand that this soil will be removed prior to construction of the tank. Therefore, it was not possible to observe the original site surface soils. The area was generally bare soil at the surface with ruts from construction traffic.



Figure 1: The tower location was located higher than the surrounding area on a soil stockpile. The stockpile will be removed prior to construction of the tank.

We understand based on the topographic survey information provided by McGhee Engineering that the original grades of the tank site sloped downhill on all sides, with the tank being near the crest of a gently rolling hill. Therefore, drainage should be good once the site is returned to original grades. However, the majority of the Novelis site has been graded relatively flat.

### **Area Geology**

The Geologic Map of the Guthrie Quadrangle, Kentucky, (GQ-539, 1966), published by the U.S. Geological Survey indicates the site is underlain by Ste. Genevieve Limestone of the Upper Mississippian age. This formation consists of very light gray to brownish-gray, medium to coarse grained limestone with beds of fine to very fine-grained limestone. Parts of the limestone contain light to dark gray chert that weathers to a chalky white with reddish brown stains. Our borings encountered rock specimens that generally agree with the published geologic information.

We reviewed the Kentucky Geological Survey (KGS) for Karst potential and for closed depressions. Numerous closed depressions (i.e. – sinkholes) were mapped at distances less than 1/2 mile from the tank site, including some located on the Novelis project site. We did not observe any obvious surface indications of sinkhole activity at the immediate tank site; however, the site was covered in 7 to 8 feet of temporary fill and surrounding areas have been recently graded, thus potentially covering signs of incipient sinkhole activity. The KGS mapping of the area indicates a very high potential for solutioning of the rock in the project area.

Sinkholes are typical of Karst regions and occur due to solutioning activity of the underlying limestone formation which is generally soluble in slightly acidic groundwater. Rainfall infiltration penetrates the surface vegetation and moves through fractures in the limestone. As water penetrates the rock joints, solutioning of the bedrock occurs over long periods of time and cavities in the rock develop. As the cavity continues to grow, the cavity roof arch can no longer support the soil overburden load, the overlying soil begins to sag, and then collapses thus creating closed depressions (bowl-shaped areas).

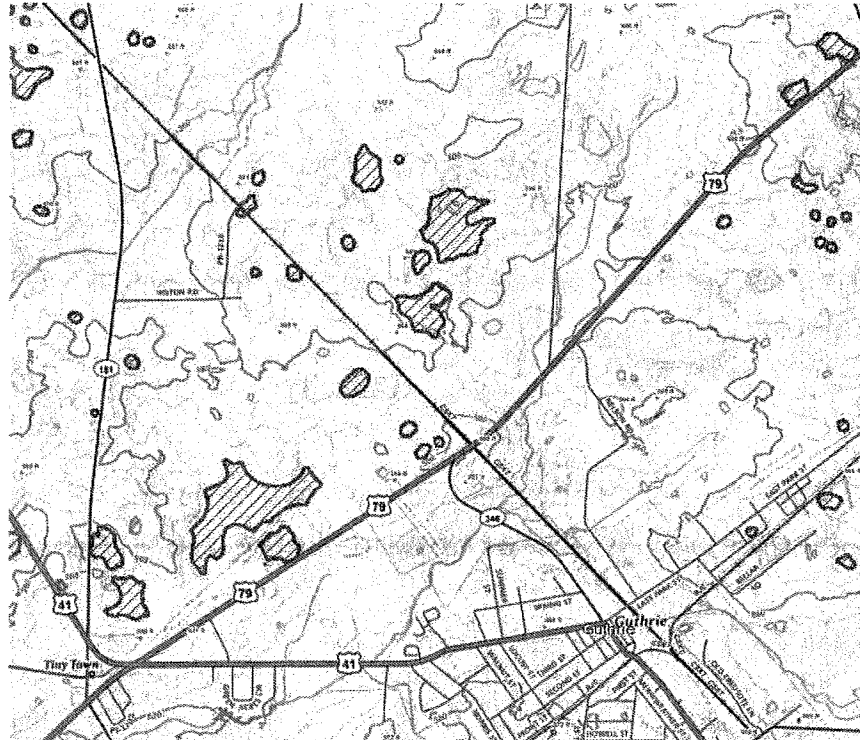


Figure 2: The red outlines are KGS mapped sinkholes near the tank site.

### **Subsurface Exploration**

After researching the readily available published geological information, a preliminary subsurface profile is formulated. The soil boring program is a means to substantiate the assumptions made in our preliminary profile and assist us in developing a representative subsurface profile of the site. The subsurface conditions will vary between borings thereby making the development of a representative and reliable profile dependent upon the number of borings or data points obtained during the field operations. The following discusses our interpretation of the subsurface profile on the site based on the published information and the results of our borings. The individual Boring Logs attached to this report will have specific details at the location of the boring.

### **Field Exploration and Laboratory Testing Methods**

We drilled five borings to explore the subsurface conditions across the site. Mr. Matt Slusser, PE, directed drilling operations. The boring locations were staked by McGhee Engineering prior to our site visit. Boring surface elevations both before and

after the fill stockpile was placed at the tank site were surveyed by McGhee Engineering. The stratification lines shown on the Boring Logs represent the approximate boundaries between soil or rock types. The transitions may be more gradual than shown.

We used a track-mounted Diedrich D-50 geotechnical drill rig to explore the subsurface conditions. We obtained soil samples using a split-barrel sampler driven by an automatic hammer assembly in general accordance with ASTM D1586. The soil samples were sealed in the field and returned to our laboratory where Mr. Slusser assigned the applicable laboratory tests. The soil samples were visually classified, by Mr. Slusser, the project geotechnical engineer, according to the Unified Soil Classification System (USCS, ASTM D2487). We conducted moisture contents on several soil samples. Atterberg limits tests were performed on selected soil samples to determine the engineering properties of the soil. Unconfined compression tests on selected samples of rock specimens were performed to estimate the rock strength. The laboratory data and descriptions of these tests are included in the attachments.

The procedures used by Vector Engineers for field and laboratory sampling and testing are in general accordance with ASTM procedures and established engineering practice. A brief summary of the field and laboratory procedures is included in the attachments.

### Subsurface Conditions

Beneath about 7 to 8 feet of temporary stockpiled fill soil at the surface, reddish-brown lean clay was encountered extending to depths of about 13 to 18 feet. The lean clay generally increased in plasticity with depth. Standard penetration (SPT) N-values within the lean clay ranged from 6 to 16 blows per foot (bpf) with a median value of 11 bpf. The penetration values indicate generally firm to stiff soil consistency.

Below about 13 to 18 feet, the reddish-brown clay transitioned to a high plasticity, fat clay that extended to refusal. The fat clay contained chert fragments, with the chert content generally increasing with depth. SPT N-values within the fat clay ranged from 7 to 22 bpf with a median value of 13 bpf, indicating generally stiff to very stiff soil consistency. Soil plasticity tests (Atterberg limits) performed on two soil samples from Boring B-1 indicated liquid limits ranging from 52 to 60 with plasticity indexes

ranging from 31 to 37. Using these laboratory tests and the USCS, we classified soil samples as "CH" (a moderate to high plasticity clay).

The borings encountered auger refusal at depths ranging from about 48 to 50 feet. After encountering limestone in Borings B-3 and B-5, rock coring was started and continued for 15 feet. The rock cores consisted of thick layers of moderately hard to hard, gray limestone. The percentage of rock recoveries generally varied from about 97 to 100 percent with rock quality designations (RQD) of 90 to 100 percent, representing excellent quality rock. However, during the second five-foot core run in Boring B-5 (55.3 to 60.3 feet in depth), a void of about 2 feet in thickness was encountered. The rock recovered in the core run appeared to good quality; However, when including the void, the recovery of 57% and RQD of 50 percent represent poor to fair quality rock.

### **Groundwater**

Groundwater was encountered in Boring B-4 at a depth of about 43½ feet on the drilling tools. Groundwater was not encountered in our other borings at the completion of soil augering. Since rock coring uses water to cool the coring bit during drilling, an accurate groundwater level reading cannot be obtained after coring. Because groundwater was only encountered in one boring, we believe this water was perched above the bedrock and was not representative of the groundwater table at this site.

Groundwater levels fluctuate with seasonal and cyclical climatic variations in precipitation and may be either higher or lower at other times. Typically, water conditions affecting construction projects in the site area are related to trapped or perched water which occurs in irregular, discontinuous locations within the soil overburden, or near the soil/rock interface. When these water-bearing strata are exposed in excavations, such as cut slopes, utility or footing trenches, they can produce widely varying seepage durations and rates depending on recent rainfall activity and other site specific characteristics of the area. These perched water sources are often not linked to the more continuous relatively stable groundwater table that typically occurs at greater depths. In Karst areas, the static groundwater table is typically well below the bedrock surface.

## **DISCUSSION**

Based on the results of our borings and our understanding of the proposed project, we believe the project site is suitable for the proposed building and new pavements. However, the Karst conditions at this site represent a significant geotechnical challenge and financial impact to the proposed development. The following subsections provide additional details and discuss other geotechnical concerns.

### **Karst Topography**

All areas underlain by potentially soluble rock (i.e. – limestone or dolomite) are at some risk due to solution and sinkhole activity. As previously stated, the Kentucky Geological Survey rated the site with a very high risk of sinkhole development based on the underlying rock formation. Several closed depressions are indicated around the proposed tank site. A large void (about 2 feet in thickness) was encountered in the bedrock in one of our rock core borings. Therefore, we believe the risk of further sinkhole development at this site is high. The use of bedrock-bearing foundations will reduce the risk of losing foundation support due to soil raveling.

Solution features which are in the process of forming a soil drop-out or sinkhole represent a risk to the project because they are difficult to detect. If these features remain undetected or untreated, they may develop deposits of soft soils over time which could experience settlement under the loading of the new tank. Sinkholes encountered during site development can be repaired; however, the cost of these repairs cannot be accurately estimated before construction. When sinkholes are encountered, the common practice is to excavate all of the soil from within the solution feature down to hard bedrock. Several methods are available to repair the solution feature at this point. The two most common methods of remediation are a concrete plug or an inverted filter. An engineering evaluation of each encountered sinkhole should be performed to assess the proper remediation procedures.

### Directing Drainage Away from Sinkholes

Water flowing through the soil mass may develop or trigger future sinkhole development. In addition to surface water from rainfall, water from pipes and other

man-made sources can accelerate the rate of solution activity if directed into sinkholes. The site should be graded to direct water away from the tank. The outlet point for surface water should be in an area away from any adjacent sinkholes. Precautions should be taken to prevent subgrade pipes from leaking. These precautions might include bedding the pipes in sand, placing pipes in concrete, or encasing the primary pipe within a secondary pipe.

### **High Plasticity Clays**

High plasticity clay soil (classified as CH according to the USCS) was encountered in our borings. Based on empirical correlations with soil plasticity index, these plastic clays found on-site are moderately susceptible to volume change with variations in moisture content. Should these volume changes occur within the building or paved areas, the resulting deformations can cause undesirable cracking in the structure or pavements. Building and site drainage should be designed to minimize exposure of these soils to moisture fluctuations, especially near building foundations. Construction planning should minimize exposure of these soils to excessive wetting or drying. These materials are suitable for use as fill provided the soil moisture contents are stringently controlled in the field.

The on-site soils are sensitive to changes in moisture content. These soils will pump and rut during wet conditions. If grading operations are performed during periods of wet weather, these materials will not perform satisfactorily during proofrolling. If soft or wet soils are encountered during the proofrolling observations, we recommend that the area be undercut to firm native soils or stabilized in-place. An alternative to wasting the wet clay soils is to temporarily stockpile this material for aeration and proper placement during drier conditions.

### **Foundation Options**

We have considered both shallow and deep foundation options for support of this elevated tank. Typically, shallow foundations for these types of tanks consist of a ring wall that extends from the tower base down to a large concrete mat or spread footing supported on either bedrock or soil. Due to the high risk of sinkhole activity on this site, we would recommend supporting the mat or spread footing on bedrock. However,



considering the large depth to bedrock (about 40 to 42 feet from the original ground surface), we do not believe it will be economically feasible to support the mat or spread footing foundation on bedrock. We believe that the risk of excessive settlement of a soil supported foundation is significant for this site. Therefore, we recommend supporting the proposed tank on drilled shafts bearing on competent bedrock.

Typically, the drilled shafts are installed to within a few feet of the ground surface and a footing and stemwall is constructed above the drilled shafts to transfer the tank loading to the shafts. Although the bedrock at this site was generally of excellent quality based on our rock coring data, one of our cores did encounter a large void. Therefore, a contingency for undercutting and/or grouting of voids should be including in construction budgeting.

### **LIMITATIONS OF RECOMMENDATIONS**

This report has been prepared for the exclusive use of McGhee Engineering for specific application to the project site. Our recommendations have been prepared using generally accepted standards of geotechnical engineering practice in the Commonwealth of Kentucky. No other warranty is expressed or implied. This company is not responsible for the conclusions, opinions, or recommendations of others based on these data. Additionally, our conclusions and recommendations are based on the information provided to us, the data obtained from our subsurface exploration, and our experience. They do not reflect variations in the subsurface conditions which are likely to exist between borings and in unexplored areas of the site. These variations result from the geologic variability of the subsurface conditions. If conditions are different than those encountered in our exploration, it will be necessary for us to re-evaluate our conclusions and recommendations based upon on-site observation of the conditions. For more information on the use and limitations of this report, please read the GBA document included in the attachments.

If the overall design or location of the project is changed, the recommendations contained in this report must not be considered valid unless our firm reviews the changes and our recommendations are modified. When the design is finalized, we should be given the opportunity to provide the additional service of reviewing the grading

plan and applicable portions of the project specifications. This review will allow us to check whether these documents are consistent with the intent of our recommendations.

We may recommend that a supplementary exploration be performed when significant design changes such as movement of the project are incorporated into the final design after the geotechnical exploration has been completed. This supplementary exploration may include obtaining additional soil data along the new alignment to provide specific recommendations.

## **RECOMMENDATIONS**

### **Earthwork**

A grading plan was not supplied to us at the time of this report preparation. We understand that the fill stockpile will be removed prior to construction. Therefore, based on the original grade elevations provided by McGhee Engineering, we have assumed that less than 2 to 3 feet of cut or fill will be required to reach a level grade.

### Stripping

Topsoil and debris should be stripped to prepare the site for construction. The stripping should extend 5 feet outside of the tank area. Abandoned buried utilities and utility trench backfill should also be removed, if present. A Vector representative should observe site stripping as previously unexplored or unknown conditions could become evident during these operations. Vector should be contacted if unusual or unexpected subsurface conditions (i.e. – such as buried underground structures) are encountered during stripping operations.

### Subgrade Evaluation (Proofrolling)

The subgrade soils beneath the floor slab inside the tank pedestal should be evaluated by a geotechnical engineer by observing proofrolling. Proofrolling consists of applying repeated passes (2 to 3 passes) on the subgrade with a fully loaded triaxle dump truck or similar rubber tired vehicle. Any materials judged to deflect excessively

under the wheel loads should be undercut to more stable soils or stabilized in-place before placing the slab.

### Structural Fill Placement

After subgrade evaluation, fill areas within the tank area, if any, may be brought to the planned subgrade elevations with structural fill. Ideally, the structural fill is defined as inorganic natural soil with maximum particle sizes of 3 inches and a maximum dry density of at least 95 pounds per cubic foot (pcf) when tested by the standard Proctor method (ASTM D698). Limit the fill materials to a Plasticity Index less than 40. The on-site soils are suitable for use as fill provided the moisture contents are stringently controlled.

Structural fill should be placed in relatively thin (6 to 8-inch) layers and compacted to at least 95 percent of the soil's maximum dry density as determined by the standard Proctor compaction test. Additionally, the moisture content of the fill material should be maintained within -1 to +3 percent of its standard Proctor optimum moisture content depending upon the results of the Proctor tests. We anticipate any new fill will come from the on-site soil stockpile. The fill source should be tested and approved by a geotechnical engineer before it is allowed to be used as fill.

### Field Density Testing

In-place density testing must be performed on any compacted fill as a check that the previously recommended compaction criteria (density and moisture) have been achieved. This allows our project engineer to monitor the quality of the fill construction and verify that the design criteria are being achieved in the field. The performance of the slab-on-grade floor inside the pedestal will depend directly on the quality of the fill construction. The testing frequency for density tests performed on a full-time basis can be determined by our personnel based on the area to be tested, the grading equipment used, and construction schedule. Tests should be performed at vertical intervals of at least one-foot as the fill is being placed. We recommend that an engineering technician working under the direction of our project geotechnical engineer perform the density tests.

## **Drilled Shaft Foundations**

As previously stated, we recommend supporting the proposed water storage tank using drilled shafts bearing in competent limestone bedrock. The maximum allowable bearing capacity of the limestone is based on the RQD of the recovered core specimens and the unconfined compressive strength tests. We recommend using a maximum allowable bearing capacity of 100 kips per square foot to design the drilled shaft foundations if they are to bear directly on the competent limestone bedrock with a minimum 1-foot rock socket. The majority of the bedrock cored in our borings was competent. However, a large void was encountered in boring B-5 about 5 feet below the bedrock surface. We anticipate that additional voids will be encountered that may result in varying bearing depths. Therefore, we recommend including a contingency for bedrock removal and/or grouting of voids. The bearing material should be observed and approved by a geotechnical engineer.

### Construction Considerations

The following construction considerations are recommended for drilled pier construction:

- Clean the foundation bearing area so it is nearly level or suitably benched and is free of ponded water or loose material.
- Provide a minimum drilled pier diameter of 30 inches to reasonably enter the excavation for cleaning, bottom preparation and inspection.
- Groundwater was encountered in one of our borings during drilling operations. If the foundation excavation takes place during wet weather it may be necessary to pump water from the excavations. Less than 2 inches of water should be maintained during cleaning and inspection. If pumps are necessary, they should be pulled and concreting commenced immediately.
- Specify concrete slumps ranging from 4 to 7 inches for the drilled pier construction. These slumps are recommended to fill irregularities along the sides and bottom of the drilled hole, displace water as it is placed, and permit placement of reinforcing cages into the fluid concrete.
- Retain the geotechnical engineer to observe the foundation excavations after the bottom is leveled, cleaned of any mud or extraneous material, and dewatered.

Our experience indicates general drilled shaft construction, and delineation of "rock" in the excavation, is greatly facilitated if suitable drilling equipment is used. We recommend the use of a drill capable of producing at least 600,000 foot-pounds of torque and 30,000 pounds of downward force. Higher capacity drills may result in excessive rock excavation. Additionally, we recommend that rock be defined as material that cannot be penetrated by a heavy-duty earth auger with hardened teeth at a rate in excess of 6 inches per minute. However, once drilling is started, the actual bearing depth should be approved by the geotechnical engineer by observation of the bottom of the drilled shaft excavation and probing the test hole or by coring the bedrock at each shaft location prior to construction of the shaft.

#### Quality Control Requirements

We recommend that the foundation construction be observed by a representative of Vector Engineers, Inc. The observation should address the following items:

- Top location within tolerances
- Correct plan dimensions
- Plumbness within tolerances
- Materials excavated agree with borings
- Statement of bottom cleanliness
- Construction procedure

At least one 2-inch diameter probe hole must be drilled at least 5 feet into the rock-bearing material. The probe holes should be placed in every drilled shaft. These probe holes are usually drilled with a pneumatic percussion drill. The geotechnical technician should check the probe hole using a hooked-end steel feeler rod to assess the rock continuity. If this check indicates a discontinuous or compressible seam in the rock, the drilled hole should be excavated deeper. Additional probe holes may be required by the geotechnical engineer to check foundations supported on marginal material. Significant deviations from the specified or anticipated conditions should be reported to the owner's representative and to the foundation designer. Prior to installation, we will develop detailed evaluation criteria. The criteria must be designed for the site-specific conditions and may be adjusted as the project progresses.

As an alternative to the probe hole, the design team may want to consider coring the bedrock at each shaft location prior to installation of the shafts. Coring of bedrock at each shaft would extend to a depth determined by the geotechnical engineer (but no less than 10 feet) depending on the encountered conditions. There are several advantages to this method versus probing of the bedrock.

- Locating of voids at each shaft location prior to construction of the shafts, which can help with cost estimation.
- Reducing the need of personnel at the bottom of the drilled shaft.
- Locating voids that may be just beyond the extent of the probe hole.

Although Vector has already cored the bedrock at two locations, we recommend evaluating the bedrock at each shaft location due to the high-Karst nature of the geology in the area.

### **Floor Slab**

We anticipate that either existing soil or structural fill will be supporting the slab-on-grade floor slab within the pedestal. We recommend a k-value (modulus of subgrade reaction) of 75 pounds per cubic inch (pci) be used in determining the slab thickness.

We recommend control joints be placed in the slab along the exterior pedestal walls so these elements may move independently. We recommend a 6-inch thick (minimum) layer of compacted, well-graded crushed stone directly beneath the slab to enhance support and provide a working base for construction of the floor slab. The crushed stone should be moist, but not wet, as the concrete is placed to reduce curling of the slab as the concrete cures.

Between completion of grading and slab construction, floor slab subgrades are often disturbed by weather, footing and utility line installation, and other construction activities. For this reason, the subgrade should be evaluated by a geotechnical engineer immediately prior to constructing the slab. During this evaluation, the subgrade should be proof rolled with relatively heavy rubber-tired equipment. Areas judged by the geotechnical engineer to perform unacceptably under the moving load should be

undercut and replaced with dense graded crushed stone compacted to at least 95 percent of its standard Proctor maximum dry density.

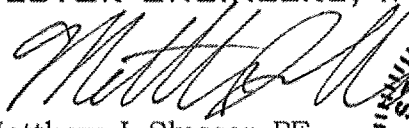
### **Seismic Site Classification**

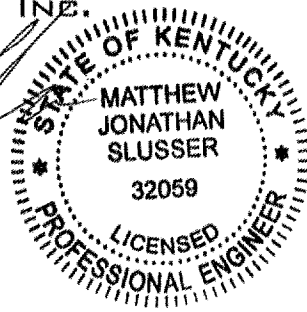
The current seismic design procedures outlined in the NEHRP (National Earthquake Hazard Reduction Program) guidelines mandate structural design loads be based on the seismic accelerations of the site. Based on the results of our exploration and the geology of the area, we assigned a site seismic classification of "D". Using the U.S. Seismic "Design Maps" Web Application from the USGS website and the site coordinates, the seismic design values from the 2010 ASCE-7 Standard were determined and are listed in the attachment.

### Valediction

Vector Engineers, Inc. appreciates the opportunity to provide you with these geotechnical services. Should you have questions or require any additional information, please contact us.

Respectfully submitted,  
VECTOR ENGINEERS, INC.

  
Matthew J. Slusser, PE  
Senior Engineer  
Licensed Kentucky 32059



  
Wayne A. Karem, PhD, PE, PG  
Principal

#### Attachments:

- GBA - Important Information about This Geotechnical-Engineering Report
- Site Location Map
- Aerial Photograph
- Boring Location Plan
- Boring Logs
- Field Testing Procedures
- Laboratory Data Summary
- Atterberg Limits
- Laboratory Testing Procedures
- Seismic Design Map



## Important Information about This

# Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, clients can benefit from a lowered exposure to the subsurface problems that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed below, contact your GBA-member geotechnical engineer. Active involvement in the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

### Geotechnical-Engineering Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. *Those who rely on a geotechnical-engineering report prepared for a different client can be seriously misled.* No one except authorized client representatives should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one – not even you – should apply this report for any purpose or project except the one originally contemplated.*

### Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read it *in its entirety*. Do not rely on an executive summary. Do not read selected elements only. *Read this report in full.*

### You Need to Inform Your Geotechnical Engineer about Change

Your geotechnical engineer considered unique, project-specific factors when designing the study behind this report and developing the confirmation-dependent recommendations the report conveys. A few typical factors include:

- the client's goals, objectives, budget, schedule, and risk-management preferences;
- the general nature of the structure involved, its size, configuration, and performance criteria;
- the structure's location and orientation on the site; and
- other planned or existing site improvements, such as retaining walls, access roads, parking lots, and underground utilities.

Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.*

### This Report May Not Be Reliable

*Do not rely on this report* if your geotechnical engineer prepared it:

- for a different client;
- for a different project;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, that it could be unwise to rely on a geotechnical-engineering report whose reliability may have been affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If your geotechnical engineer has not indicated an "apply-by" date on the report, ask what it should be,* and, in general, *if you are the least bit uncertain about the continued reliability of this report, contact your geotechnical engineer before applying it.* A minor amount of additional testing or analysis – if any is required at all – could prevent major problems.

### Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface through various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing were performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgment to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team from project start to project finish, so the individual can provide informed guidance quickly, whenever needed.

### **This Report's Recommendations Are Confirmation-Dependent**

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, *they are not final*, because the geotechnical engineer who developed them relied heavily on judgment and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* revealed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

### **This Report Could Be Misinterpreted**

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a full-time member of the design team, to:

- confer with other design-team members,
- help develop specifications,
- review pertinent elements of other design professionals' plans and specifications, and
- be on hand quickly whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction observation.

### **Give Constructors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for informational purposes only*. To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report, but they may rely on the factual data relative to the specific times, locations, and depths/elevations referenced. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may

perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

### **Read Responsibility Provisions Closely**

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely. Ask questions.* Your geotechnical engineer should respond fully and frankly.

### **Geoenvironmental Concerns Are Not Covered**

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. As a general rule, *do not rely on an environmental report prepared for a different client, site, or project, or that is more than six months old.*

### **Obtain Professional Assistance to Deal with Moisture Infiltration and Mold**

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, none of the engineer's services were designed, conducted, or intended to prevent uncontrolled migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



Telephone: 301/565-2733

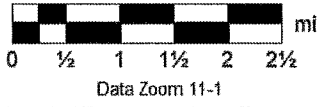
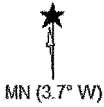
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Approximate Site Location

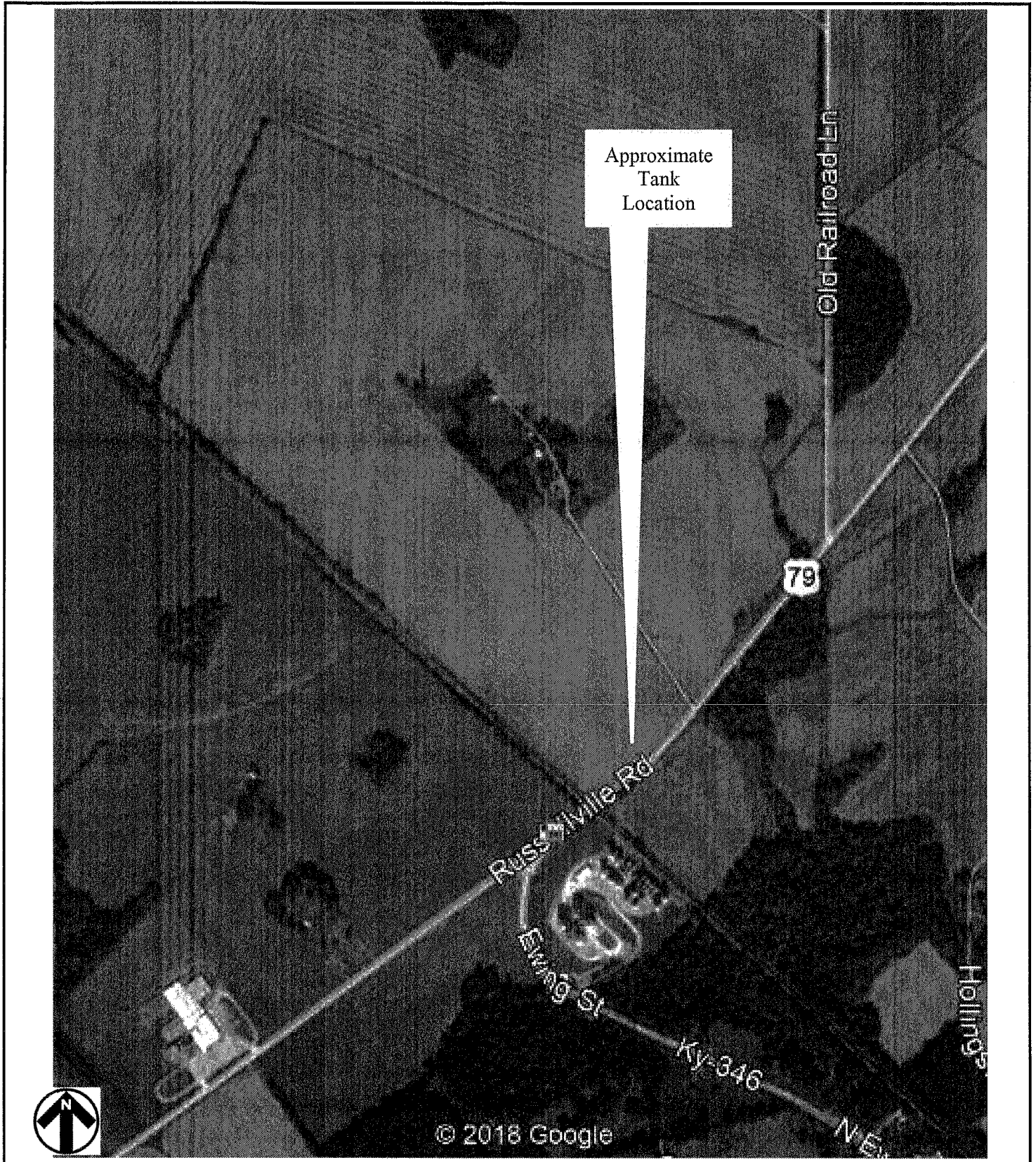
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**Site Location Map**  
**Novelis 500,000 Gallon**  
**Elevated Water Tank**  
 Guthrie, Kentucky  
 Vector Project 18-3392



Approximate  
Tank  
Location

79

Old Railroad Ln

Russville Rd

Ewing St

Ky-346

Hollings

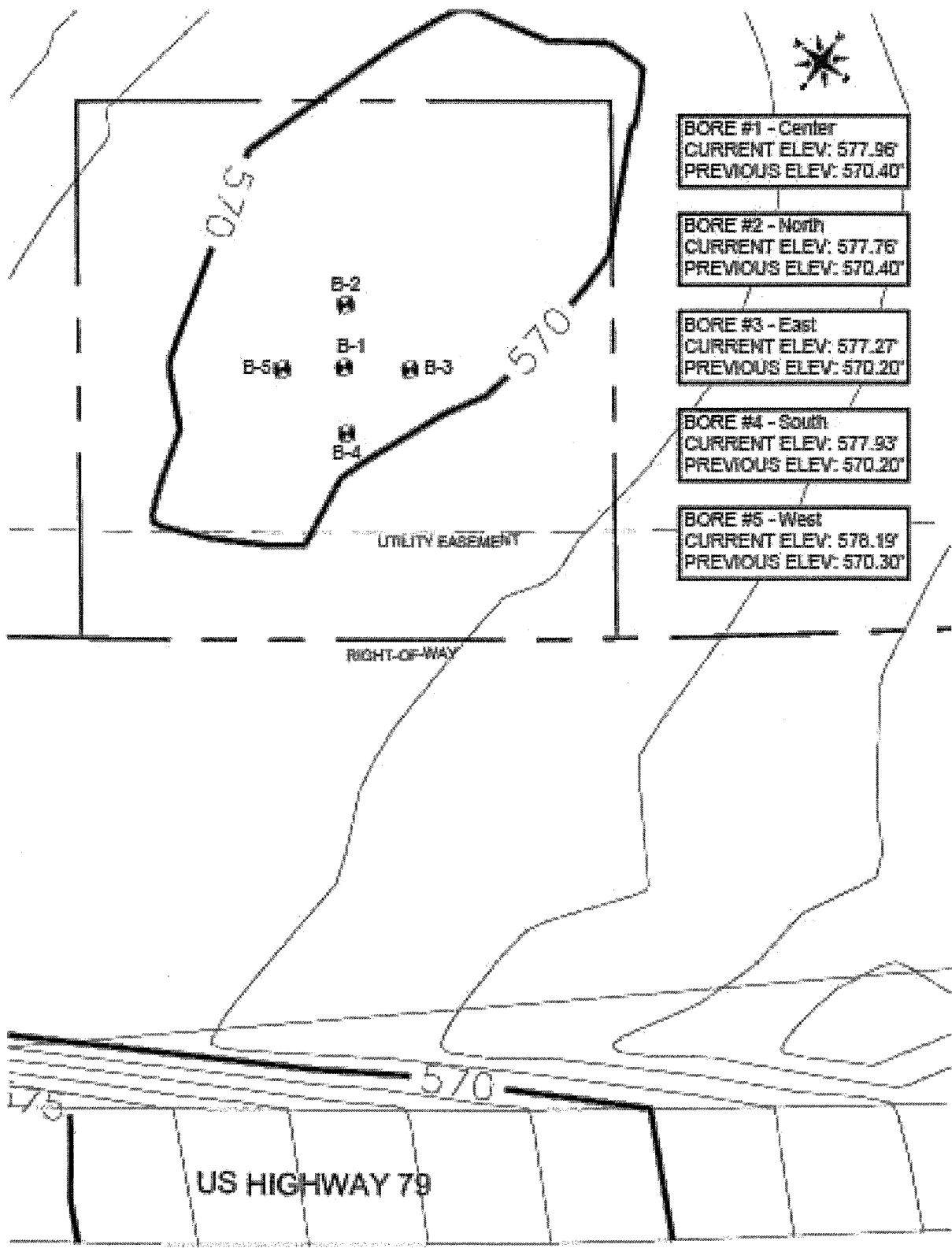


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**Aerial Photograph**  
**Novelis 500,000 Gallon**  
**Elevated Water Tank**  
Guthrie, Kentucky  
Vector Project 18-3392



BORE #1 - Center CURRENT ELEV: 577.96' PREVIOUS ELEV: 570.40'
BORE #2 - North CURRENT ELEV: 577.76' PREVIOUS ELEV: 570.40'
BORE #3 - East CURRENT ELEV: 577.27' PREVIOUS ELEV: 570.20'
BORE #4 - South CURRENT ELEV: 577.93' PREVIOUS ELEV: 570.20'
BORE #5 - West CURRENT ELEV: 578.19' PREVIOUS ELEV: 570.30'

Legend

 - Surveyed Boring Location (Provided by McGhee Engineering)

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**Test Pit Location Map**  
**Novelis 500,000 Gallon**  
**Elevated Water Tank**  
 Guthrie, Kentucky  
 Vector Project 18-3392

## **FIELD TESTING PROCEDURES**

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Vector Engineers performs field tests in general accordance with the American Society for Testing and Materials (ASTM). These procedures are generally recognized as the basis for uniformity and consistency of test results in the geotechnical engineering profession. All work is initiated and supervised by qualified geotechnical professionals.

Subsequent portions of this attachment present briefly describe of our field testing procedures. Where applicable, we have referenced these procedures to ASTM standards which contain specific descriptions of apparatus, procedures, reporting, etc.

### **SOIL TEST BORING, ASTM D-1586**

The borings were made with a hollow-stem auger powered by a drill rig. At regular intervals, soil samples were obtained through the hollow augers with a standard 1.4-inch I.D., 2.0-inch O.D. split-tube sampler.

The sampler was initially seated 6 inches to penetrate any loose cuttings; then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot was recorded and is designated as the *standard penetration resistance (SPT N-value)*. Penetration resistance, when properly evaluated, is an index to soil consistency and strength.

In the field, our geotechnical professional logged and described the samples as they were obtained. Representative portions of each soil sample were labeled and sealed, then transported to our laboratory. The samples were examined by a graduate geotechnical engineer or geologist to visually check the field descriptions. Boring data, including sample intervals, penetration resistances, soil descriptions, and groundwater level are shown on the attached Test Boring Records.

### **AUGER REFUSAL MATERIALS**

Auger refusal is a term that describes subsurface materials sufficiently competent to prevent further penetration by our drilling augers. Our criterion for auger refusal is the inability of our drill rig to advance the augers with 300 psi down pressure. Typically, refusal materials exhibit penetration resistances in excess of 100 blows per foot. Refusal materials can be hard cemented soil, soft weathered rock, coarse gravel or boulders, rubble or other hard debris, thin rock seams, or the upper surface of sound, continuous rock. Core drilling procedures are required to determine the character and continuity of refusal materials.

## FIELD TESTING PROCEDURES

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### CORRELATION OF STANDARD PENETRATION RESISTANCE WITH RELATIVE COMPACTNESS AND CONSISTENCY

#### Sand and Gravel

<u>Standard Penetration Resistance</u> <u>Blows/Foot</u>	<u>Relative Compactness</u>
0-4	Very Loose
5-10	Loose
11-20	Firm
21-30	Very Firm
31-50	Dense
Over 50	Very Dense

#### Silt and Clay

<u>Standard Penetration Resistance</u> <u>Blows/Foot</u>	<u>Consistency</u>
0-2	Very Soft
3-4	Soft
5-8	Firm
9-15	Stiff
16-30	Very Stiff
31-50	Hard
Over 50	Very Hard

## **FIELD TESTING PROCEDURES**

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### **ROCK CORING, ASTM D-2113**

After we encountered refusal to the augers, refusal materials were cored using a diamond-studded bit fastened to the end of a hollow tube core barrel. This device was rotated at high speed by the drill rig, and the cuttings were brought to the surface by circulating water. Core samples of the materials penetrated were protected and retained in the swivel-mounted inner tube of the core barrel. Upon completion of each coring "run", the core barrel was brought to the surface and the samples removed and placed in core boxes. The samples were logged in the field by the driller, then returned to the laboratory.

At the laboratory, the rock's relative hardness, percent recovery, and rock quality designation were determined by a geotechnical engineer or geologist. Criteria for defining hardness are listed below

Recovery is the ratio of the sample length obtained to the length of core run, expressed as a percent. The percent recovery is related to rock soundness and continuity. Rock descriptions and recoveries are shown on the Test Boring Records. The NQ size designates a bit which obtains rock cores  $1\frac{7}{8}$  inches in diameter.

The rock quality designation (RQD) is also a way of describing the rock soundness and continuity. RQD is the ratio of the sum of the lengths of rock pieces 4 or more inches long to the length of the core run expressed as a percent. Rock described as a function of RQD is as follows:



## FIELD TESTING PROCEDURES

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### RELATIVE HARDNESS OF ROCK

<b>Very Soft</b>	Pieces 1 inch or more in thickness can be broken by finger pressure; can be scratched readily by fingernail
<b>Soft</b>	May be broken with fingers.
<b>Medium</b>	May be scratched with a nail; corners and edges may be broken with fingers.
<b>Moderately Hard</b>	Moderate blow of hammer required to break the sample.
<b>Hard</b>	Hard blow of hammer required to break the sample.
<b>Very Hard</b>	Several hard blows of hammer required to break the sample.

### RELATIVE QUALITY OF ROCK CORES

<u>Quality:</u>	<u>RQD:</u>
Very Poor	0 to 25%
Poor	25 to 50%
Fair	50 to 75%
Good	75 to 90%
Excellent	90 to 100%



# VECTOR ENGINEERS, INC

GEOTECHNICAL • MATERIALS • GEOSCIENCES

## Boring Log

Surveyed Elevations:  
Original: 570.40 feet  
With Stockpile: 577.96 feet

Boring: B-1

Page 1 of 1

**Project: 18-3392 Novelis 500,000 Gallon Elevated Water Tank Guthrie, Kentucky**

<b>Method:</b> H.S.A.	<b>Date:</b> 5/31/2018	<b>Location:</b> Center of Tank
<b>Diameter:</b> 2 1/4 inches (inside diameter)	<b>Rig Type:</b> Diedrich D-50	<b>Hammer Type:</b> Automatic
<b>Groundwater:</b> Dry Upon Completion		<b>Weather:</b> Partly Sunny, 80's
<b>Engineer:</b> Matt Slusser, PE <b>Driller:</b> Pete Nemeth		<b>Notes:</b>

From (ft)	To (ft)	Material Description	Symbol	Sample Depth (ft)	Sample Type	Blows per 6-inch increment	Recovery (in)	SPT-N value	Rock Quality (RQD, %)	Aterberg Limits (LL, Pl)	Moisture Content (%)	% Fines (clay & silt)	Unconfined Compressive Strength (ksf)	
0.0		FILL -- STIFF, brown LEAN CLAY (CL), moist												
	7.5			7 1/2	SS	2, 5, 5	18	10						
7.5		STIFF, reddish brown LEAN CLAY (CL), with traces of oxide nodules, moist												
	13.0			10	SS	3, 5, 9	18	14			22%			
13.0		STIFF to VERY STIFF, reddish brown, FAT CLAY (CH), with traces of oxide nodules and some chert fragments, moist												
				15	SS	2, 6, 9	18	15		60, 37	29%			
				20	SS	3, 7, 10	18	17			28%			
				25	SS	3, 6, 10	18	16		52, 31	29%			
				30	SS	4, 6, 8	18	14			28%			
				35	SS	5, 5, 9	18	14						
				40	SS	3, 7, 6	11	13		44%				
				45	SS	5, 5, 9	18	14						
	47.9													
47.9		Auger refusal at 47.9 feet												







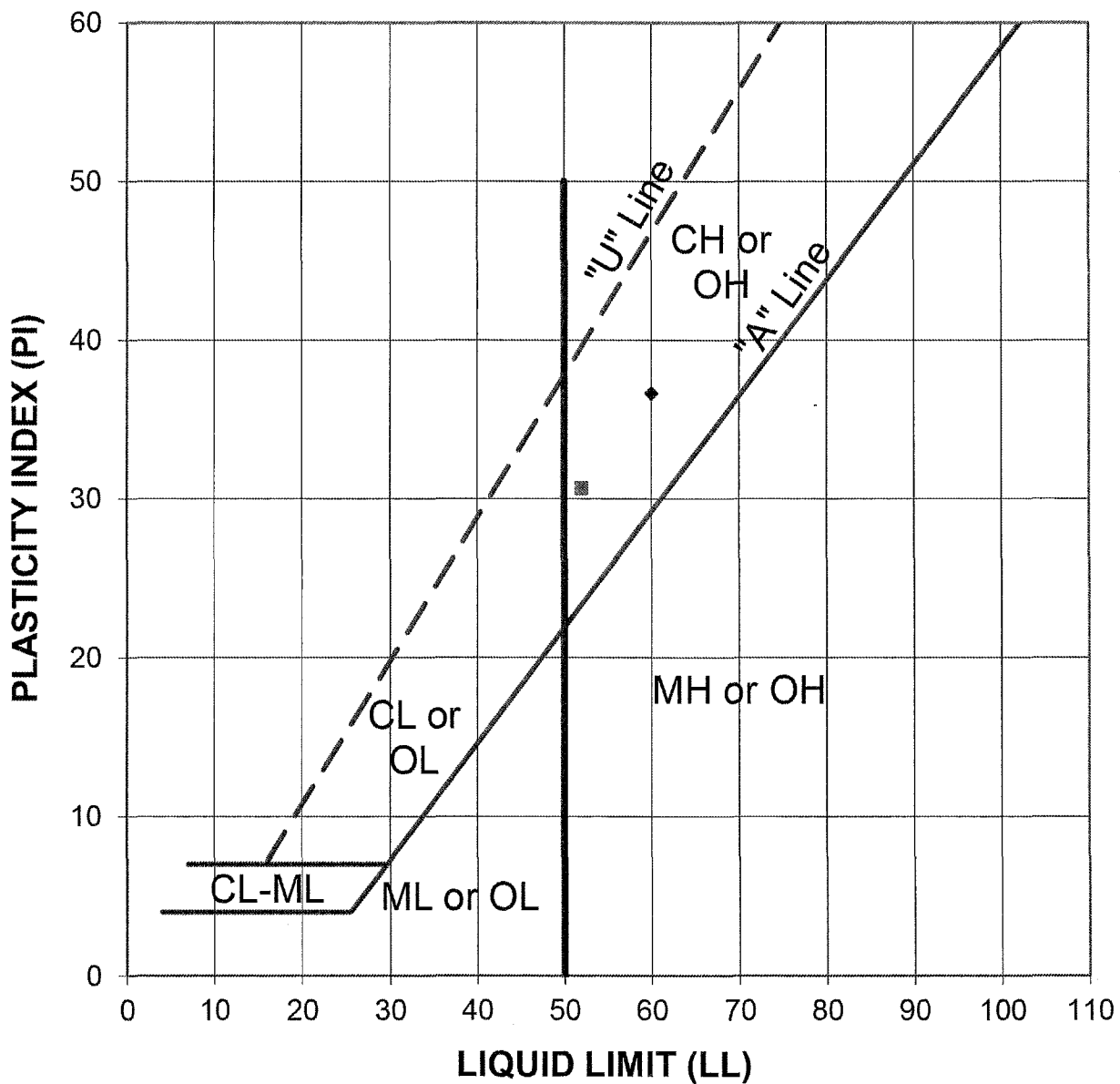




## Atterberg Limits (ASTM D4318)

PROJECT NAME: <i>Novelis 500,000 Gallon Elevated Water Tank</i>	PROJECT NO.: <i>18-3392</i>
SAMPLE RECEIVED: <i>06/01/17</i>	TECHNICIAN: <i>EH</i>
TEST DATE: <i>06/13/18</i>	REVIEWED BY: <i>MS</i>
METHOD: <i>Multipoint</i>	REPORT DATE: <i>06/14/18</i>

Sample ID / Location	Depth	LL	PL	PI	Moist, %	Est. % retained on No. 40 sieve	Classification - Description
B-1	14-15.5	60	23	37	28.5	<5	Reddish Brown CH
B-1	24-25.5	52	21	31	28.6	<5	Reddish Brown CH



◆ B-1 14-15.5	■ B-1 24-25.5
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## **LABORATORY TESTING PROCEDURES**

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The laboratory tests are performed in general accordance with the American Society for Testing and Materials (ASTM). These procedures are generally recognized as the basis for uniformity and consistency of test results in the geotechnical engineering profession. The tests are performed by skilled technicians trained in ASTM procedures. The laboratory equipment is well maintained and calibrated at least yearly.

Subsequent portions of this attachment present briefly describe of our testing procedures. Where applicable, we have referenced these procedures to ASTM standards which contain specific descriptions of apparatus, procedures, reporting, etc.

### **MOISTURE CONTENT DETERMINATION, ASTM D-2216**

The moisture content of soils is an indicator of various physical properties, including strength and compressibility. Selected samples obtained during exploratory drilling were taken from their sealed containers. Each sample was weighed and then placed in an oven heated to  $110^{\circ}\text{C} \pm 5^{\circ}$ . The sample remained in the oven until the free moisture had evaporated. The dried sample was removed from the oven, allowed to cool, and re-weighed. The moisture content was computed by dividing the weight of evaporated water by the weight of the dry sample. The results are expressed as a percent.

### **UNIT WEIGHT DETERMINATIONS**

Soil or rock core samples were selected for unit weight determination. Unit weight is an indicator of various physical properties of the soil, including strength, compressibility, and permeability. Each sample was prepared by trimming the ends and measuring its length and diameter. The specimen volume was computed from these dimensions. The sample was then weighed and the moisture content determined to compute the wet and dry unit weights.

### **ATTERBERG LIMITS DETERMINATION, ASTM D-4318**

Representative samples were subjected to Atterberg limits testing to determine the soil's plasticity characteristics. The plasticity index (PI) is the range of moisture content through which the soil deforms as a plastic material. It is bracketed by the liquid limit (LL) and the plastic limit (PL). The liquid limit is the moisture content at which the soil becomes wet enough to flow as a viscous fluid. To determine the liquid limit, a soil specimen is first washed through a No. 40 sieve. The materials finer than the No. 40 sieve are retained and dried until the soil is in a viscous fluid state. A portion of this soil is then placed in a brass cup of standardized dimensions. A groove is cut through the middle of the soil specimen with a grooving tool of standard dimensions. The cup is attached to a cam that lifts the cup 10 mm and then allows the cup to fall onto a hard rubber base. The cam is rotated at about 2 cps until the two halves of the soil specimen come in contact at the bottom of the groove for a distance of 1/2 inch. The number of blows required to achieve this 1/2 inch contact is recorded, and part of the specimen is subjected to a moisture content determination. The remainder of the specimen is

## **LABORATORY TESTING PROCEDURES**

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allowed to air dry for a short time, and the grooving process and cam action repeated. This testing sequence is repeated until more than 25 blows are required to achieve the required groove contact. After the number of blows vs. moisture content for the various test points are plotted on arithmetic graph paper, the moisture content corresponding to 25 blows is designated the liquid limit.

The plastic limit (PL) is the lowest moisture content at which the soil is sufficiently plastic to be manually rolled into threads 1/8" in diameter. The plastic limit is determined by taking a part of soil remaining from the liquid limit test, and repeatedly rolling, kneading, and air drying it until the soil breaks into threads about 1/8 inches in diameter and 3/8 inches long. The moisture content of these soil threads is then determined and is designated the plastic limit.

### **UNCONFINED COMPRESSION TEST OF INTACT ROCK CORE, ASTM D-2938**

The unconfined compression test is performed by applying a continuously increasing axial load with no lateral confining pressure to a rock core specimen. The load is increased until peak load and failure are obtained and the resulting stress is calculated. The specimen is cut with a saw to a length-to-diameter ratio of about 2 to 2.5 and placed in the testing device. This calculated stress is known as the unconfined compressive strength ( $q_u$ ).

# USGS Design Maps Summary Report

## User-Specified Input

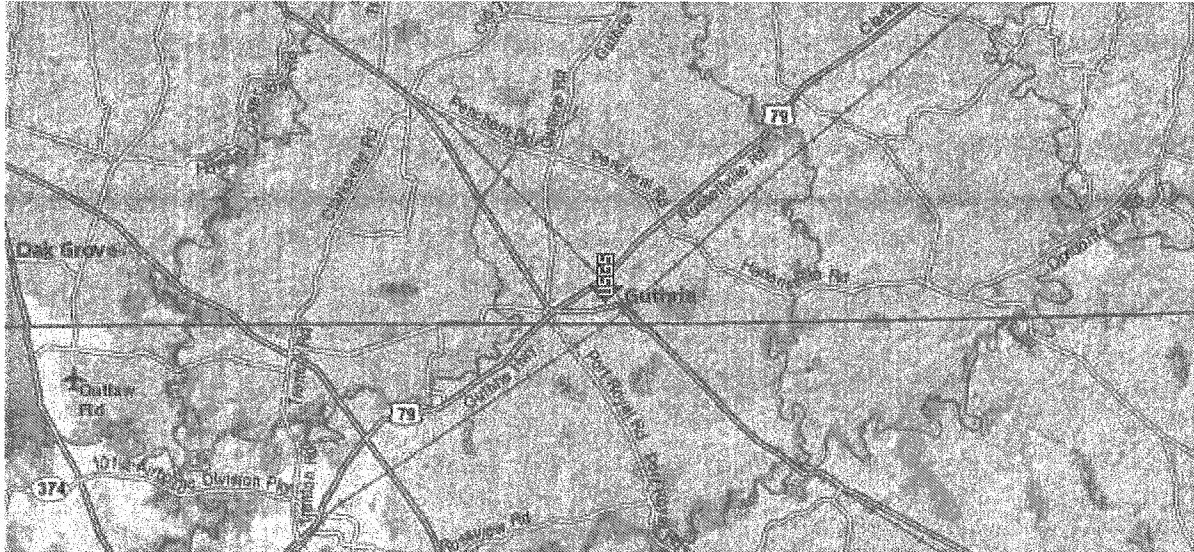
**Report Title** Novelis 500,000 Gallon Elevated Water Tank  
Thu June 14, 2018 22:27:58 UTC

**Building Code Reference Document** ASCE 7-10 Standard  
(which utilizes USGS hazard data available in 2008)

**Site Coordinates** 36.65896°N, 87.17426°W

**Site Soil Classification** Site Class D - "Stiff Soil"

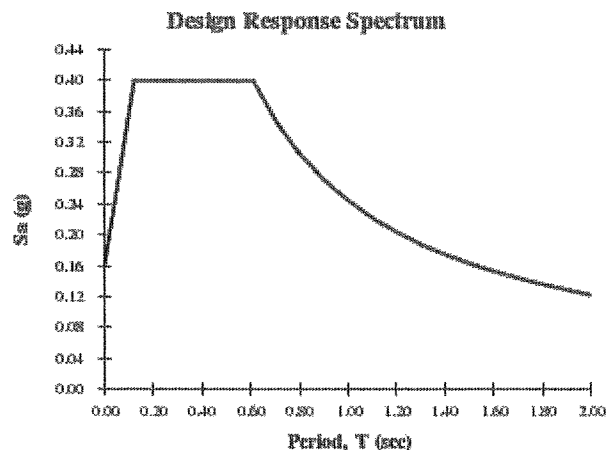
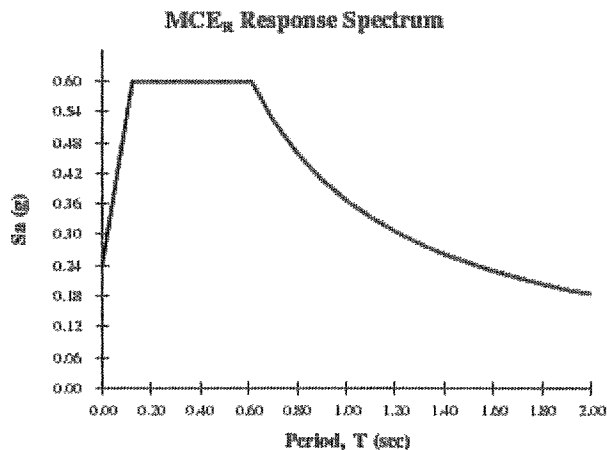
**Risk Category** I/II/III



## USGS-Provided Output

$S_s = 0.406 \text{ g}$	$S_{MS} = 0.599 \text{ g}$	$S_{DS} = 0.400 \text{ g}$
$S_1 = 0.175 \text{ g}$	$S_{M1} = 0.367 \text{ g}$	$S_{D1} = 0.245 \text{ g}$

For information on how the  $S_s$  and  $S_1$  values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.



For  $PGA_M$ ,  $T_L$ ,  $C_{RS}$ , and  $C_{R1}$  values, please [view the detailed report](#).

MATTHEW G. BEVIN  
GOVERNOR



CHARLES G. SNAVELY  
SECRETARY

**ENERGY AND ENVIRONMENT CABINET**  
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601  
January 3, 2019

Mr. John Haley  
Todd Co Water District  
617 W Main St  
Elkton, KY 42220

RE: Novelis Water Supply Project-WST  
Addition  
Todd County, KY  
Todd Co Water District  
AI #: 34111, APE20180003  
PWSID #: 1100944-18-003

Dear Mr. Haley:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of a 500,000 gallon elevated water storage tank. This is to advise that plans and specifications for the above referenced project are APPROVED with respect to sanitary features of design, as of this date with the requirements contained in the attached construction permit and the following condition:

- The overflow shall discharge a minimum of 12-inches above the ground surface as depicted in the revised details submitted to this office on December 10, 2018.

If you have any questions concerning this project, please contact Mr. Mortaza Tabayah at 502-782-7086.

Sincerely,

A handwritten signature in black ink, appearing to read "T. Humphries".

Terry Humphries, P.E.  
Supervisor, Engineering Section  
Water Infrastructure Branch  
Division of Water

TH:MT  
Enclosures

c: McGhee Engineering Inc  
Todd County Health Department  
Division of Plumbing

## Distribution-Major Construction

Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180003

Page 1 of 5

### STOR000000004 (Novelis Water Supply Project - WST Addition) 500,000 gallon elevated water storage tank.:

#### 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 storage tanks shall have a minimum 100% turnover rate of once per 72 hours. [Drinking Water General Design Criteria IV.6.a]
T-9	Minimum water level for all gravity storage tanks shall maintain a minimum design pressure of 30 psi for all potential points of use supplied by the tank. [Drinking Water General Design Criteria IV.6.b]
T-10	Separate inlet and outlet is required on storage tanks; and the inlet has to be in the upper half of the tank (unless there is a separate mixing system). [Drinking Water General Design Criteria IV.6.c]
T-11	The maximum variation between high and low levels in storage structures providing pressure to a distribution system should not exceed 30 feet. [Recommended Standards for Water Works 7.3.1]
T-12	Finished water storage structures which provide pressure directly to the distribution system shall be designed so they can be isolated from the distribution system and drained for cleaning or maintenance without causing a loss of pressure in the distribution system. [Recommended Standards for Water Works 7.3.2]

## Distribution-Major Construction

Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180003

Page 2 of 5

### STOR000000004 (Novelis Water Supply Project - WST Addition) 500,000 gallon elevated water storage tank.:

#### Narrative Requirements:

Condition No.	Condition
T-13	The storage structure drain shall discharge to the ground surface with no direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.3.2]
T-14	Adequate controls shall be provided to maintain levels in distribution system storage structures. Level indicating devices should be provided at a central location. [Recommended Standards for Water Works 7.3.3]
T-15	The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. [Recommended Standards for Water Works 7.0.1.b]
T-16	The system should be designed to facilitate turnover of water in the reservoir. [Recommended Standards for Water Works 7.0.6]
T-17	Excessive storage capacity should be avoided to prevent potential water quality deterioration problems. [Recommended Standards for Water Works 7.0.1.c]
T-18	The overflow pipe shall be of sufficient diameter to permit waste of water in excess of the filling rate. [Recommended Standards for Water Works 7.0.7.d]
T-19	Finished water storage structures shall be designed with reasonably convenient access to the interior for cleaning and maintenance. [Recommended Standards for Water Works 7.0.8]
T-20	Finished water storage structures shall be vented. Vents shall prevent the entrance of surface water, rainwater, bird, and animals. The overflow pipe shall not be considered a vent. Open construction between the sidewall and roof is not permissible. [Recommended Standards for Water Works 7.0.9]
T-21	Finished water storage structures and their appurtenances, especially the riser pipes, overflows, and vents, shall be designed to prevent freezing. Equipment used for freeze protection that will come into contact with the potable water shall meet ANSI/NSF Standard 61. [Recommended Standards for Water Works 7.0.13]
T-22	If a flapper valve is utilized, a screen shall be provide inside the valve. Provisions must be included to prevent the flapper from freezing shut. [Recommended Standards for Water Works 7.0.7.e]
T-23	The roof and sidewalls of all water storage structures must be watertight with no openings except properly constructed vents, manholes, overflows, risers, drains, pump mountings, control ports, or piping for inflow and outflow. [Recommended Standards for Water Works 7.0.10]
T-24	Any pipes running through the roof or sidewall of a metal storage structure must be welded, or properly gasketed. In concrete tanks, these pipes shall be connected to standard wall castings which were poured in place during the forming of the concrete. [Recommended Standards for Water Works 7.0.10.a]

## Distribution-Major Construction

Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180003

Page 3 of 5

### STOR000000004 (Novelis Water Supply Project - WST Addition) 500,000 gallon elevated water storage tank.:

#### Narrative Requirements:

Condition No.	Condition
T-25	Openings in the roof of a storage structure designed to accommodate control apparatus or pump columns, shall be curbed and sleeved with proper additional shielding to prevent contamination from surface or floor drainage. [Recommended Standards for Water Works 7.0.10.b]
T-26	Valves and controls should be located outside the storage structure so that the valve stems and similar projections will not pass through the roof or top of the reservoir. [Recommended Standards for Water Works 7.0.10.c]
T-27	Every catwalk over finished water in a storage structure shall have a solid floor with sealed raised edges, designed to prevent contamination from shoe scrapings and dirt. [Recommended Standards for Water Works 7.0.14]
T-28	The discharge pipes from water storage structures shall be located in a manner that will prevent the flow of sediment into the distribution system. [Recommended Standards for Water Works 7.0.15]
T-29	Smooth-nosed sampling tap(s) shall be provided to facilitate collection of water samples for both bacteriological and chemical analyses. The sample tap(s) shall be easily accessible. [Recommended Standards for Water Works 7.0.19]
T-30	Sewers, drains, standing water, and similar sources of possible contamination must be kept at least 50 feet from water storage facilities. Gravity sewers constructed of water main quality pipe, pressure tested in place without leakage, may be used at distances greater than 20 feet but less than 50 feet. [Recommended Standards for Water Works 7.0.2.c]
T-31	The roof of the storage structure shall be well drained. Downspout pipes shall not enter or pass through the reservoir. [Recommended Standards for Water Works 7.0.10.d]
T-32	Porous material, including wood and concrete block shall not be used for potable water contact applications. [Recommended Standards for Water Works 7.0.11]
T-33	All finished water storage structures shall have suitable watertight roofs which exclude birds, animals, insects, and excessive dust. [Recommended Standards for Water Works 7.0.3]
T-34	Fencing, locks on access manholes, and other necessary precautions shall be provided to prevent trespassing, vandalism, and sabotage. [Recommended Standards for Water Works 7.0.4]
T-35	Ladders, ladder guards, balcony railings, and safely located entrance hatches shall be provided where applicable. [Recommended Standards for Water Works 7.0.12.a]

## Distribution-Major Construction

Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180003

Page 4 of 5

### STOR000000004 (Novelis Water Supply Project - WST Addition) 500,000 gallon elevated water storage tank.:

#### Narrative Requirements:

Condition No.	Condition
T-36	All water storage structures shall be provided with an overflow which is brought down to an elevation between 12 and 24 inches above the ground surface, and discharges over a drainage inlet structure or a splash plate. All overflow pipes shall be located so that any discharge is visible. [Recommended Standards for Water Works 7.0.7]
T-37	No drain on a water storage structure may have a direct connection to a sewer or storm drain. [Recommended Standards for Water Works 7.0.5]
T-38	The design shall allow draining the storage facility for cleaning or maintenance without causing loss of pressure in the distribution system. [Recommended Standards for Water Works 7.0.5]
T-39	No overflow may be connected directly to a sewer or a storm drain. [Recommended Standards for Water Works 7.0.7]
T-40	Proper protection shall be given to metal surfaces by paints or other protective coatings, by cathodic protective devices, or by both. [Recommended Standards for Water Works 7.0.17]
T-41	Paint systems shall meet ANSI/NSF standard 61. [Recommended Standards for Water Works 7.0.17.a]
T-42	Interior paint must be applied, cured, and used in a manner consistent with the ANSI/NSF approval. [Recommended Standards for Water Works 7.0.17.a]
T-43	After curing, the coating shall not transfer any substance to the water which will be toxic or cause taste or odor problems. [Recommended Standards for Water Works 7.0.17.a]
T-44	Wax coatings for the tank interior shall not be used on new tanks. [Recommended Standards for Water Works 7.0.17.b]
T-45	Old wax coating must be completely removed before using another tank coating. [Recommended Standards for Water Works 7.0.17.b]
T-46	Finished water storage structures shall be disinfected in accordance with AWWA Standard C652. Two or more successive sets of samples, taken at 24-hour intervals, shall indicate microbiologically satisfactory water before the facility is placed into operation. [Recommended Standards for Water Works 7.0.18.a]
T-47	The disinfection procedure specified in AWWA Standard C652 chlorination method 3, section 4.3 which allows use of the highly chlorinated water held in the storage tank for disinfection purposes, is prohibited unless the initial heavily chlorinated water is properly disposed. [Recommended Standards for Water Works 7.0.18.c]



**Distribution-Major Construction**  
Todd Co Water District  
Facility Requirements

Activity ID No.:APE20180003

**STOR0000000004 (Novelis Water Supply Project - WST Addition) 500,000 gallon elevated water storage tank.:**

**Narrative Requirements:**

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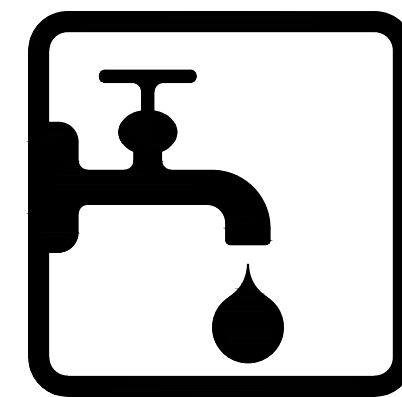
Condition No.	Condition
T-48	The overflow for an elevated tank shall open downward and be screened with a four mesh, non-corrodible screen. [Recommended Standards for Water Works 7.0.7.c]
T-49	Elevated storage tanks shall have at least one of the access manholes framed at least four inches above the surface of the roof at the opening. All other manholes or access ways shall be bolted and gasketed. [Recommended Standards for Water Works 7.0.8.1]
T-50	Elevated storage tank vents shall open downward, and be fitted with either four mesh non-corrodible screen, or with finer mesh non-corrodible screen in combination with an automatically resetting pressure-vacuum relief mechanism. [Recommended Standards for Water Works 7.0.9.e]
T-51	Elevated tanks with riser pipes over eight inches in diameter shall have protective bars over the riser openings inside the tank. [Recommended Standards for Water Works 7.0.12.b]
T-52	Railings or handholds shall be provided on elevated tanks where persons must transfer from the access tube to the water compartment. [Recommended Standards for Water Works 7.0.12.c]
T-53	When an internal overflow pipe is used on elevated tanks, it should be located in the access tube. For vertical drops on other types of storage facilities, the overflow pipe should be located on the outside of the structure. [Recommended Standards for Water Works 7.0.7.a]
T-54	If a water circulation system is used, it is recommended that the circulation pipe be located separately from the riser pipe. [Recommended Standards for Water Works 7.0.13]
T-55	Reservoirs with pre-cast concrete roof structures must be made watertight with the use of a waterproof membrane or similar product. [Recommended Standards for Water Works 7.0.10.f]

# CONSTRUCTION PLANS

for the

## NOVELIS WATER SUPPLY PROJECT

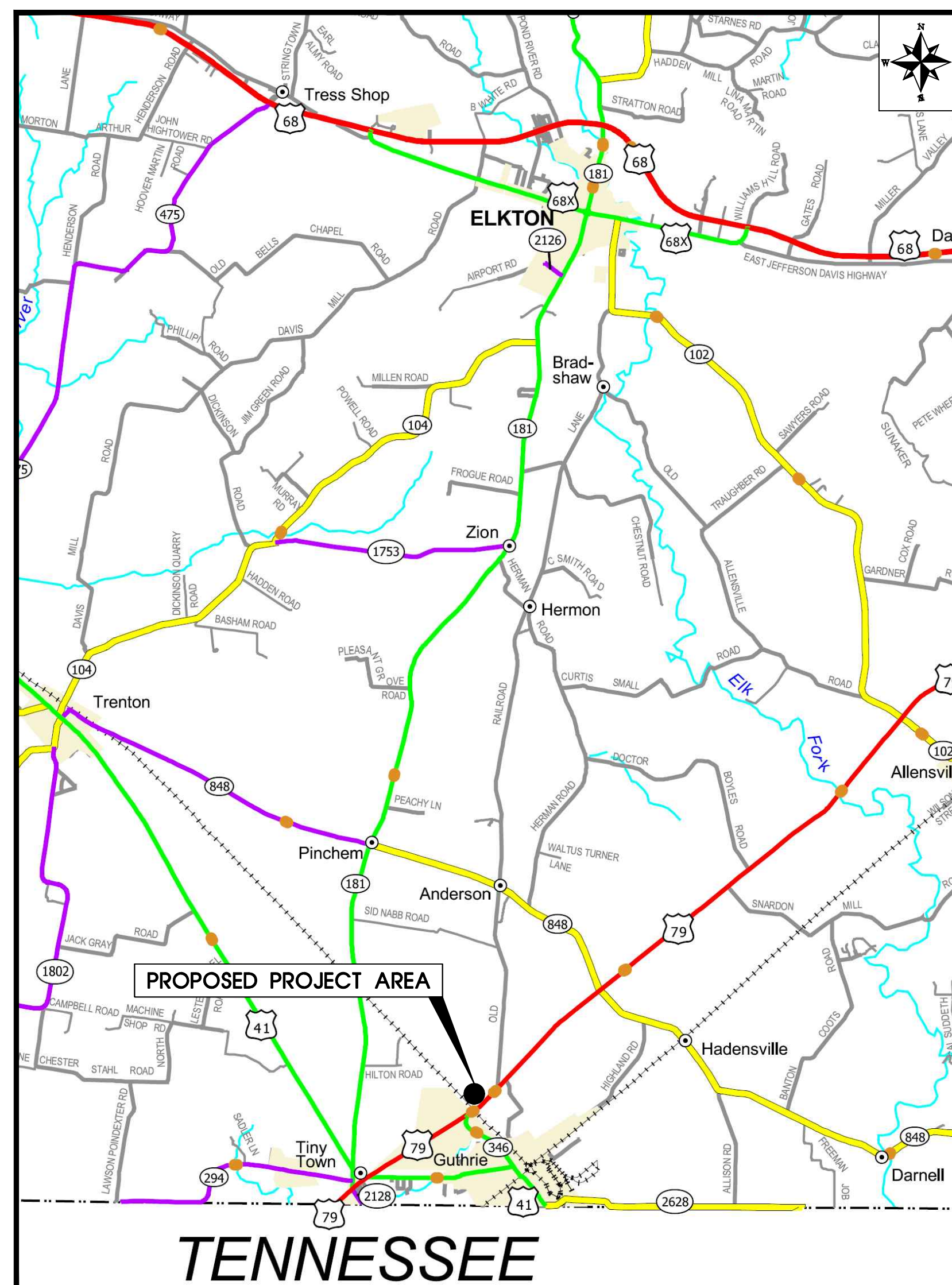
Contract #2 - Water Storage Tank  
by the



# Todd County Water District

## Todd County, Kentucky

VICINITY MAP



SHEET INDEX

**PROJECT INFORMATION**

T-1 Title Sheet

**TANK PLANS**

- C-1 Tank Site Layout Plan
- C-2 Tank Site Piping Plan
- C-3 Civil Details
- C-4 Civil Details
  
- M-1 Tank Base Floor Plan & Overall Elevation
- M-2 Tank Elevation Sections
- M-3 Tank Details & Section

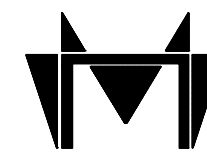
**Board of Directors**

<i>Dr. George Brown</i>	<i>Chairman</i>
<i>Billy Lear</i>	<i>Commissioner</i>
<i>Ed Slack</i>	<i>Commissioner</i>
<i>Tony Adler</i>	<i>Commissioner</i>
<i>Lols Brown</i>	<i>Commissioner</i>

**Owner**

Todd County Water District  
PO Box 520  
Elkton, Kentucky 42220  
(270) 265-2229

**Engineer**

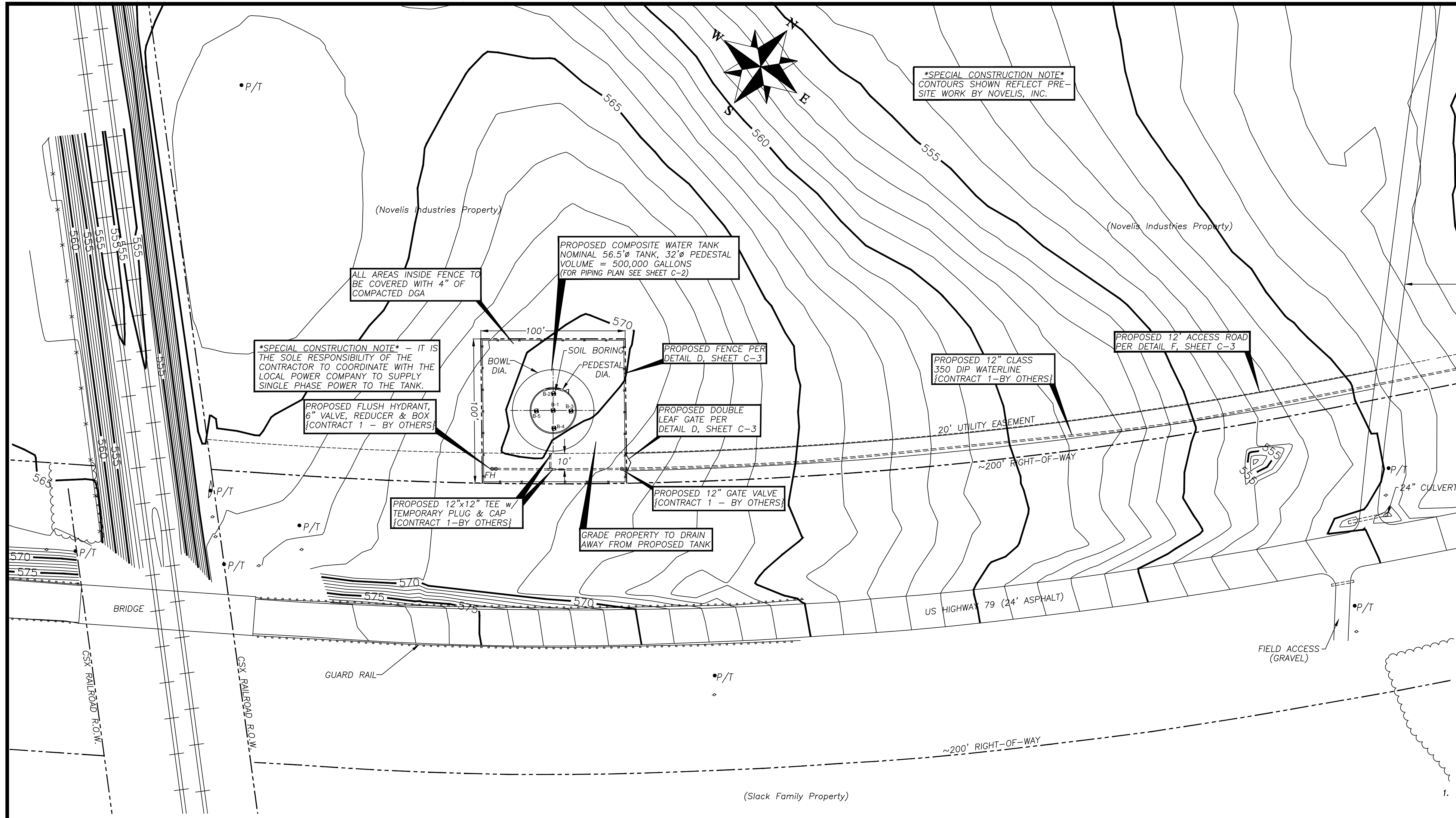


McGhee Engineering, Inc.  
202 Ewing St, Box 267  
Guthrie, Kentucky 42234  
(270) 483-9985

No	Revision	Date	By

REVISIONS

**November 2018**



**\*SPECIAL CONSTRUCTION NOTE\***  
 CONTOURS SHOWN REFLECT PRE-SITE WORK BY NOVELIS, INC.

**\*SPECIAL CONSTRUCTION NOTE\*** - IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE LOCAL POWER COMPANY TO SUPPLY SINGLE PHASE POWER TO THE TANK.

ALL AREAS INSIDE FENCE TO BE COVERED WITH 4" OF COMPACTED DGA

PROPOSED COMPOSITE WATER TANK  
 NOMINAL 56.5' Ø TANK, 32' Ø PEDESTAL  
 VOLUME = 500,000 GALLONS  
 (FOR PIPING PLAN SEE SHEET C-2)

PROPOSED FENCE PER  
 DETAIL D, SHEET C-3

PROPOSED 12" CLASS  
 350 DIP WATERLINE  
 (CONTRACT 1-BY OTHERS)

PROPOSED 12' ACCESS ROAD  
 PER DETAIL F, SHEET C-3

PROPOSED FLUSH HYDRANT,  
 6" VALVE, REDUCER & BOX  
 (CONTRACT 1 - BY OTHERS)

PROPOSED DOUBLE  
 LEAF GATE PER  
 DETAIL D, SHEET C-3

PROPOSED 12"x12" TEE w/  
 TEMPORARY PLUG & CAP  
 (CONTRACT 1-BY OTHERS)

PROPOSED 12" GATE VALVE  
 (CONTRACT 1 - BY OTHERS)

GRADE PROPERTY TO DRAIN  
 AWAY FROM PROPOSED TANK

NOVELIS CONSTRUCTION  
 ENTRANCE (GRAVEL)

FIELD ACCESS  
 (GRAVEL)

**TANK SITE LAYOUT PLAN**  
 SCALE: 1"=40'

A  
 C-1

**GENERAL NOTES**

- ALL TRENCHING AND EXCAVATION ON THE PROJECT IS UNCLASSIFIED. NO CLAIMS FOR ADDITIONAL COMPENSATION BASED UPON THE TYPE OF MATERIALS ENCOUNTERED OR CONSTRUCTION CONDITIONS WILL BE CONSIDERED.
- NO ADDITIONAL PAYMENT WILL BE MADE FOR ADDITIONAL EXCAVATION DEPTH MADE NECESSARY TO CLEAR OTHER PIPES OR OBSTRUCTIONS, TO ACHIEVE THE REQUIRED COVER OVER THE PIPE, OR TO REACH A SOUND BEARING SURFACE.
- THE CONTRACTOR SHALL MINIMIZE DISTURBANCE TO PRIVATE PROPERTY, AND SHALL CONFINE HIS OPERATIONS TO EASEMENTS AND CONSTRUCTION LIMITS PROVIDED UNLESS PROVIDED FOR IN WRITING BY THE LAND OWNER.
- WATER INLET LINES SHALL BE DUCTILE IRON CONFORMING TO AWWA C110, C111 & C151, NSF APPROVED, CLASS 53 MINIMUM OR CLASS 200 PVC AS NOTED.
- FITTINGS SHALL BE DUCTILE IRON CONFORMING TO AWWA C110. CONCRETE FOR THRUST BLOCKING SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
- THE LOCATIONS OF EXISTING TOPOGRAPHIC FEATURES ARE APPROXIMATE, CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING.
- CONTRACTOR SHALL CONTACT KY. UNDERGROUND PROTECTION, INC. AT (800) 752-6007, 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.
- REFER TO THE PROJECT GEOTECHNICAL REPORT PREPARED BY VECTOR ENGINEERS, INC. (OWENSBORO, KY) FOR INFORMATION CONCERNING SUBSURFACE CONDITIONS. IN PARTICULAR, THE CONTRACTOR IS REQUIRED TO ARRANGE A SUBGRADE INSPECTION BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING ANY SUBGRADE MATERIALS OR CONSTRUCTING FOUNDATIONS. ALSO, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE INITIAL TANK FILLING PROCEDURE, AS RECOMMENDED.
- THE AREA WITHIN THE PROPOSED CHAIN LINK FENCE ARE TO RECEIVE A MINIMUM OF 4" COMPACTED DENSE GRADE AGGREGATE FINISH SURFACE GRADED TO DRAIN. OTHER DISTURBED UNPAVED AREAS ARE TO BE FERTILIZED, SEEDED AND MULCHED TO ESTABLISH GRASS AND MINIMIZE EROSION. DISTURBANCE TO PAVED AREAS SHALL BE KEPT TO A MINIMUM.
- PRIOR TO BEING PLACED IN SERVICE, THE TANK AND PIPING SHALL BE DISINFECTED IN ACCORDANCE WITH DIVISION OF WATER REGULATIONS. THE CONTRACTOR SHALL PERFORM BACTERIOLOGICAL TESTING OF THE DISINFECTED PIPING AND TANK, AND DELIVER TEST RESULTS INDICATING ACCEPTABLE DISINFECTION TO THE ASSOCIATION.
- ALL TRASH, DEBRIS, EXCESS MATERIALS AND OTHER WASTE IS TO BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR DAILY.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE SITE IN A CLEAN AND ORDERLY CONDITION DURING CONSTRUCTION.
- ANY DAMAGE TO EXISTING FACILITIES OR PROPERTY DURING CONSTRUCTION ARE TO BE REPAIRED BY THE CONTRACTOR.
- THE CONTRACTOR SHALL COORDINATE WITH OTHERS IN THE INSTALLATION OF THE MONITORING TELEMETRY SYSTEM FOR CONTROL OF TANK LEVELS.

**UTILITY CONTACTS**

Ky. Underground Protection	(800) 752-6007
South Central Bell	(800) 752-6007
Pennyrile Rural Electric Coop.	(800) 265-2545
Texas Gas Pipeline	(800) 626-1948
Western Kentucky Gas	(800) 752-6007
KDOT Division #3: Bowling Green	(270) 746-7898
Todd County Road Department	(270) 265-5262
City of Guthrie	(270) 483-2511

**LEGEND**

PROPOSED WATER LINE	-----
FENCE LINE	-----
PROPERTY LINE	-----
SOIL BORING (SEE REPORT)	⊕
PHONE PEDESTAL	⊞
POLE GUY WIRE	⊥
POWER/TELEPHONE POLE	•P/T
VALVE	⊗
FLUSH HYDRANT	⊗FH

**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.

NO.	FOR ADOPTED REVIEW	REVISIONS
1	11-01-18	CWW
2		Date
3		By

**McGHEE ENGINEERING**  
 202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985

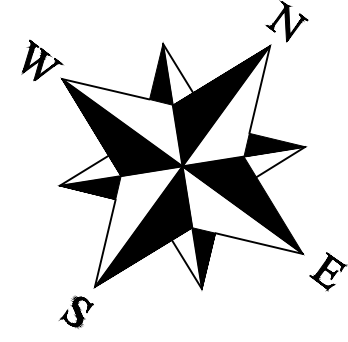
**TODD COUNTY WATER DISTRICT**  
 P.O. Box 520  
 Elkhorn, KY 42220  
 (270) 265-2229

FIRM: McGhee Engineering, Inc.  
 DES BY: CWW CHK BY: MWM  
 DWN BY: CWW APP BY:  
 SCALE: AS SHOWN  
 PROJECT DATE: November 2018  
 PRINTED:  
 LENGTH OF BAR IS 1"  
 ON ORIGINAL DRAWING

Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 2 - Water Storage Tank  
 Tank Site Layout Plan



November 1, 2018  
 CHRIS WILCOX  
 21627  
 Chris Wilcox, P.E.



(Novelis Industries Property)

(Novelis Industries Property)

20' UTILITY EASEMENT

~200' RIGHT-OF-WAY

**\*SPECIAL CONSTRUCTION NOTE\*** - IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE LOCAL POWER COMPANY TO SUPPLY SINGLE PHASE POWER TO THE TANK.

P/T

8

GUARD RAIL

US HIGHWAY 79 (24' ASPHALT)

**TANK PIPING PLAN**

SCALE: 1"=10'

A  
C-2

PROPOSED WATERLINE BY NOVELIS INDUSTRIES [LOCATION APPROXIMATE]

ALL BURIED DIP SHALL BE CONNECTED WITH MECHANICAL JOINTS WITH RESTRAINING GLANDS

12" SOLID SLEEVE CONNECT TO NOVELIS [VERIFY LOCATION]

SEE SHEET M-1 FOR INTERIOR PIPING PLAN

PROPOSED 15 LF 12" DRAIN CLASS 350 DIP @ 1.0%

PROPOSED 4 LF 12" CLASS III RCP @ 1.0%

RIP RAP LINE HEADWALL OUTLET, 10' MINIMUM

GRADE DITCH TO DRAIN

PROPOSED 24" FLAP VALVE NEENAH R-5050SF OR EQUAL w/ INSECT SCREEN

PROPOSED HEADWALL PER DETAIL E, SHEET C-3 PIPE INVERT = 567.50

PROPOSED 4' DIA. MANHOLE RIM ELEVATION = 570.00 INVERT ELEVATION = 568.00

PROPOSED 12' ACCESS ROAD PER DETAIL F, SHEET C-3

12" SOLID SLEEVE CONNECT TO EXISTING 12" DIP (BY OTHERS)

PROPOSED 12" CLASS 350 DIP [VERIFY LENGTH]

PROPOSED 12"x12" TEE w/ TEMPORARY PLUG & CAP [CONTRACT 1-BY OTHERS]

PROPOSED FLUSH HYDRANT, 6" VALVE, REDUCER & BOX [CONTRACT 1 - BY OTHERS]

PROPOSED 12" CLASS 350 DIP WATERLINE [CONTRACT 1-BY OTHERS]

PROPOSED 12" GATE VALVE [CONTRACT 1 - BY OTHERS]

NO.	FOR KDDW REVIEW	11-01-18	CWW	By
1				
2				
3				

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 Guthrie, KY 42234  
 (270) 483-9985

**TODD COUNTY WATER DISTRICT**  
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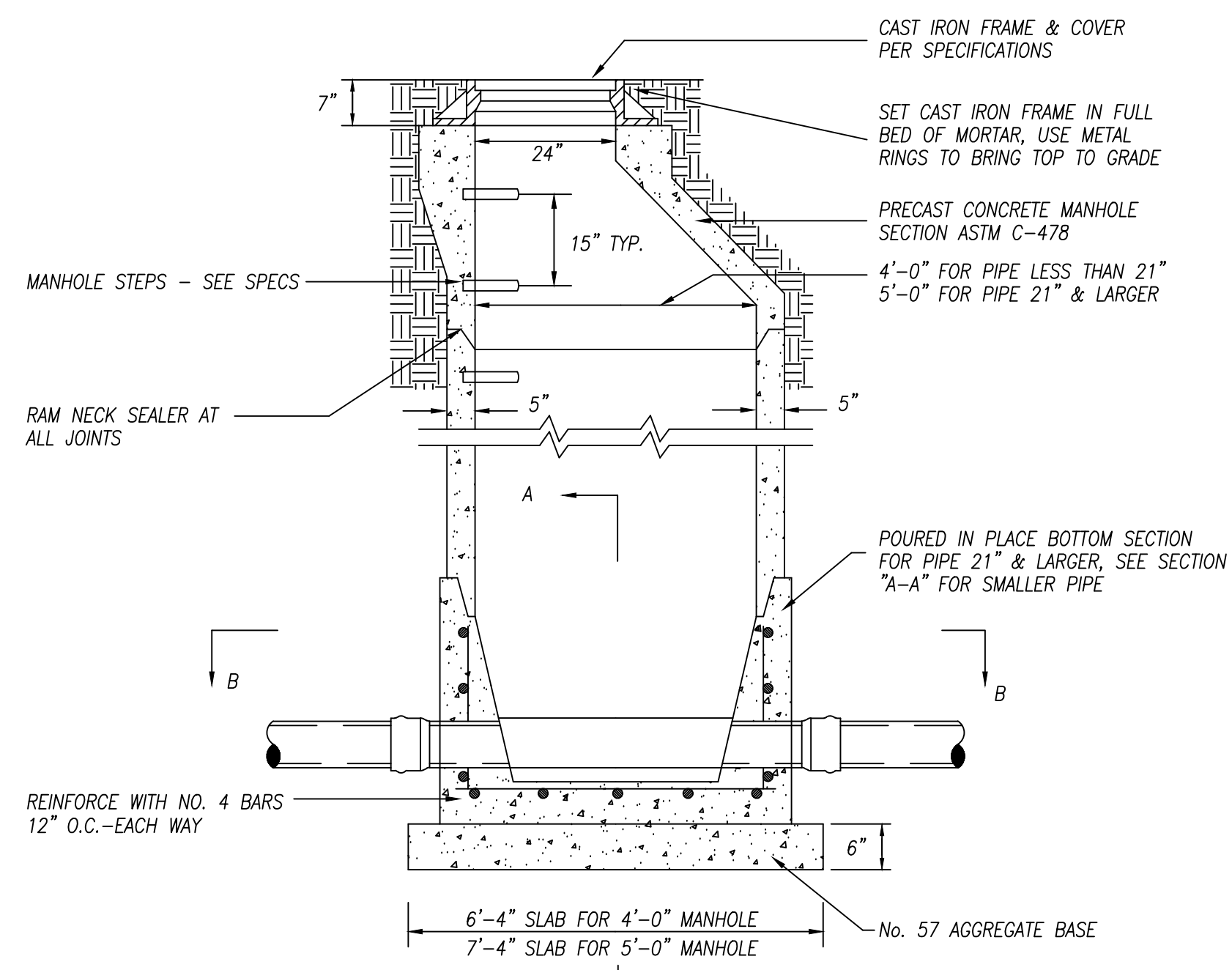
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Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 2 - Water Storage Tank  
 Tank Piping Plan



November 1, 2018  
 CHRIS WILCOX  
 21620  
 PROFESSIONAL ENGINEER  
 Chris Wilcox, P.E.

DRAWING NO.  
 SHEET C-2

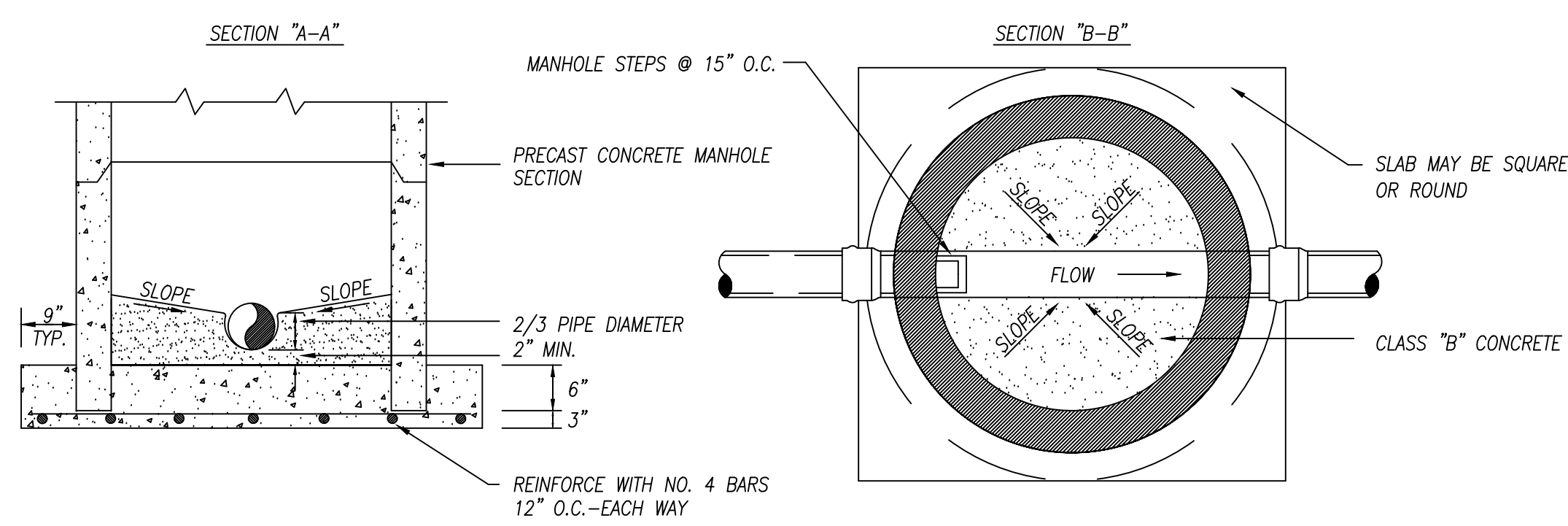


- NOTES
- THIS SECTION ALSO TYPICAL FOR DEVELOPED PRECAST BASE.
  - SEE DETAIL 2, THIS SHEET FOR REFERENCED SECTIONS.

**TYPICAL MANHOLE**

SCALE: NONE

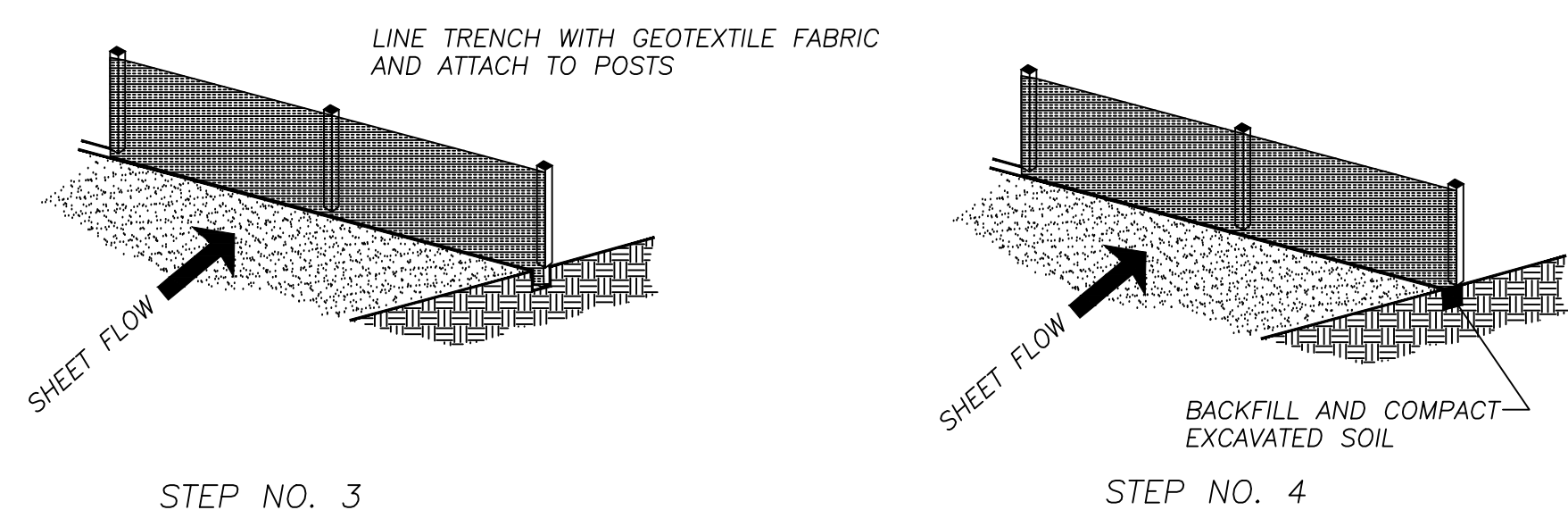
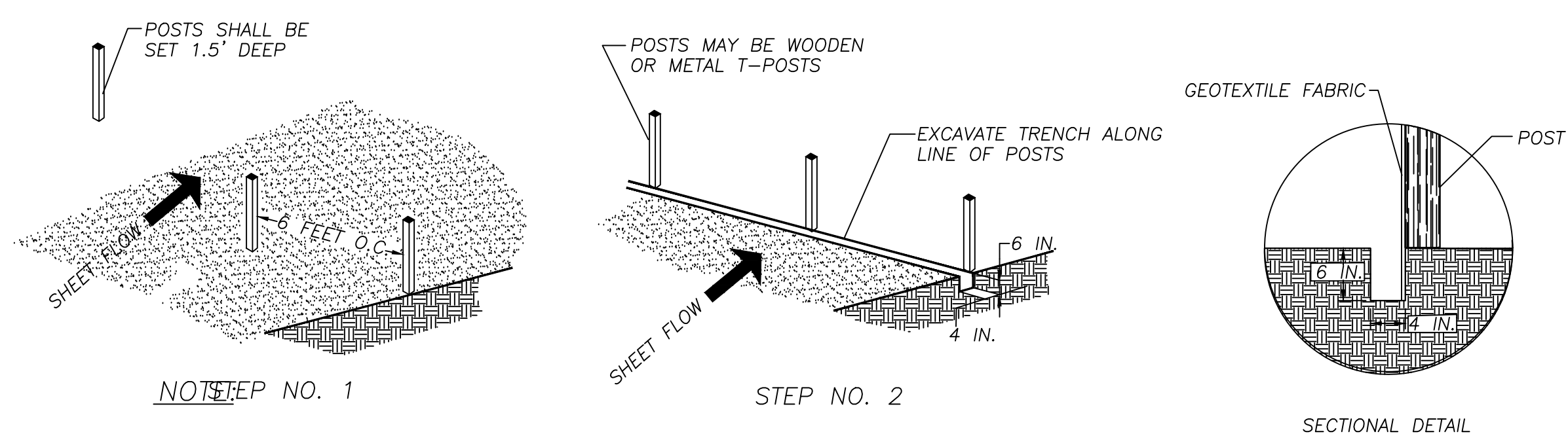
**A**  
C-3



**TYPICAL MANHOLE SECTIONS**

SCALE: NONE

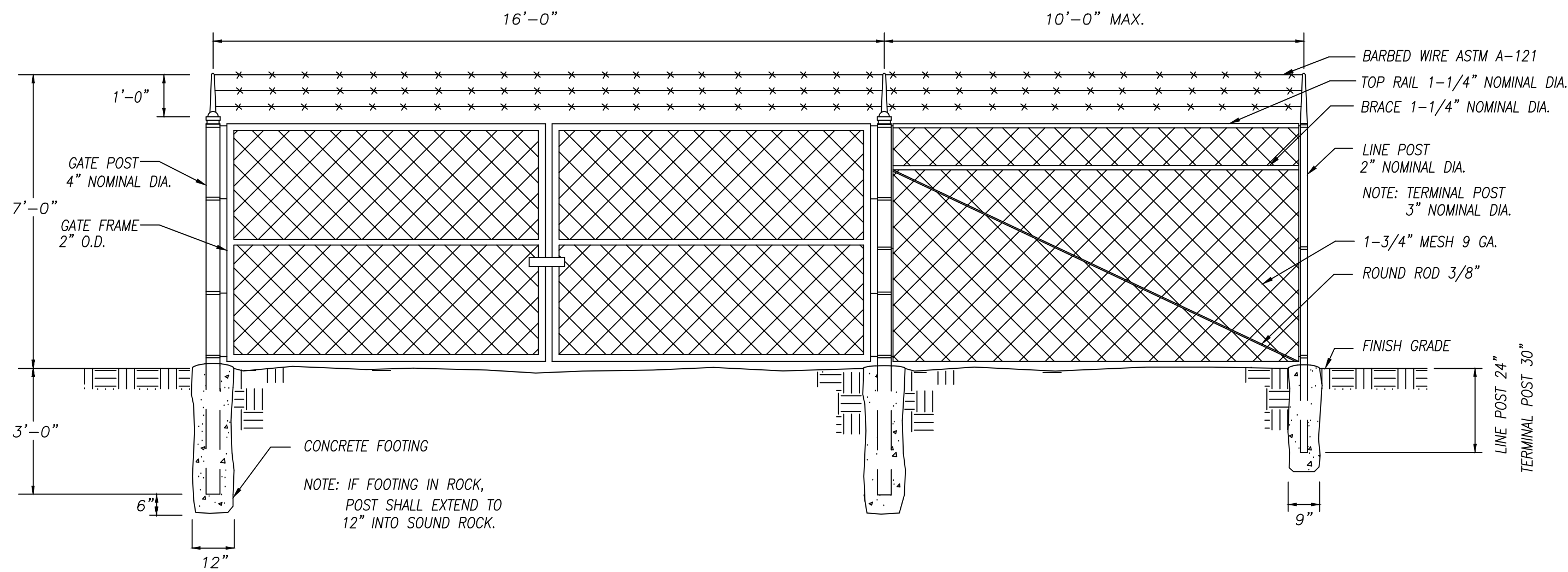
**B**  
C-3



**EROSION BARRIER DETAIL**

SCALE: NONE

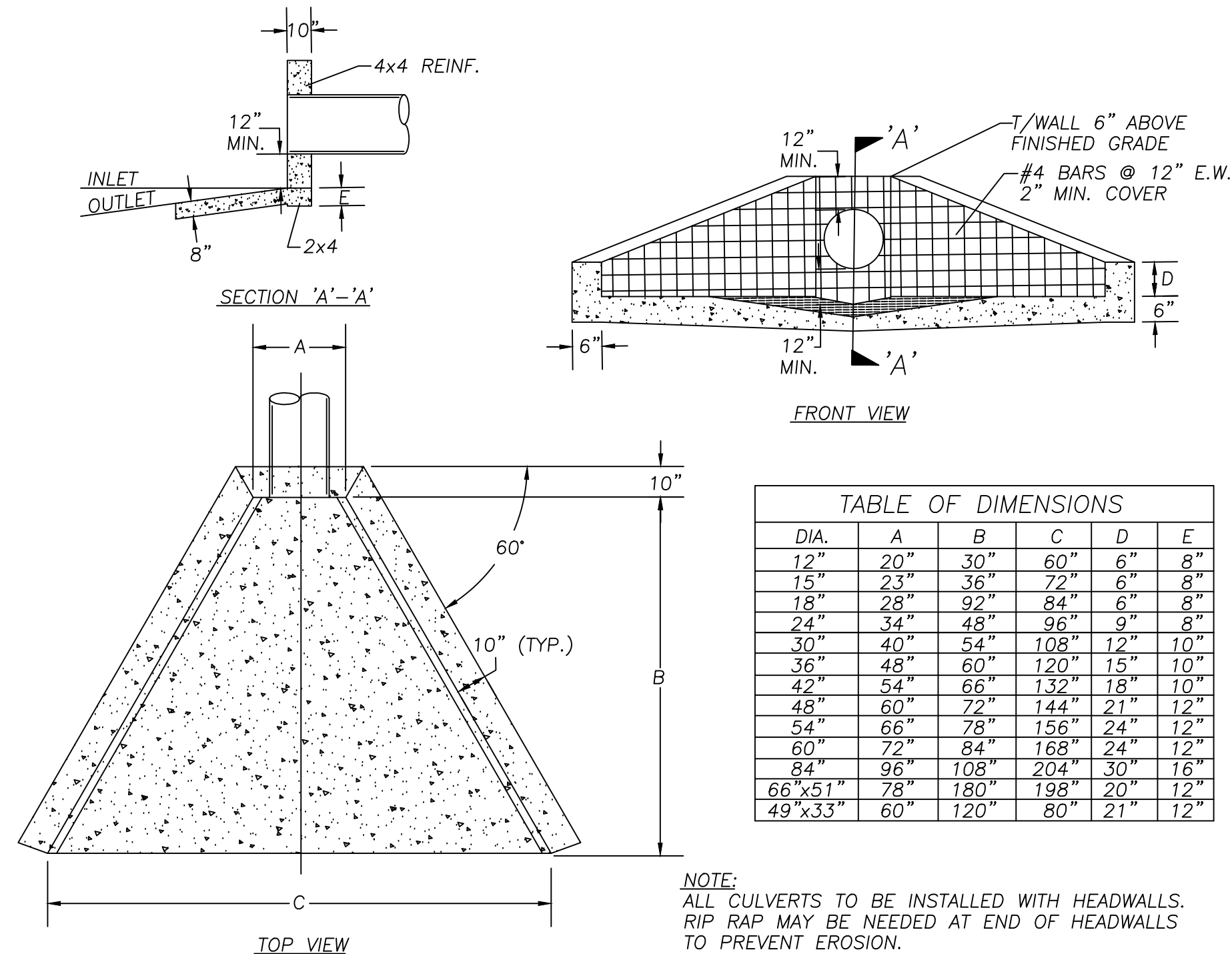
**C**  
C-3



**CHAIN LINK FENCE DETAIL**

SCALE: NONE

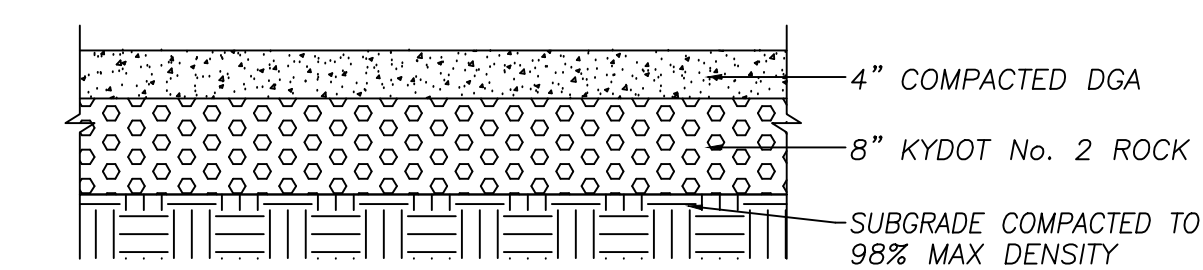
**D**  
C-3



**CONCRETE HEADWALL DETAIL**

SCALE: NONE

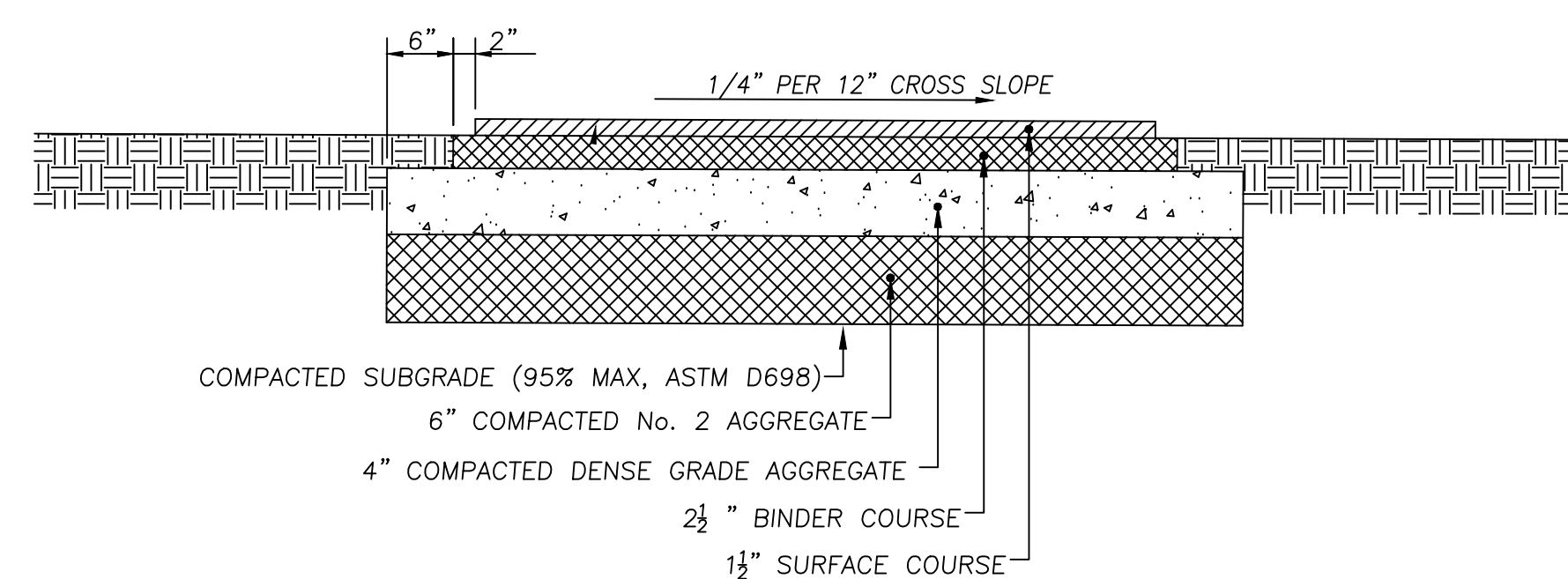
**E**  
C-3



**ACCESS ROAD DETAIL**

SCALE: NONE

**F**  
C-3



**ASPHALT PAVEMENT**

SCALE: NONE

**G**  
C-3

NO.	REVISION	DATE	BY
1	REVISED HEADWALL FOR ADOPTED REVIEW	11-01-18	CWW
2			

**McGHEE ENGINEERING**

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(270) 483-9985

**TODD COUNTY WATER DISTRICT**

P.O. Box 520  
Elkton, KY 42220  
(270) 265-2229

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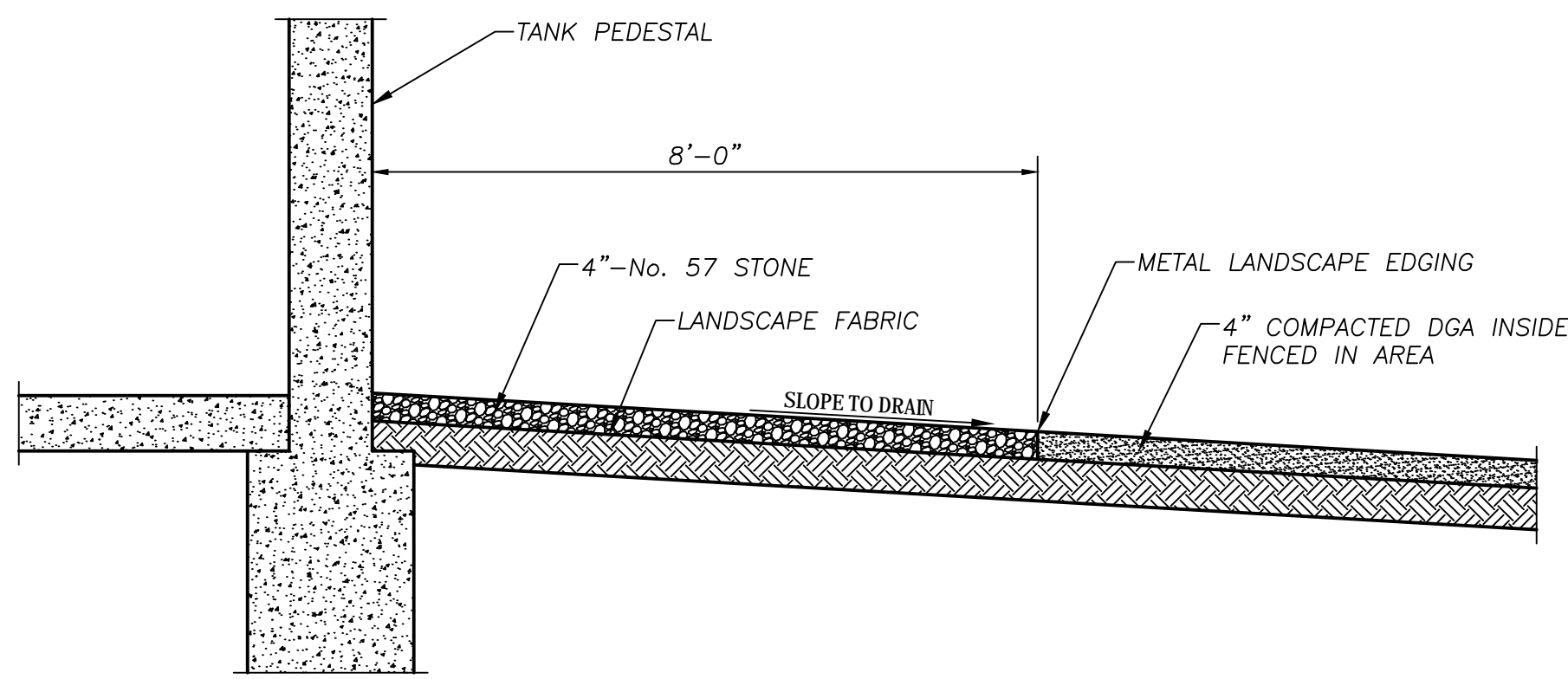
Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 2 - Water Storage Tank  
Civil Details



November 1, 2018

CHRIS WILCOX  
21625  
PROFESSIONAL ENGINEER

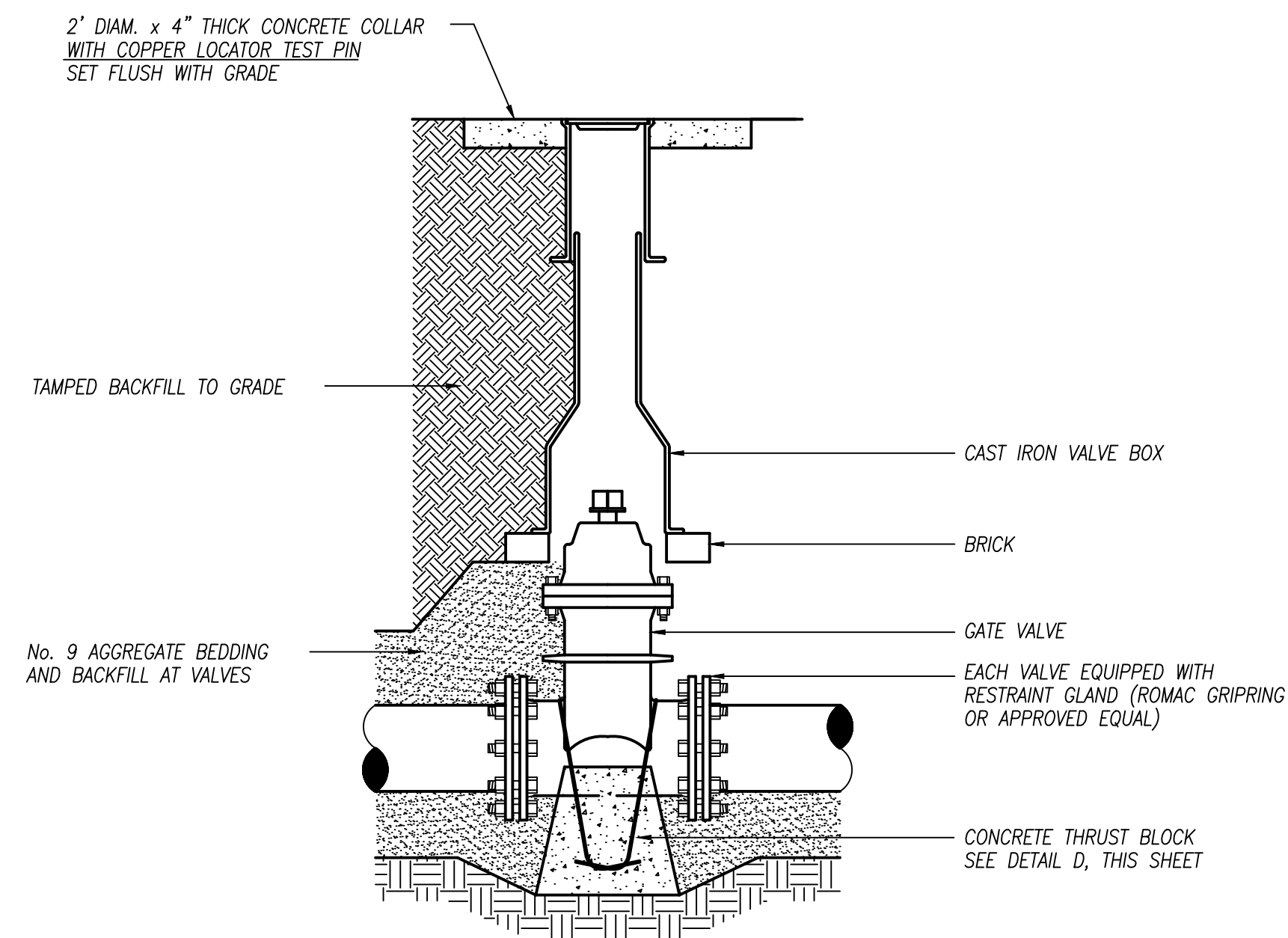
Chris Wilcox, P.E.



**LANDSCAPING DETAIL AT TANK**

SCALE: NONE

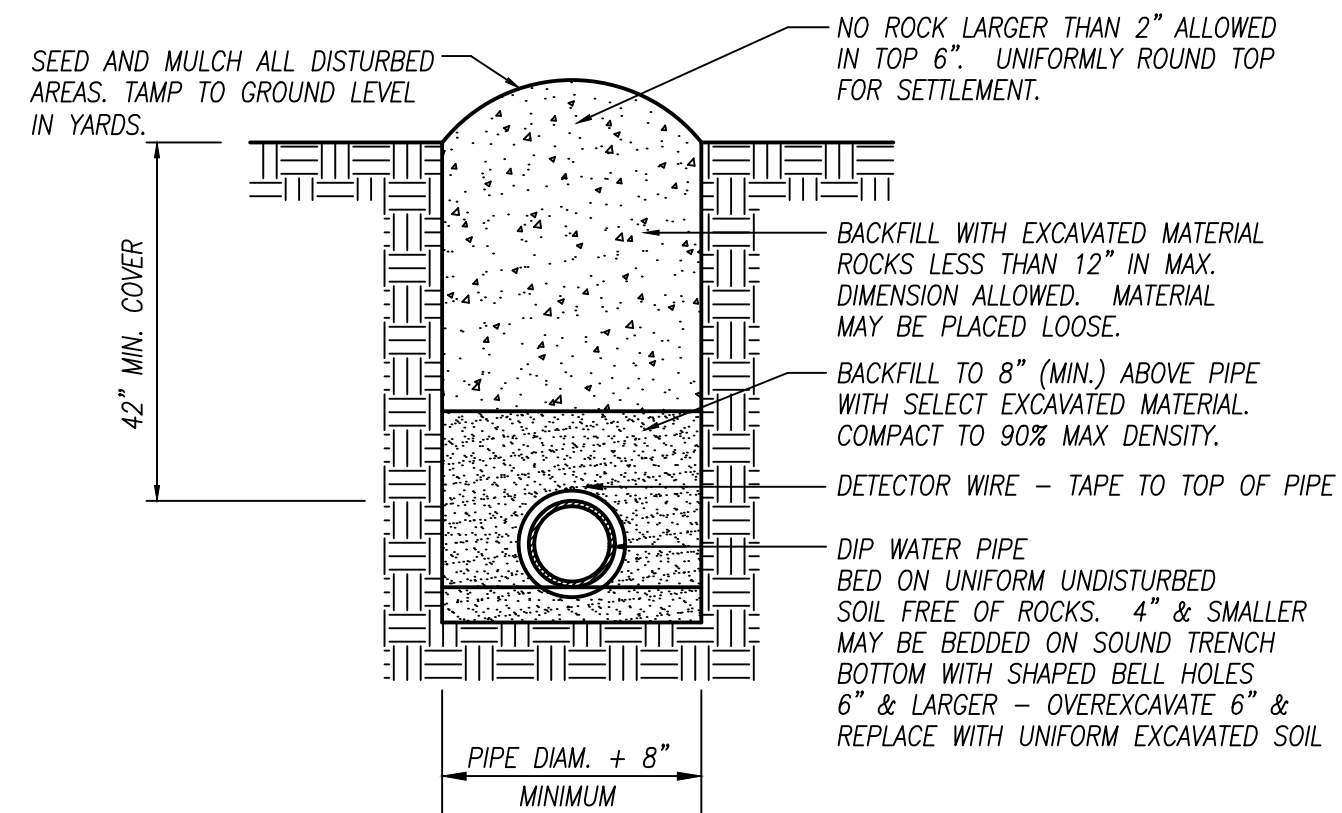
A  
C-4



**12" & SMALLER INSTALLS  
VALVE SETTING DETAIL**

SCALE: NONE

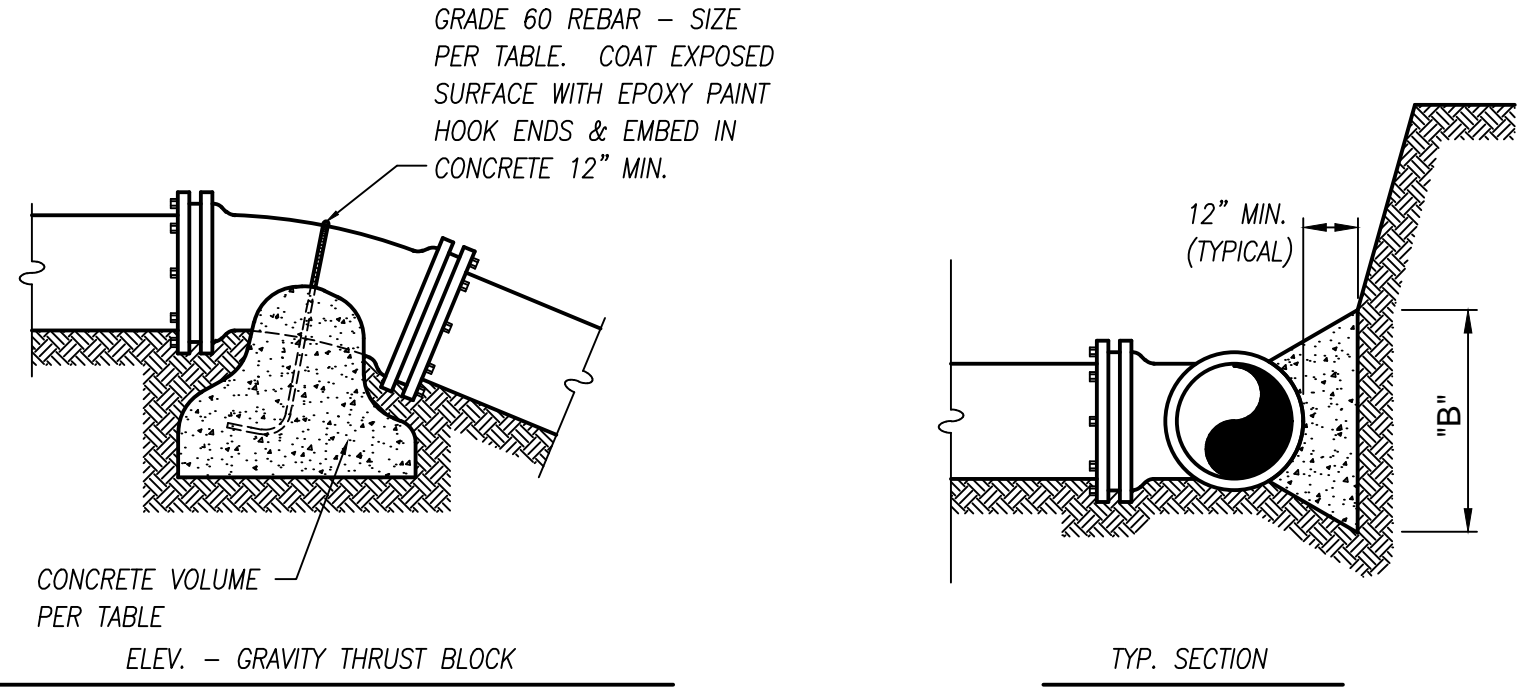
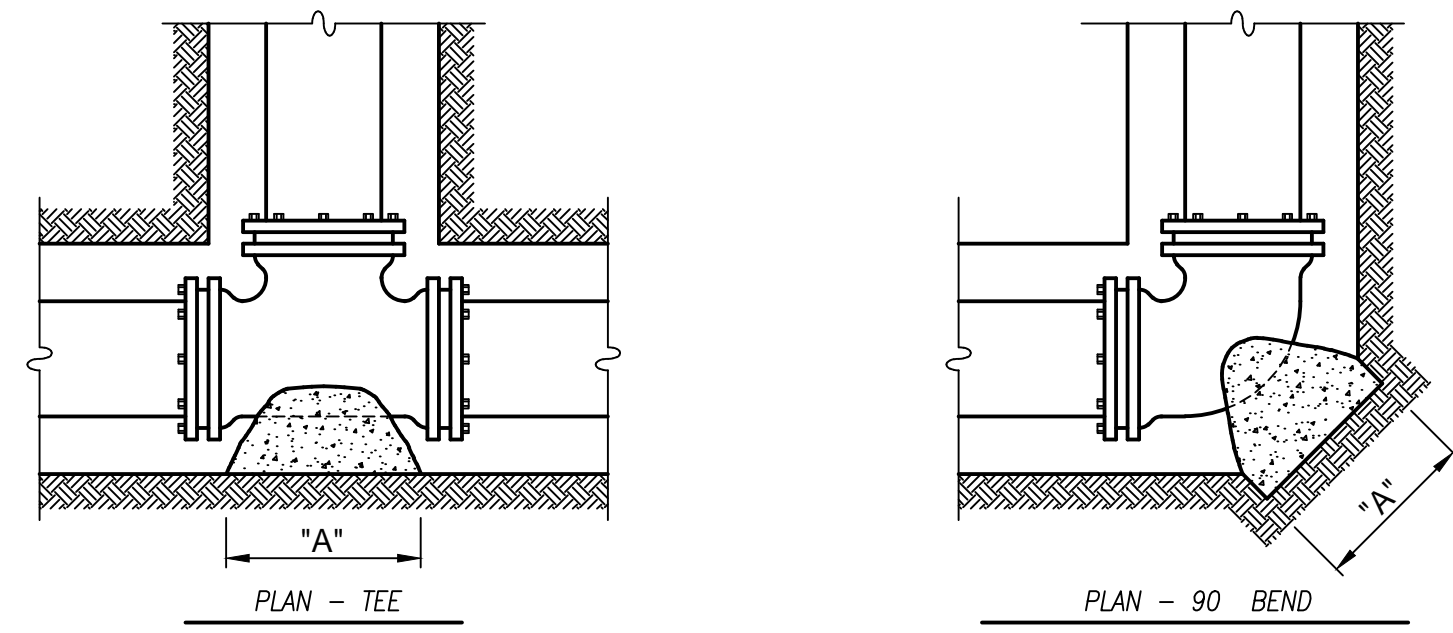
B  
C-4



**BEDDING & BACKFILL - SOIL**

SCALE: NONE

C  
C-4



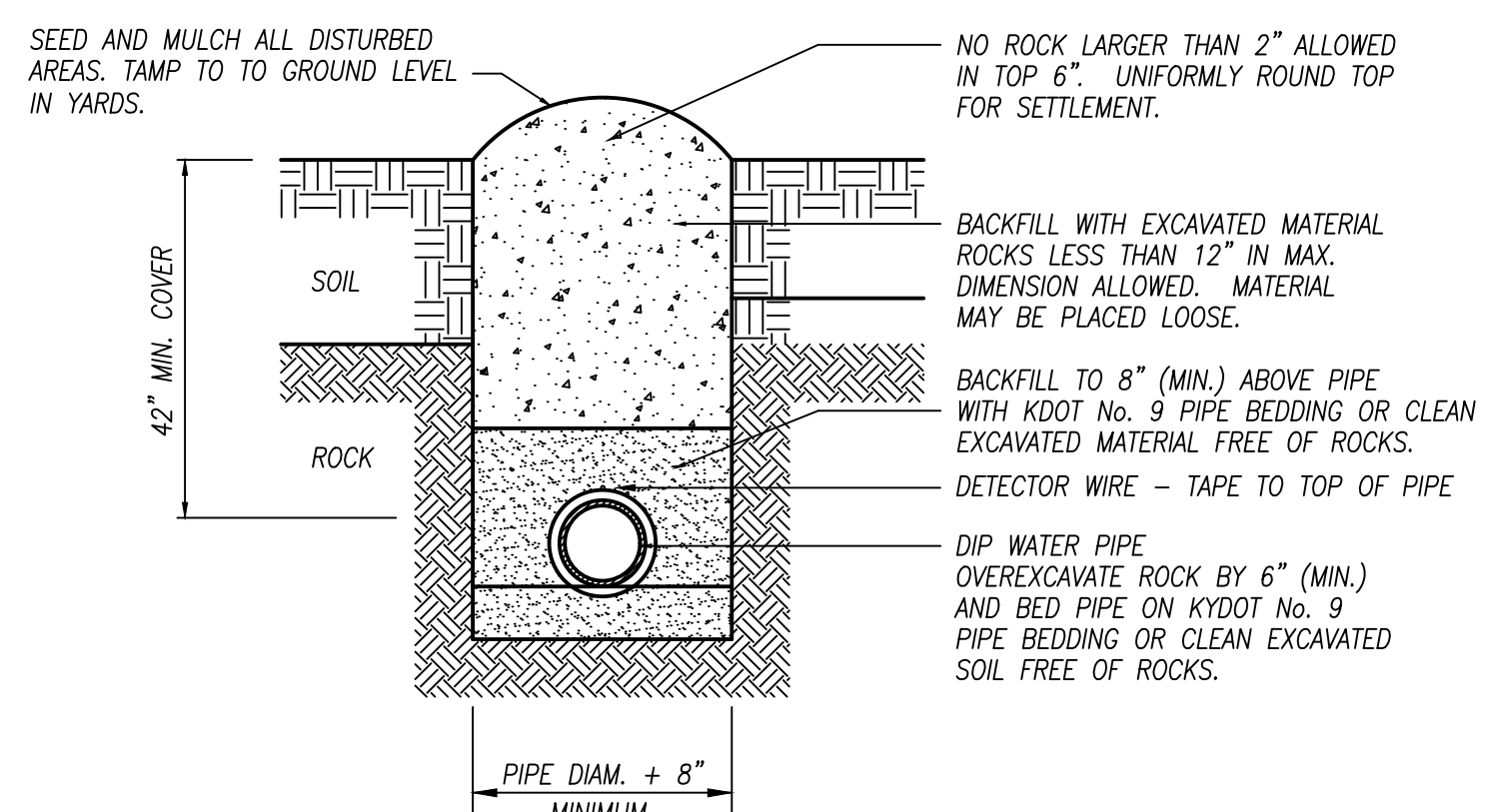
PIPE SIZE	MINIMUM BEARING AREA ("A"x"B") IN SQUARE FEET					MIN. CONC. VOLUME IN CUBIC FEET		REBAR SIZE
	TEE OR DEAD END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	ALL FTGS.	VALVES	
2", 3" & 4"	1	1	1	1	1	1	1	#4
6"	2	2	1	1	1	2	2	#4
8"	3	4	2	1	1	4	4	#5
10"	4	6	3	2	1	6	6	#5
12"	6	9	5	2	1	9	9	2-#5

- NOTES
- CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
  - KEEP CONCRETE CLEAR OF JOINTS, GLAND BOLTS, ETC.
  - CONCRETE THRUST BLOCKS SHALL BE CAST AGAINST SOUND, UNDISTURBED EARTH.
  - BEARING AREAS ARE BASED ON 4,000 PSF SOIL BEARING CAPACITY. WEAKER SOILS MAY REQUIRE LARGER THRUST BLOCKS.
  - THRUST BLOCK BEARING AREAS MAY BE REDUCED IN ROCK SUBJECT TO ENGINEER'S APPROVAL.
  - WHERE CONTRACTOR SUSPECTS THAT UNSUITABLE BEARING CONDITIONS EXIST, NOTIFY ENGINEER PRIOR TO CASTING THRUST BLOCK.
  - THRUST BLOCKS ARE REQUIRED AT ALL BURIED FITTINGS UNLESS RESTRAINING GLANDS OR ANOTHER METHOD OF MECHANICAL JOINT RESTRAINT IS PROVIDED. WHERE MECHANICAL JOINT RESTRAINT AND THRUST BLOCKS ARE SHOWN IN DETAILS, BOTH SHALL BE PROVIDED.

**THRUST BLOCKS**

SCALE: NONE

D  
C-4



**BEDDING & BACKFILL - ROCK**

SCALE: NONE

E  
C-4

NO.	FOR ADOPT REVIEW	REVISION	DATE	BY
1			11-01-18	CWW

**TODD COUNTY WATER DISTRICT**

**MCGHEE ENGINEERING**

202 Ewing Street  
Guthrie, KY 42234  
(270) 483-9985

P.O. Box 520  
Elkton, KY 42220  
(270) 265-2229

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DES BY: CWW CHK BY: MWM  
DWN BY: CWW APP BY:  
SCALE: AS SHOWN  
PROJECT DATE: November 2018  
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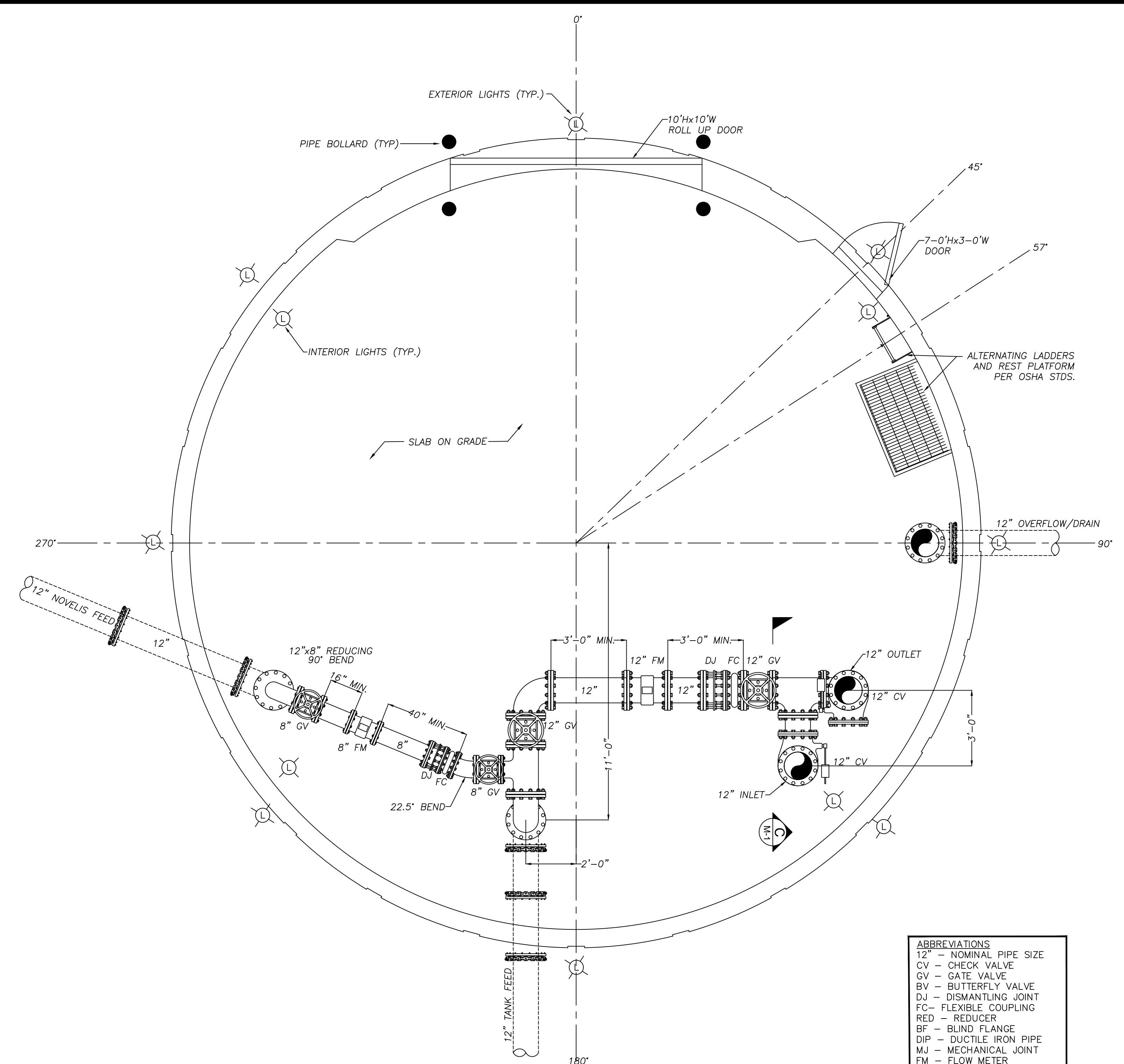
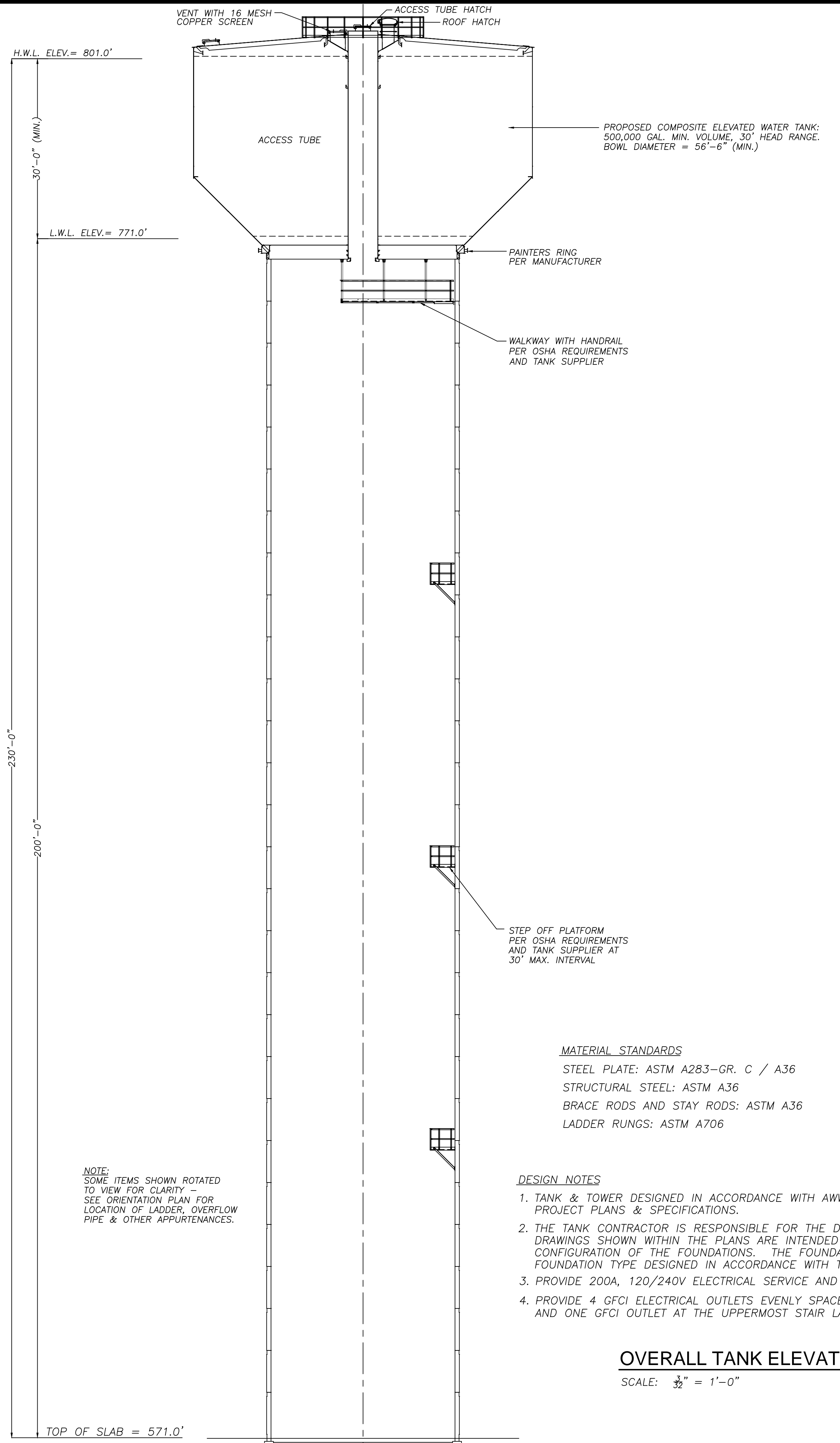
Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 2 - Water Storage Tank  
Civil Details



November 1, 2018

CHRIS WILCOX  
21626

Chris Wilcox, P.E.



**MATERIAL STANDARDS**  
 STEEL PLATE: ASTM A283-GR. C / A36  
 STRUCTURAL STEEL: ASTM A36  
 BRACE RODS AND STAY RODS: ASTM A36  
 LADDER RUNGS: ASTM A706

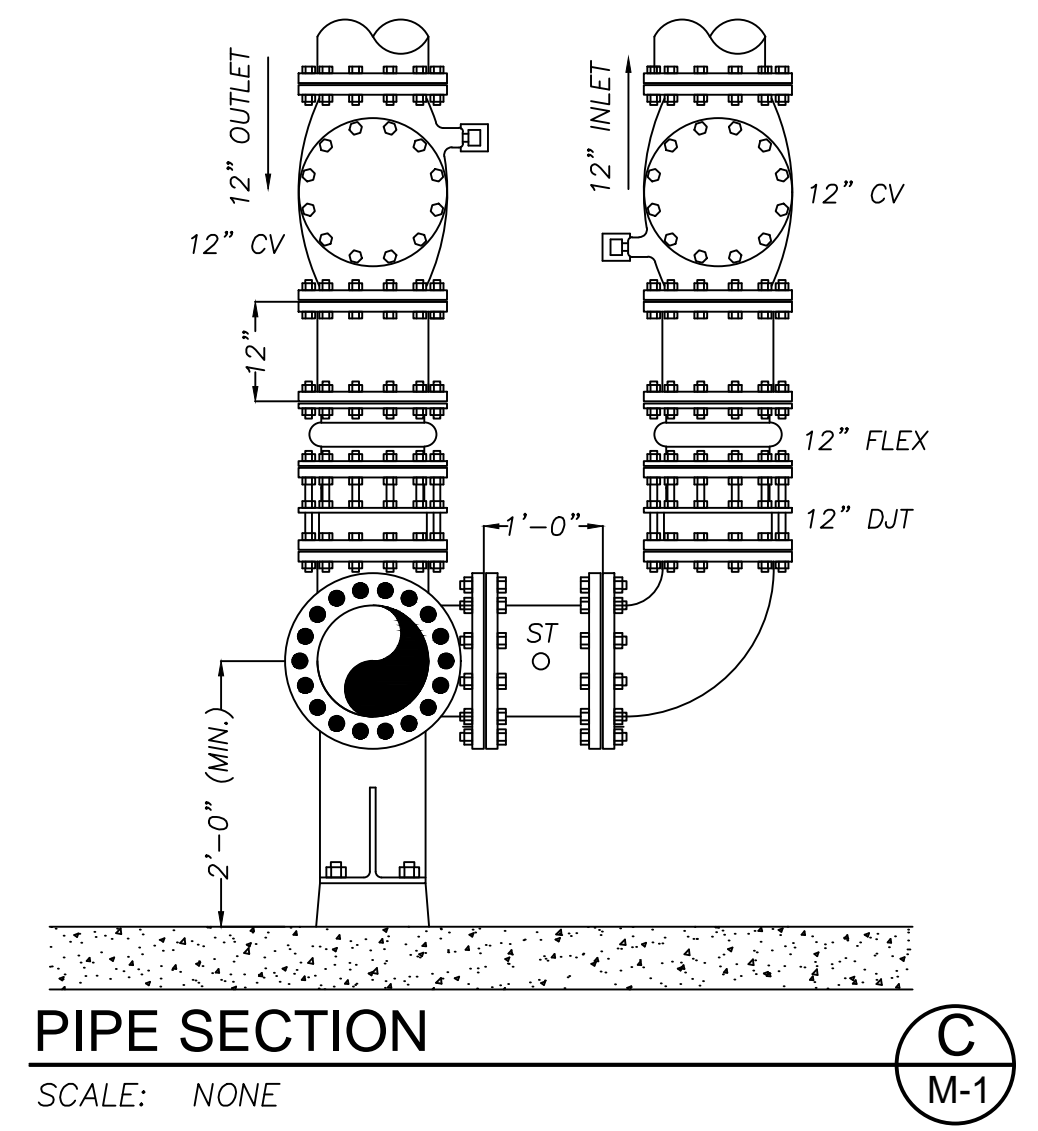
- DESIGN NOTES**
1. TANK & TOWER DESIGNED IN ACCORDANCE WITH AWWA D107-16 AND THE PROJECT PLANS & SPECIFICATIONS.
  2. THE TANK CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE TANK FOUNDATIONS. DRAWINGS SHOWN WITHIN THE PLANS ARE INTENDED TO INDICATE THE GENERAL CONFIGURATION OF THE FOUNDATIONS. THE FOUNDATIONS SHALL BE OF THE DEEP FOUNDATION TYPE DESIGNED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
  3. PROVIDE 200A, 120/240V ELECTRICAL SERVICE AND PANEL.
  4. PROVIDE 4 GFCI ELECTRICAL OUTLETS EVENLY SPACED AROUND TANK PERIMETER AND ONE GFCI OUTLET AT THE UPPERMOST STAIR LANDING.

**OVERALL TANK ELEVATION**  
 SCALE:  $\frac{3}{32}'' = 1'-0''$

**TANK BASE FLOOR PLAN**  
 SCALE:  $\frac{8}{32}'' = 1'-0''$

**ABBREVIATIONS**

12"	NOMINAL PIPE SIZE
CV	CHECK VALVE
GV	GATE VALVE
BV	BUTTERFLY VALVE
DJ	DISMANTLING JOINT
FC	FLEXIBLE COUPLING
RED	REDUCER
BF	BLIND FLANGE
DIP	DUCTILE IRON PIPE
MJ	MECHANICAL JOINT
FM	FLOW METER
ST	SAMPLE TAP
PTT	PRESSURE TRANS TAP



No.	FOR KDDW REVIEW	Revision	Date	By
1			11-01-18	CWW

REVISIONS

**McGHEE ENGINEERING**  
 202 Ewing Street  
 Guthrie, KY 42234  
 (270) 483-9985

**Todd County Water District**  
 P.O. Box 520  
 Elktion, KY 42220  
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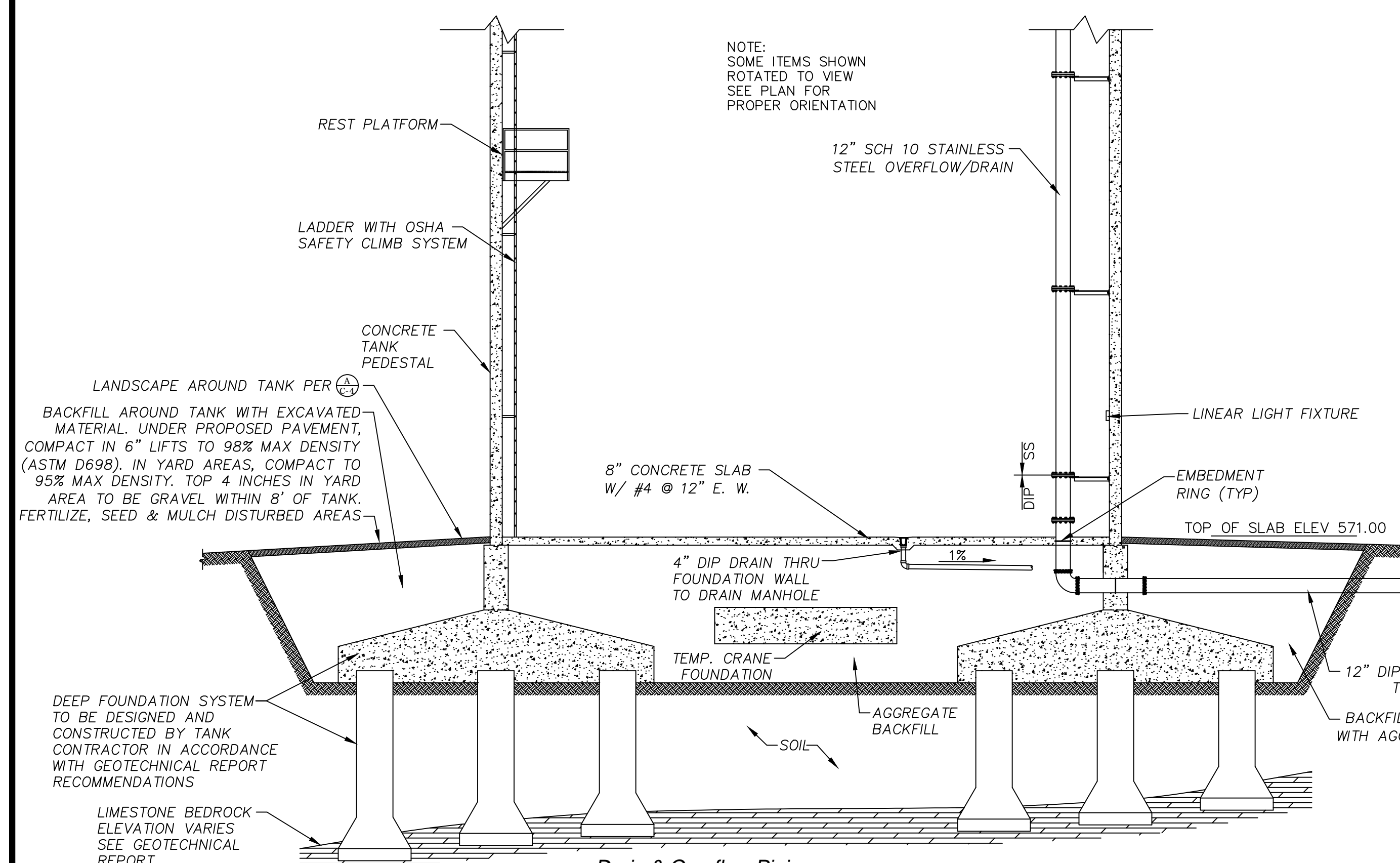
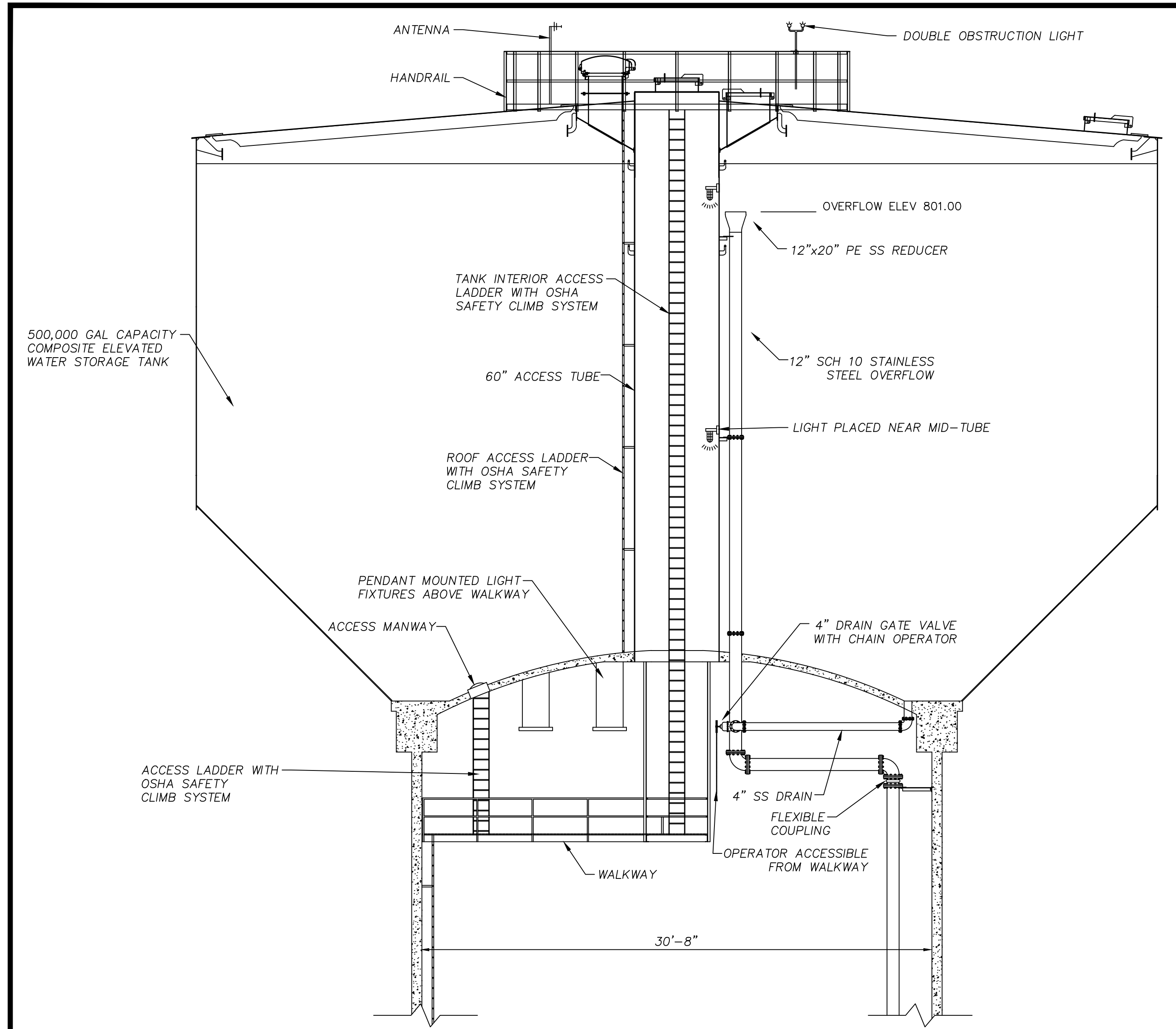
**Todd County Water District**  
**NOVELIS WATER SUPPLY PROJECT**  
 Contract 2 - Water Storage Tank  
 Tank Base Floor Plan & Overall Elevation



November 1, 2018

STATE OF KENTUCKY  
 CHRIS WILCUTT  
 21523  
 PROFESSIONAL ENGINEER

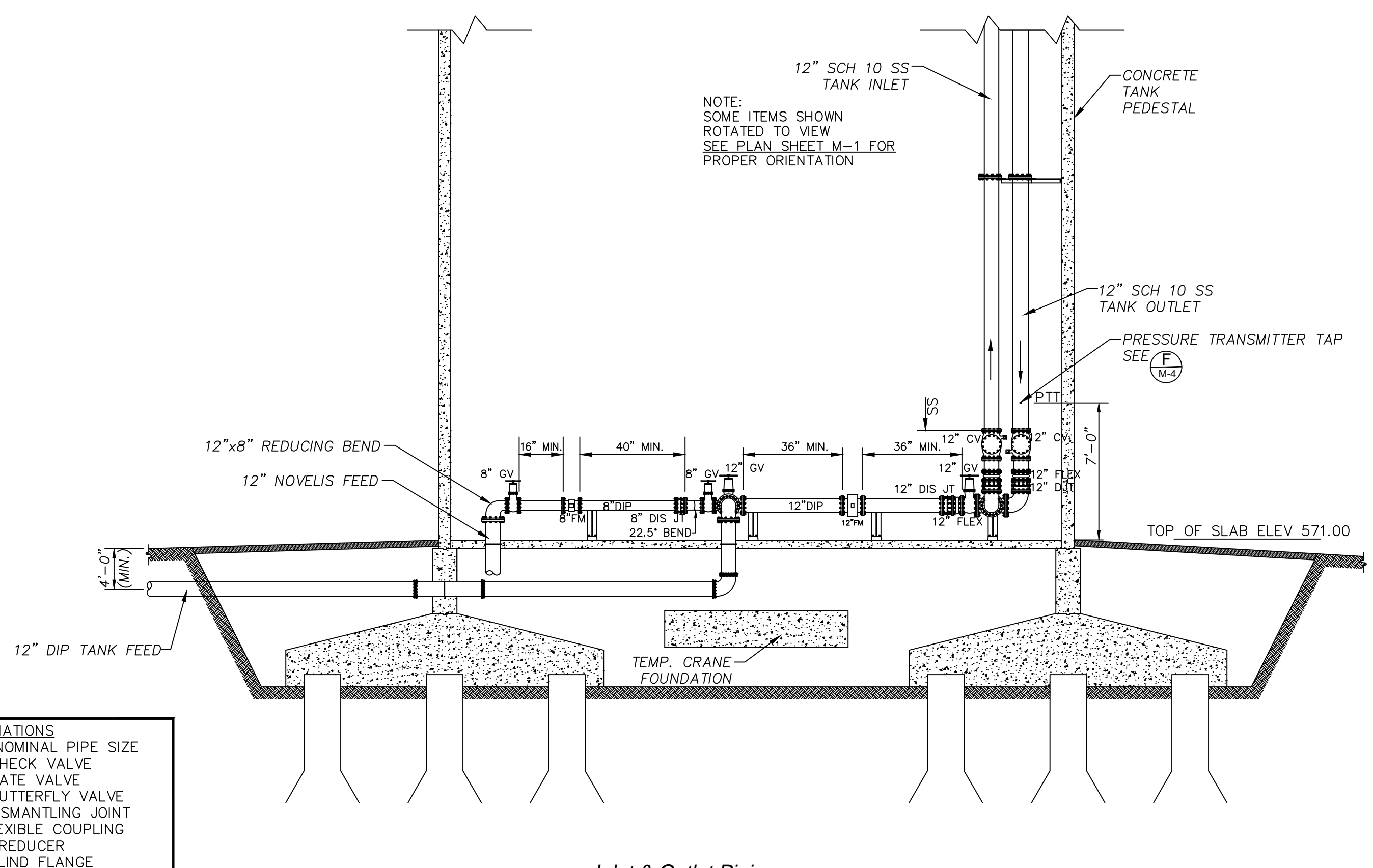
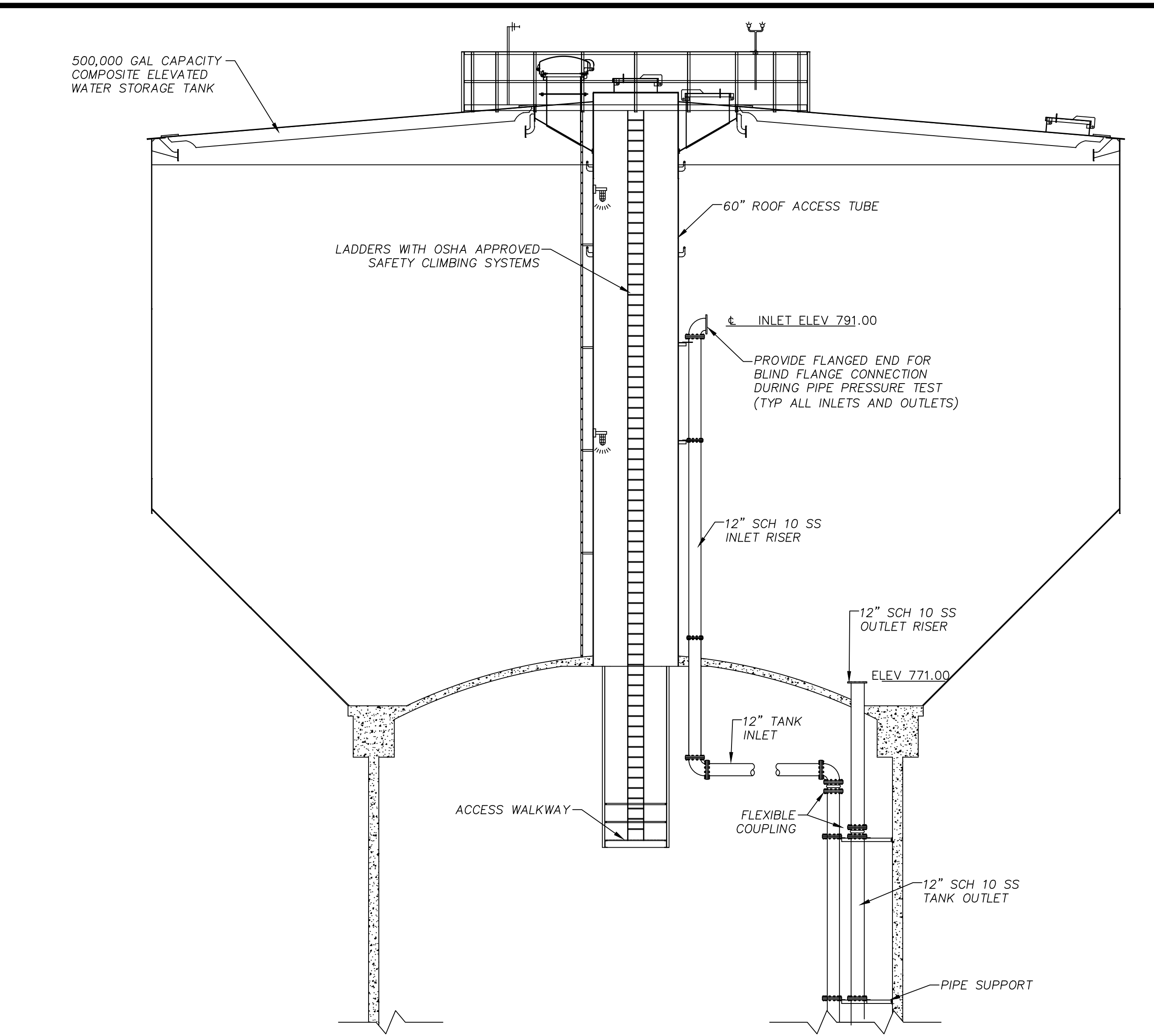
Chris Wilcutt, P.E.



**Drain & Overflow Piping**  
**TANK ELEVATION SECTION A**  
 SCALE: NONE

**ABBREVIATIONS**

- 12" - NOMINAL PIPE SIZE
- CV - CHECK VALVE
- GV - GATE VALVE
- BV - BUTTERFLY VALVE
- DJ - DISMANTLING JOINT
- FC - FLEXIBLE COUPLING
- RED - REDUCER
- BF - BLIND FLANGE
- DIP - DUCTILE IRON PIPE
- MJ - MECHANICAL JOINT
- FM - FLOW METER
- ST - SAMPLE TAP
- PTT - PRESSURE TRANS TAP



**Inlet & Outlet Piping**  
**TANK ELEVATION SECTION B**  
 SCALE: NONE

NO.	FOR KDW REVIEW	REVISION	DATE	BY
1			11-01-18	CWW

**MCGHEE TODD COUNTY**  
 ENGINEERING WATER DISTRICT

202 Ewing Street  
 Guthrie, KY 42234  
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Todd County Water District  
 NOVELIS WATER SUPPLY PROJECT  
 Contract 2 - Water Storage Tank  
 Tank Elevation Sections

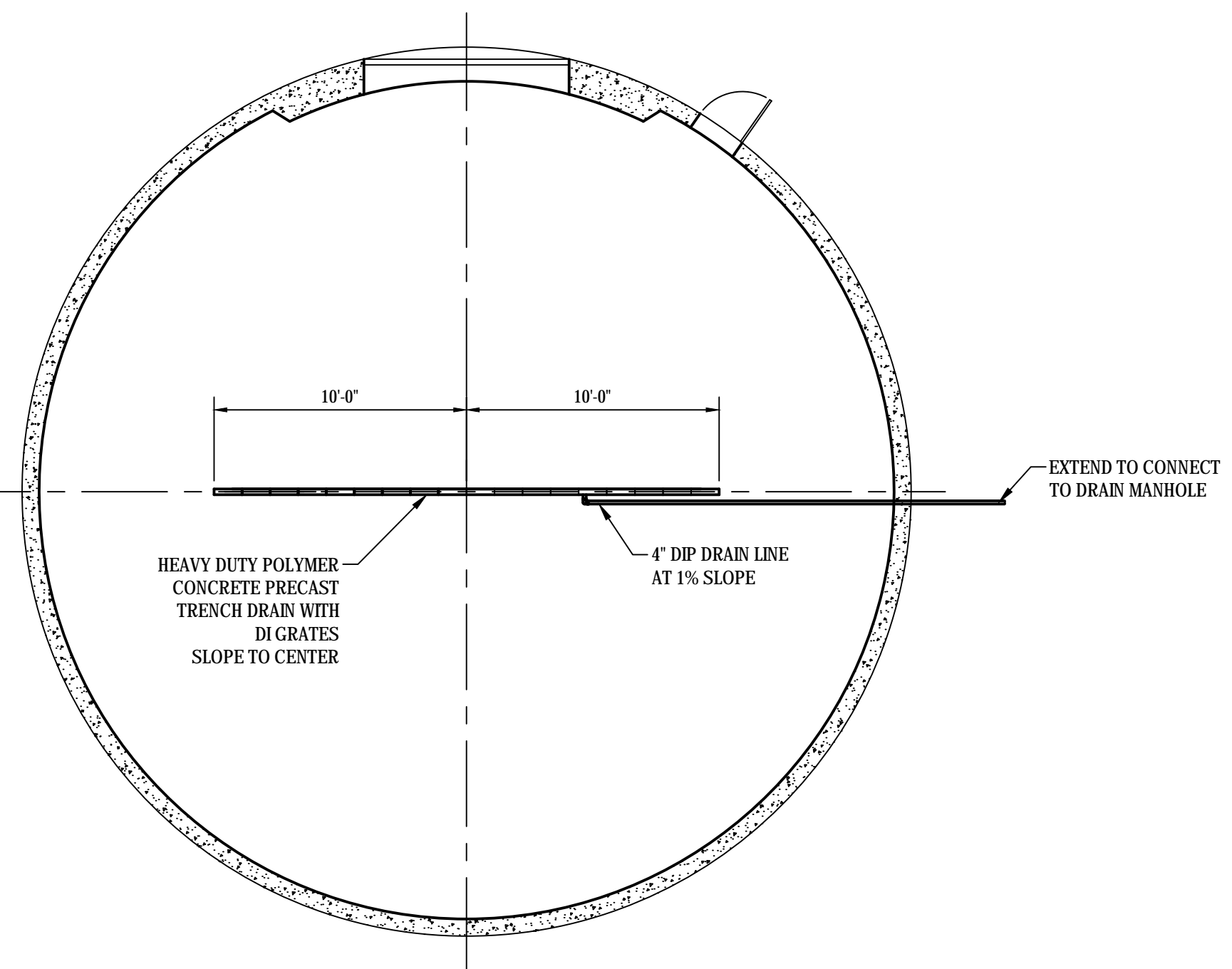


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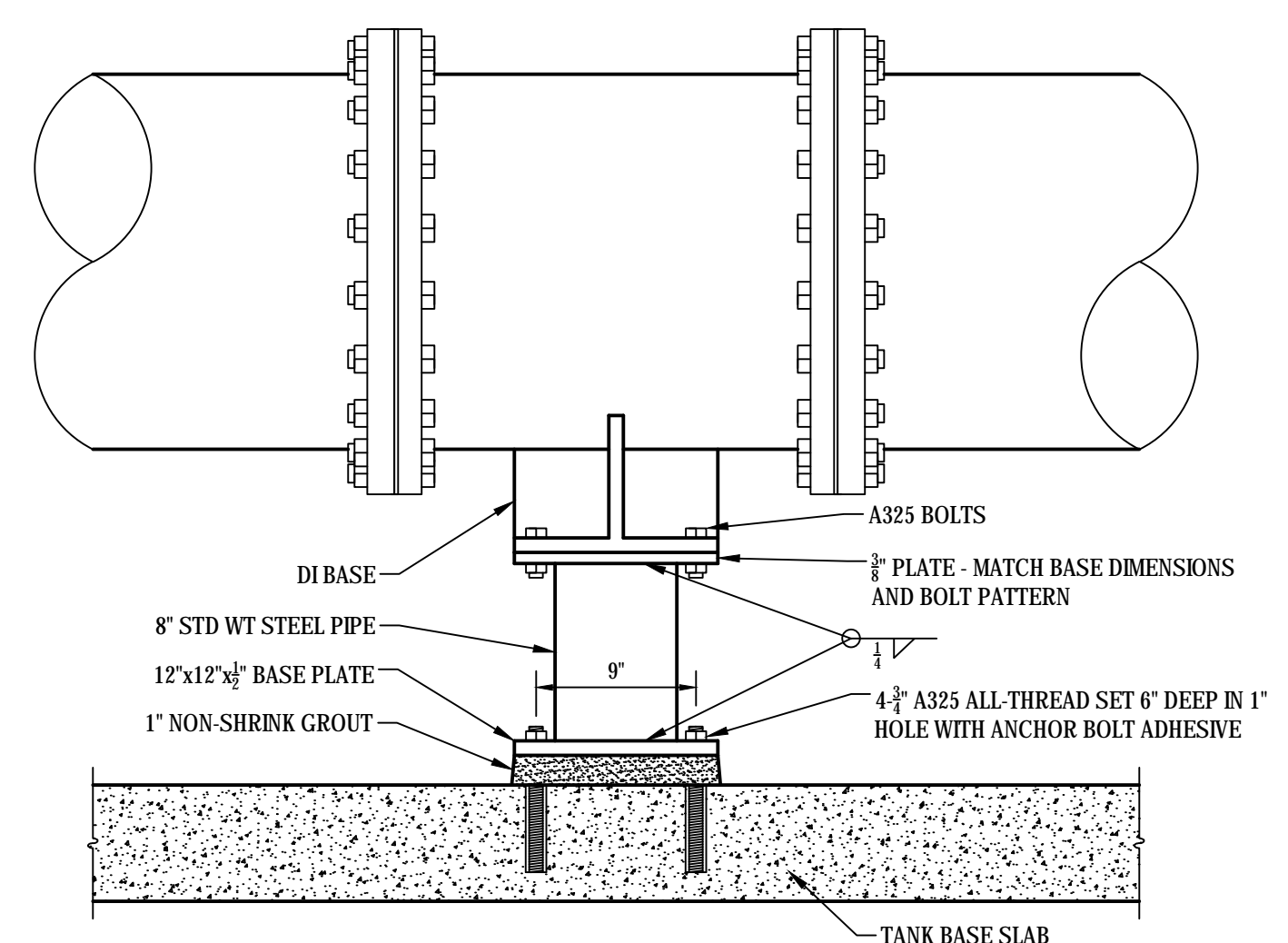
CHRIS WILCOX  
 21655  
 PROFESSIONAL ENGINEER

Chris Wilcox, P.E.

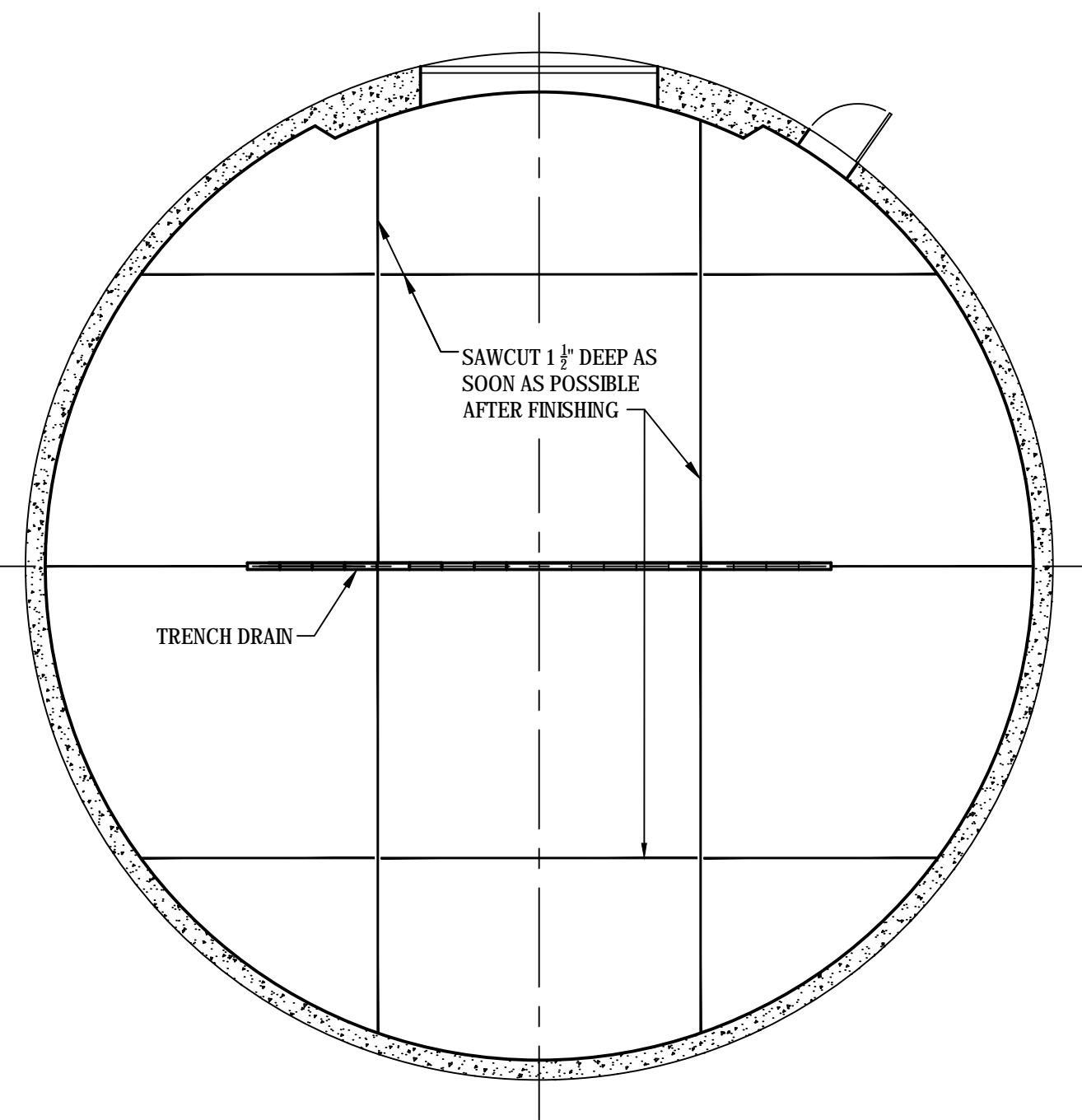




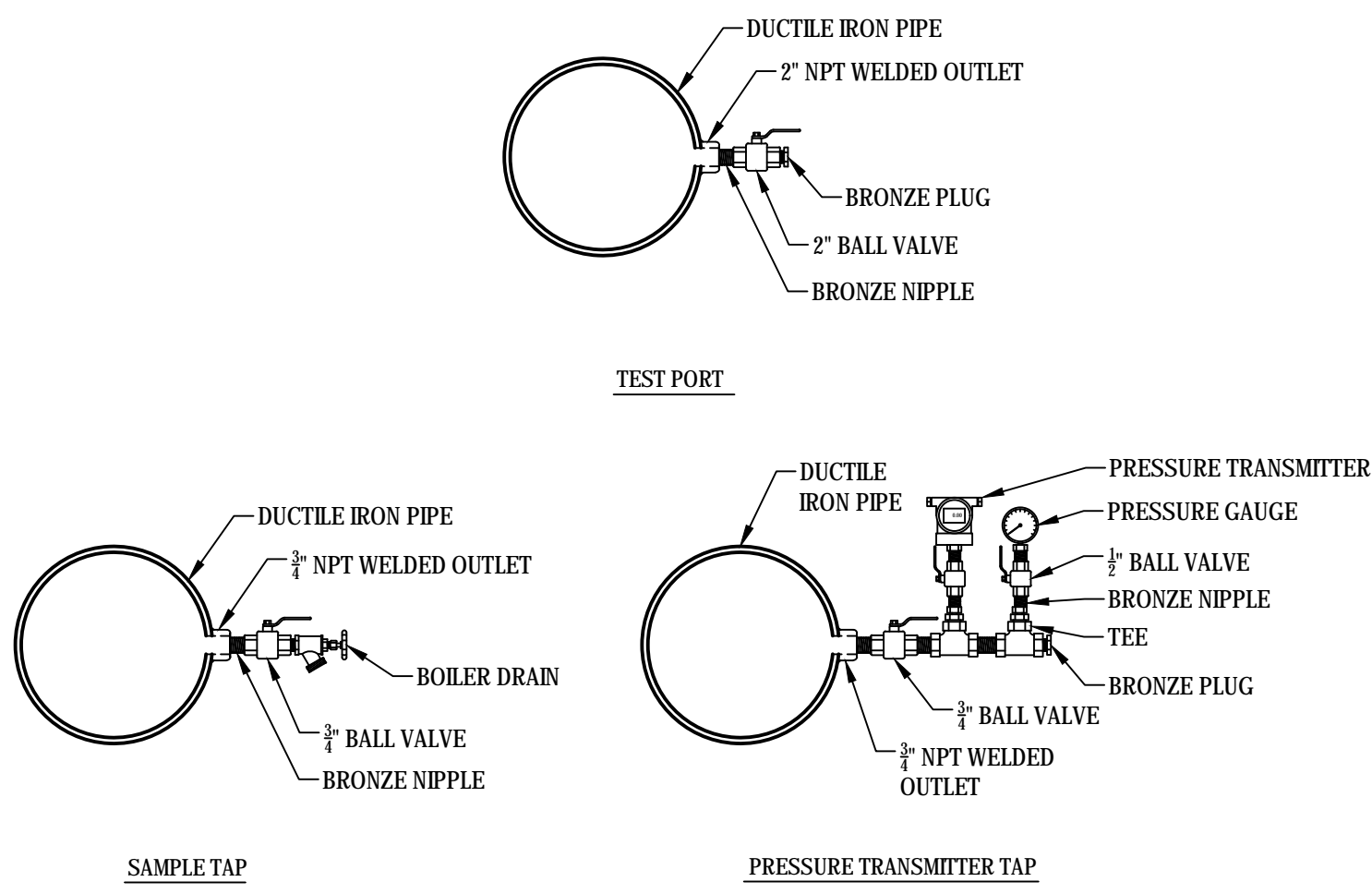
**TRENCH DRAIN LAYOUT**  
SCALE: NONE



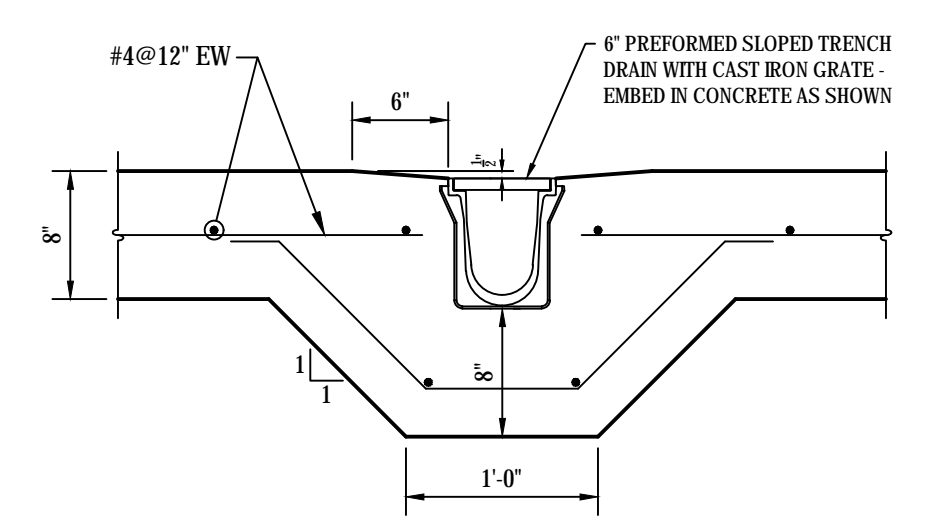
**PIPE SUPPORT DETAIL**  
SCALE: NONE



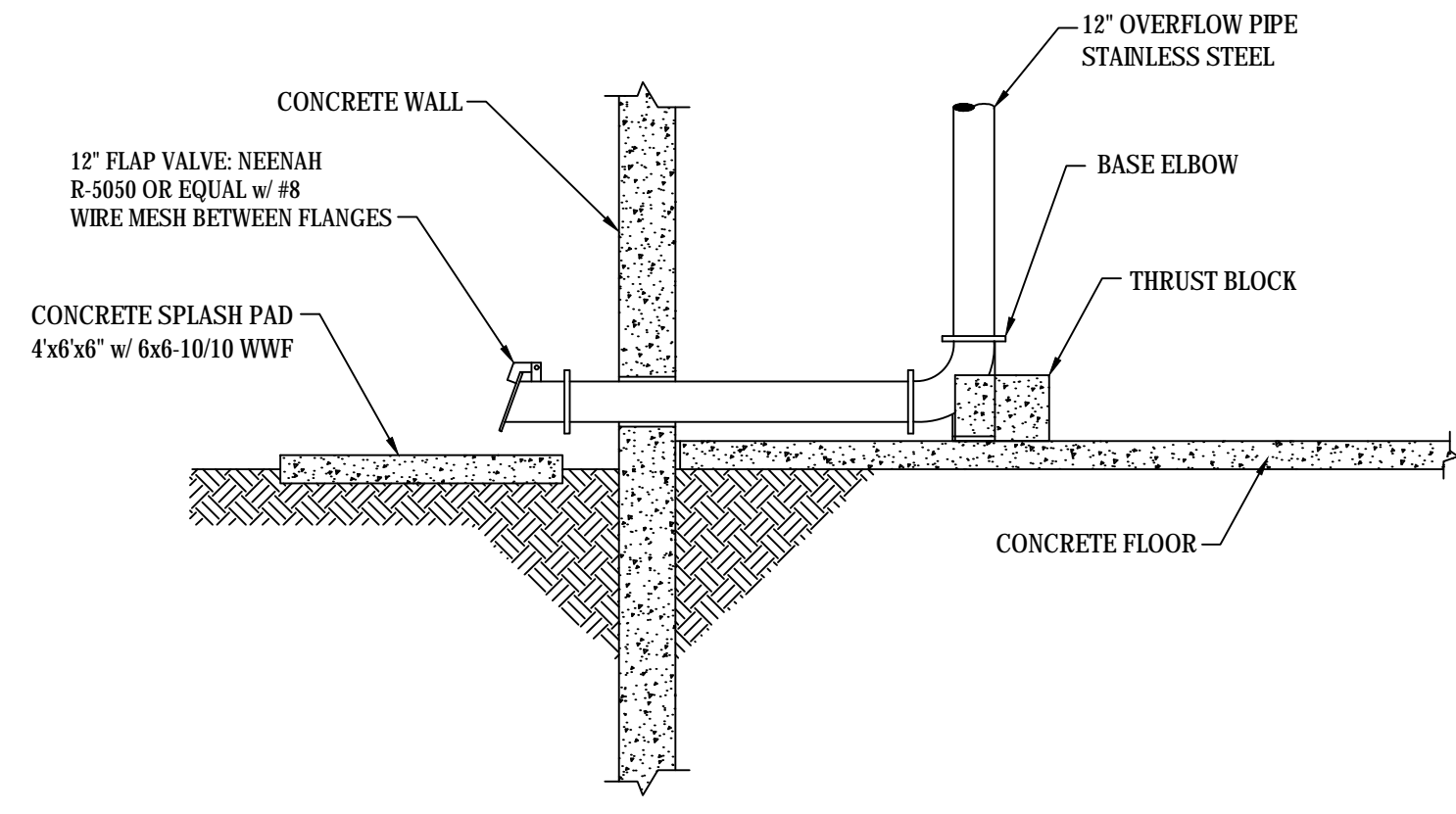
**SLAB SAWCUT PLAN**  
SCALE: NONE



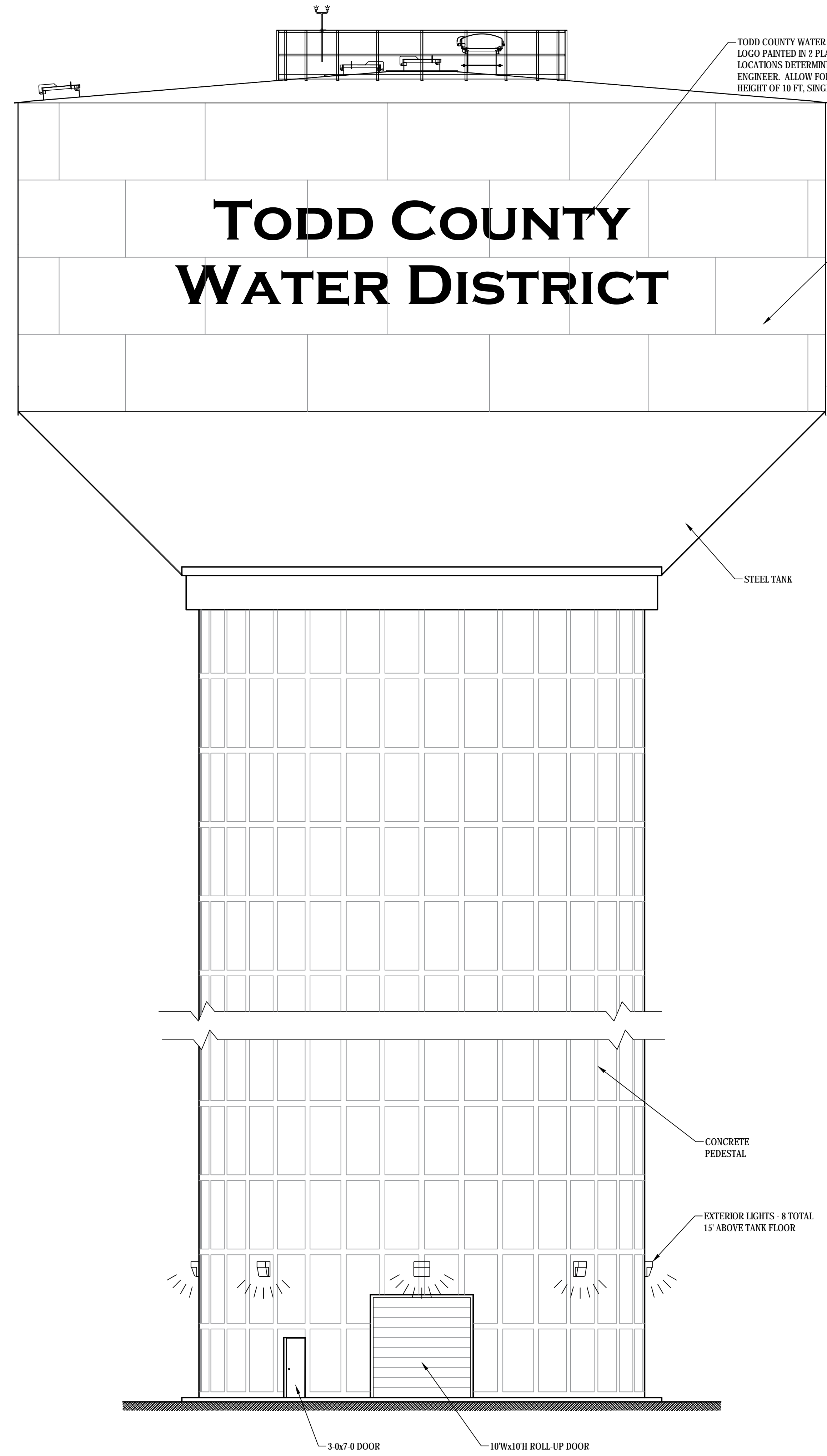
**PIPE TAP DETAILS**  
SCALE: NONE



**TRENCH DRAIN SECTION**  
SCALE: NONE



**OVERFLOW PIPE DETAIL**  
SCALE: NONE



**Exterior View TANK ELEVATION SECTION**  
SCALE: NONE

TODD COUNTY WATER DISTRICT LOGO PAINTED IN 2 PLACES ON TANK AT LOCATIONS DETERMINED IN FIELD BY THE ENGINEER. ALLOW FOR OVERALL LOGO HEIGHT OF 10 FT. SINGLE COLOR.

ALL CARBON STEEL TANK COMPONENTS TO BE COATED PER SPECIFICATIONS

NO.	REVISIONS	DATE	BY
1	FOR ADOPT REVIEW	11-01-18	CWW

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TODD COUNTY WATER DISTRICT  
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Todd County Water District  
NOVELIS WATER SUPPLY PROJECT  
Contract 2 - Water Storage Tank  
Tank Details & Section



November 1, 2018  
CHRIS WILCOX  
21653  
Chris Wilcox, P.E.