COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF OLDHAM COUNTY WATER DISTRICT FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AND FINANCING APPROVAL FOR THE U.S. 42 WATER LINE EXTENSION FROM KY 1694 TO KY 393	)))))))	**CASE NO. 2026-00314**

VERIFIED APPLICATION

Pursuant to KRS 278.020(1), KRS 278.300, and 807 KAR 5:001, Oldham County Water District. ("Oldham District" or the "District") applies to the Public Service Commission ("Commission") for an Order **within 60 days** of the date of this Application authorizing the District to execute an Assistance Agreement with the Kentucky Infrastructure Authority ("KIA") to borrow an amount not to exceed **$6,129,061** and granting the District a certificate of public convenience and necessity ("CPCN") for the U.S. 42 Water Line Extension from KY 1694 to KY 393 Project ("U.S. 42 Project" or the "Project"), which consists of constructing approximately 16,600 linear feet ("LF") of 12-inch HDPE water main and all necessary appurtenances within the southern right-of-way of U.S. 42 between KY 1694 and KY 393 in Oldham County, Kentucky. The Bids to construct the Project

expire on January 1, 2027. In support of its Application,[1] the District provides the following:

A. General Information

1. Oldham District's full name and mailing address are: Oldham County Water District, P.O. Box 51, Buckner, KY 40010. Its street address is 2160 Spencer Court, LaGrange, KY 40031. Its web address is: www.oldhamcountywaterky.gov and its electronic mail address is ocwd@oldhamcountywaterky.gov.

2. Copies of all orders, pleadings and other communications related to this proceeding[2] should be directed to:

Russell D. Rose, CEO
P.O. Box 51
Buckner, KY 40010
(502) 222-1690
rrose@oldhamcountywaterky.gov

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[1] To facilitate the Commission's initial review of this Application, Oldham District has attached to this Application **Exhibit 1,** a "Filings Requirements List" that consists of four pages, lists each statutory and regulatory requirement for an application for a certificate of public convenience and necessity and authorization to issue evidence of indebtedness and identifies the exhibit or paragraph that satisfies the requirement.

[2] On October 26, 2026, pursuant to 807 KAR 5:001, Section 8, Oldham District notified the Commission of its election of the use of electronic filing procedures for this proceeding.

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3. Oldham District is not a corporation, limited liability company or limited partnership.

4. Oldham District is a water district created under the provisions of KRS Chapter 74 by the Oldham County Fiscal Court.

5. As of December 31, 2025, Oldham District provided retail water service to approximately 8,684 residential and 681 commercial customers in Oldham County, Kentucky, as well as providing wholesale water service to the City of LaGrange, Kentucky.[3]

6. Oldham District is engaged in the production, transmission, distribution and sale of water. The District owns and operates a ground water treatment plant, 5 pumping stations, 13 water storage tanks, and approximately 372 miles of water mains.

[3] *Annual Report of Oldham County Water District to the Kentucky Public Service Commission for the Year-Ended December 31, 2025* ("2025 Annual Report") at 12, 49, and 56.

7. Oldham District's Board of Commissioners adopted a Resolution authorizing the District's CEO to prepare, verify, sign, and submit this Application. A copy of the Resolution is attached as **Exhibit 2**.

B. The U.S. 42 Water Line Extension from KY 1694 to KY 393 Project

8. **Overview of the Project and Estimated Cost to Construct.** The **total estimated cost to construct** the Project, including contingency, is **$6,129,061.** The as-bid project budget is located on the final page of **Exhibit 3**, the Final Engineering Report. The Project consists of constructing approximately 16,600 LF of 12-inch HDPE water main and all necessary appurtenances within the southern right-of-way of U.S. 42 between Kentucky Highway 1694 and Kentucky Highway 393 ("KY 1694 to KY 393") to improve redundancy, provide fire protection, and increase pressure for customers in the area.

C. Location of the Project and Need for Project

9. The project location is in the western portion of Oldham County, north of Interstate 71. A map depicting the location of the proposed water line is attached as **Exhibit 4**. An overview of the alignment of the proposed line superimposed onto a satellite photo of the area appears in Figure 3, of **Exhibit 5**, the Preliminary Engineering Report, and on the front cover of **Exhibit 3**, the Final Engineering Report. This area is currently served by a 6-inch water main and approximately 400 current customer connections are dependent on this area of the distribution system.

These customer connections are primarily located in several residential subdivisions as seen on **Exhibit 4**. It is reasonably expected that additional residential growth will occur in this area. Many people who work in Jefferson County choose to live in Oldham County, for this reason there is a demand for residential development within the District's service area.

10. The amount of water that can be conveyed through the U.S. 42 area is limited by the 6-inch water main. This is of particular concern at times of high demand. Eliminating this constraint on available capacity is a priority for Oldham District. The existing configuration also provides limited flexibility when portions of the system need to be temporarily taken out of service for maintenance, repairs, or in emergency situations. Currently service interruptions cannot be avoided when repairs need to be made to the existing line. The Project will improve service to all customers north of Harrods Creek and west of the District's Liberty Lane Water Storage Tank, which is marked with a pink dot on **Exhibit 4**.

11. The Project has been designed to address existing capacity and hydraulic limitations, improve the availability of fire protection, and provide system redundancy. These are important goals to Oldham District because the community has demonstrated a need for additional capacity and the availability of fire protection. As the Commission is aware, the Buckeye Trace Homeowners

Association ("Association") requested intervention in the District's last rate case.[4] As explained in the Association's September 14, 2023 request, Buckeye Trace is a subdivision in the western region of Oldham County. Buckeye Trace and other housing developments in the area have insufficient flow to provide fire protection. In 2020 there was a fatal fire in Buckeye Trace. The tragedy drew the community's attention to the need to increase capacity and water flow in the area. A copy of the Association's letter to the Commission is attached as **Exhibit 6**. Buckeye Trace and other residential developments in the Project location ae marked with orange diamonds on **Exhibit 4**.

12. Oldham District's consulting engineers, GRW Engineering ("GRW"), conducted a study and recommended certain projects to increase flow and capacity and provide redundancy to this area of the system. Buckeye Trace referenced this engineering study in its request for intervention. It was filed into the "Public Comments" folder of Case No. 2023-00252 and is attached to this Application as **Exhibit 6**. Oldham District has constructed some of the smaller projects recommended by GRW using grant funds. The District is now prepared to construct the KY 1694 to KY 393 water main extension. A copy of the Project's final Plans, Specifications and Drawings that have been signed and stamped by the District's engineer is filed at **Exhibit 7**.

[4] *Electronic Application of Oldham County Water District for an Alternative Rate Adjustment,* Case No. 2023-00252, Order rejecting request's filing because it was not filed by counsel (Ky. PSC Sep. 25, 2023).

13. The existing 6-inch water main will remain in service following construction of the proposed 12-inch main. The existing 6-inch main and proposed 12-inch main will be interconnected at multiple locations, creating a looped distribution system and allowing water to flow between the two mains. This configuration will supplement the existing infrastructure rather than replace it, providing additional capacity while maximizing the use of the existing 6-inch main.

14. The multiple interconnections between the 6-inch and 12-inch mains will also provide greater operational flexibility and system redundancy. Water can be supplied to customers from multiple directions, reducing reliance on a single segment of water main and allowing the District to isolate portions of the system for maintenance or emergency repairs while maintaining service to a greater number of customers. This configuration will also improve the District's ability to respond to water main breaks and other unforeseen service interruptions. The project will strengthen the overall distribution system while providing the hydraulic capacity, fire-flow capability, and operational flexibility necessary to support existing customers and future water service needs along the US 42 corridor.

D. Alternatives Considered

15. **Alternatives Considered**. Oldham District and GRW initially considered three possible alternatives to increase capacity, flow, and pressure along this section of U. S. 42. These alternatives are explained in **Exhibit 5**, the Preliminary

Engineering Report. One of these alternatives, which was referred to as "Alternative A" in the Preliminary Engineering Report, was eliminated from consideration because it did not extend service far enough west to resolve the flow and fire protection issues. For this reason, no cost estimates were developed for Alternative A.

16. **Alternative B/1**. To avoid some constructability challenges involved with installing the water main in the U.S. 42 right-of-way and to eliminate the need for four stream crossings, Oldham District considered installing large portions of the water main on private farmland. This would have required 4,000 additional linear feet of water main and would have also required the District to acquire numerous easements from various property owners. In **Exhibit 3**, the Final Engineering Report, this alternative is referred to as "Alternative 1." In **Exhibit 5**, the Preliminary Engineering Report, this alternative is referred to as "Alternative B." GRW's Opinion of Total Probable Cost to construct Alternative B/1 was $5,525,268.50 as shown on page 5 of **Exhibit 5**, the Preliminary Engineering Report.

17. **Alternative C/2.** Oldham District also evaluated installing the water main within the right-of-way of U.S. 42 for the full length of the extension. In **Exhibit 3**, the Final Engineering Report, this alternative is referred to as "Alternative 2." In **Exhibit 5**, the Preliminary Engineering Report, this alternative is referred to as "Alternative C." This alternative eliminated the need to acquire easements. This is

important to Oldham District because the District recently had to obtain easements to construct a smaller, grant-funded project. The process of acquiring the necessary easements was very time-consuming and somewhat tedious. It is quite possible that obtaining easements for the U.S. 42 Project would delay the start of the Project. Prior to obtaining bids, GRW issued an Opinion of Probable Cost opining that Alternative C/2 could be constructed for approximately $4,916,516. This opinion is found in **Exhibit 5,** the Preliminary Engineering Report.

18. Because Alternative C/2 involves installing the 12-inch proposed water main in the right-of-way of a major roadway, the main, hydrants and valves are easily accessible for maintenance. This reduces long-term costs to operate the proposed main. Aligning the proposed main with U.S. 42 also eliminates the need for approximately 4,000 LF of water main without sacrificing the westward reach of the proposed main. However, this alternative involves four stream crossings.

19. **Alternative Pipe Materials.** Finally, the District considered what type of pipe is best suited to the Project. Given the challenges of the terrain the District chose to construct the Project with high density polyethylene pipe ("HDPE"). HDPE pipe is lower cost than ductile iron, but still very durable. HDPE pipe is flexible and is better suited to the changes in elevation along the Project route than PVC or ductile iron. Because HDPE is less susceptible to damage from the friction of shifting caused

by temperature and moisture changes in the surrounding soil it is also less expensive to maintain.

20. **Preferred Alternative.** Oldham District decided to construct **Alternative C/2** and to install a 12-inch water main along the southern right-of-way of U.S. 42 from KY 1694 to KY 393. This option provides system redundancy, increases pressure, and improves capacity and flow in a region of the system where this is needed. Locating the new water main along a major roadway provides ready access to valves and hydrants and eliminates the need for private easements. Although constructing the Project requires that the District issue debt, the District believes that not providing additional capacity, increased pressure, and redundancy to the western region of its system when the funds **are available** to do so, would be incredibly short-sighted, unreasonable, and not consistent with its obligation to provide adequate, efficient, and reasonable service.[5]

21. **Project Plans, Specifications, and Drawings.** The as-bid construction costs associated with the Project are $4,428,815.01,[6] which is slightly more than GRW's pre-bid estimate.[7] The final Plans, Specifications and Drawings are attached to this Application as **Exhibit 7.**

[5] KRS 278.030(2).

[6] *See* As-bid Project Budget on the final page of **Exhibit 3.**

[7] *See* Opinion of Probable Cost on page 8 of **Exhibit 5**.

22. **Cost to Construct and Estimated Annual Cost to Operate.** The **total** cost to construct the Project, including all engineering and administrative fees and a contingency is **$6,129,061**.[8] Oldham District estimates that the annual cost to operate the Project will be **$1,350**. As presented on page 8 of the Final Engineering Report filed as **Exhibit 3**, the annual cost to operate the Project consists of the cost of the personnel required to flush the line twice a year and the cost of the produced water used in flushing.

23. **Competition with Other Public Utilities.** The proposed Project will not compete with the facilities of another public utility. There is no other water distribution system located in the area of the Project. Its construction will not result in wasteful duplication of utility facilities or inefficient investment.

E. Required Permits

24. **Division of Water.** The Kentucky Division of Water ("DOW") has reviewed the plans for the proposed Project and has approved them with respect to the sanitary features of design. A copy of the letter in which DOW stated its approval is attached to this Application as **Exhibit 8.**

25. **Division of Water-Floodplain Management.** Because the Project involves construction in a floodplain, pursuant to KRS 151.250 the Floodplain Management Section of DOW's Water Resources Branch has issued a General

[8] *See* As-bid Project Budget on the final page of **Exhibit 3.**

Permit for Development in a Floodplain for the Project. A copy of the letter and the General Permit are attached to this Application as **Exhibit 9**.

26. **U.S. Army Corps of Engineers.** The U.S. Army Corp of Engineers ("the Corp") has examined the Project's plans and has authorized the four required stream crossings. Construction will cross Bull Creek and Morris Branch, as well as an unnamed tributary of each. A copy of the letter in which the Corp stated its authorization is attached as **Exhibit 10**.

27. **Kentucky Department of Highways.** The Kentucky Department of Highways has issued Oldham District an Encroachment Permit for the Project. It is attached to this Application as **Exhibit 11**.

28. **Easements.** The District will **not** need to obtain additional easements to construct the Project. No real property or interest in real property will be acquired as part of the Project.

F. Authorization to Execute Assistance Agreement

29. **KIA Loan C25-001.** To finance the proposed Project, Oldham District proposes to enter into an Assistance Agreement with KIA for KIA Loan C25-001 to borrow an amount not to exceed **$6,129,061** from the Infrastructure Revolving Loan Fund for Governmental Agencies ("Fund C"). The proposed loan will bear interest at a rate of 2.75 percent per annum and must be repaid over a period not to exceed 20 years from the date of the last draw of funds. Interest on the proposed loan will

accrue from the time Oldham District begins drawing funds from KIA. The proposed loan will be secured by a pledge of Oldham District's revenues. A loan servicing fee of 0.25 percent of the outstanding loan balance will also be assessed semi-annually. A preliminary amortization schedule for the proposed loan is attached to this Application as **Exhibit 12.** Payments on the proposed loan will begin six months after funds are first drawn. A copy of the KIA Conditional Commitment Letter issued April 4, 2025, in relation to the $6,129,061 Fund C loan, as well as copies of the April 26 and November 2, 2026 extension letters are attached as **Exhibit 13**.

30. Oldham District represents that KIA Loan C25-001 is in the public interest and is intended to accomplish the purpose of ensuring that Oldham District continues to provide adequate, efficient, and reasonable service to its customers by extending its water mains into underserved areas to improve redundancy, provide fire protection, and increase pressure for customers in the western region of its service area. These are lawful objects within the corporate purposes of Oldham District's utility operations. KIA Loan C25-001 is necessary, appropriate for, and consistent with the proper performance of the District's service to the public and will not impair its ability to perform that service.

G. Financial Exhibit

31. **Financial Exhibit.** Pursuant to KAR 5:001, Section 12, Oldham District states as follows:

a. **Section 12(2)(a) Stock Authorized:** None. Oldham District does not have any authorized stock;

b. **Section 12(2)(b) Stock Issued & Outstanding:** None. As it has no authorized stock, Oldham District also has no issued or outstanding stock;

c. **Section 12(2)(c) Preferred Stock Preference:** None. Oldham District has no preferred stock;

d. **Section 12(2)(d) Mortgages:** Oldham District has no mortgages;

e. **Section 12(2)(e) Bonds:** The Commission authorized Oldham District to issue Water Revenue Bonds in the amount of **$13,243,100** in its final Order in Case No. 2009-00436.[9] These RD Bonds are the **only** Bonds issued by or on behalf of Oldham District. They were issued in two separate issuances. Waterworks Revenue Bonds Series 2010A were issued December 31, 2010, and Waterworks Revenue Bonds Series 2010B were issued March 27, 2013. **Exhibit 14** sets forth the details of these RD Bonds. The total amount of interest Oldham District paid in the fiscal year ending December 31, 2025, was **$375,951**;

f. **Section 12(2)(f) Notes Outstanding:** Oldham District has no outstanding Notes;

g. **Section 12(2)(g) Other Indebtedness:** Oldham District has no indebtedness other than that listed in **Exhibit 14**;

h. **Section 12(2)(h) Dividends:** None. Oldham District has no outstanding stock and therefore pays no dividends; and

[9] *Application of Oldham County Water District for a Certificate of Public Convenience and Necessity to Construct, Finance, and Increase Rates Pursuant to KRS 278.023,* Case No. 2009-00436, final Order (Ky. PSC Dec. 9, 2009).

i. **Section 12(2)(I) Income Statement & Balance Sheet:** Oldham District's detailed Income Statement for the twelve (12) month period ending on September 30, 2026 and Oldham District's Balance Sheet, as of September 30, 2026 are attached as **Exhibit 15** and are incorporated by reference.

36. **Bids Sought.** In conformance with the provisions set forth in KRS Chapter 424, Oldham District caused an advertisement for bids to construct the Project to be published in the September 17, 2026 edition of *The Oldham Era.* A copy of the advertisement and an Affidavit of Publication are attached as **Exhibit 16.**

37. **Bids Received.** The District received two (2) bids to complete the Project. However, only one bid package was complete. After unsuccessfully attempting to obtain information to complete the incomplete bid, and being unable to check the contactor's references, GRW issued a recommendation that Oldham District accept the complete bid of Stotts Construction Company, Inc. from Columbia, Kentucky ("Stotts"). The District and its engineers have experience working with Stotts, and on October 20, 2026, the District's Board of Commissioners adopted a Resolution accepting GRW's recommendation and awarding the contract to Stotts conditioned upon receiving Commission approval to finance the Project and a CPCN to construct it. The Resolution is found at **Exhibit 2** and the Engineer's Recommendation and Certified Bid Tabulation is attached as **Exhibit 17**. The Contract Specifications are attached as **Exhibit 18**.

38. The proposed loan will **not** require Oldham District to seek an

immediate rate adjustment.

39. Oldham District does not propose to issue any stock or bonds. No proceeds from the proposed Assistance Agreement will be used to refund any outstanding obligation.

40. In the immediate past calendar year (the 12-month period ending December 31, 2025), Oldham District had **$6,361,657** in total annual revenues.[10]

41. **Filing Requirements for Debt Authorization.** Pursuant to KAR 5:001, Section 18, Oldham District hereby states as follows:

a. **Section 18(1)(b) Applicant's Property:** A general description of Oldham District's water system property, together with a statement of the original cost, is contained in Oldham District's Annual Report for 2025 which is on file with the Commission. Oldham District's 2025 Annual Report is incorporated by reference in this Application.

b. **Section 18(1)(c) Stock, Notes or Bonds to be Issued:** Oldham District does not propose to issue any stock or bonds. Oldham District proposes to execute an Assistance Agreement (note) with KIA for **KIA Loan C25-001** in an amount not to exceed **$6,129,061**, bearing interest at a rate of 2.75 percent per annum and to be repaid over a period not to exceed 20 years from the date of the last draw of funds. The proposed loan will be **secured by a pledge of Oldham District's revenues**. A loan servicing fee of 0.25 percent of the outstanding loan balance will also be assessed semi-annually.

c. **Section 18(1)(d) Use of Proceeds:** As further explained in paragraphs 17-19 and set forth in **Exhibit 3**, the proceeds of the proposed KIA Loan C25-001 will be used to construct approximately 16,600 linear feet of 12-inch HDPE water main and all necessary appurtenances within the southern right-of-way of U.S. 42 between KY 1694 and KY 393 to improve redundancy, provide

[10] *See* 2025 Audited Financial Statement attached as **Exhibit 19**.

fire protection, and increase pressure for customers in the area. No portion of the proceeds will be used to refund other obligations.

d. **Section 18(1)(e) Property to be constructed:** Oldham District will be constructing water lines with a value of approximately $6,129,061. **Exhibit 3** provides a detailed description of the contemplated construction.

e. **Section 18(1)(f):** This sub-section is not applicable because no portion of the proposed KIA Loan C25-001 will be used to discharge or refund any obligation of the District.

f. **Section 18(1)(g) State Local Debt Officer Notification:** A copy of Oldham District's written notification to the State Local Debt Officer is included as **Exhibit 20.**

g. **Section 18(2)(a) Financial Exhibit:** See paragraph 31 in section "G" of this Application for Oldham District's Financial Exhibit.

h. **Section 18(2)(b) Trust Deeds or Mortgages:** Oldham District has no trust deeds or mortgages.

i. **Section 18(2)(c) USoA Account Number:** Attached as **Exhibit 21** is a table arranged by USoA account number, which sets forth the book value of the water lines to be constructed with the proceeds of KIA Loan C25-001.

Wherefore, Oldham County Water District requests that the Commission:

1. Place this Application at the head of the Commission's docket, pursuant to KRS 278.300(2), and issue a decision in this matter **within 60 days** of the filing of this Application**.**

2. Grant Oldham District a CPCN to construct the U.S. 42 Water Line Extension from KY 1694 to KY 393 Project.

3. Authorize Oldham to enter into and execute an Assistance Agreement with KIA to borrow a sum no greater than **$6,129,061.**

4. Grant any and all such other relief to which Oldham District may be entitled.

Dated: November 3, 2026

Respectfully submitted

/s/ Tina C. Frederick
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Counsel for Oldham County Water District

CERTIFICATE OF SERVICE

In accordance with the Commission's Order of July 22, 2021 in Case No. 2020-00085 (Electronic Emergency Docket Related to the Novel Coronavirus COVID-19), this is to certify that the electronic filing has been transmitted to the Commission on November 3, 2026; and that there are currently no parties in this proceeding that the Commission has excused from participation by electronic means.

/s/ Tina C. Frederick
Tina Frederick

VERIFICATION

COMMONWEALTH OF KENTUCKY)
) SS:
COUNTY OF OLDHAM)

The undersigned, **Russell D. Rose**, being duly sworn, deposes and states that he is the General Manager of the Oldham County Water District, the Applicant in the above proceedings; that he has read the Application and has noted its contents; that the same is true and correct to the best of his information, knowledge, and belief.

Russell D. Rose

Russell D. Rose

Subscribed, sworn to, and acknowledged before me, a Notary Public in and for said County and State, this 3RD day of November 2026.

Lacey Cunningham

Notary Public

Commission Number: KYNP36553

My Commission Expires: 09/13/2029

Table of Exhibits

Case No. 2026-00314

Exhibit No.	Description
1	Filings Requirements
2	Board Resolution Authorizing Application
3	Final Engineering Report
4	Map of Project Location
5	Preliminary Engineering Report
6	Buckeye Trace Neighborhood Association Documents
7	Plans, Specifications, and Drawings
8	Division of Water Approval – Sanitary Features
9	Division of Water - General Permit for Development in a Floodplain
10	Army Corp of Engineers – Stream Crossing Permit
11	Department of Highways Encroachment Permit
12	KIA Loan Amortization Schedule
13	KIA Loan Conditional Commitment Letter & Extensions
14	Bonds Authorized
15	Income Statement & Balance Sheet Per 807 KAR 5:001,§ 12(1)(a)
16	Affidavit of Publication & Tear Sheet
17	Engineer's Recommendation of Award Letter

Exhibit No.	Description
18	Contract Specifications
19	2025 Audit Report
20	Written Notification to State Local Debt Officer
21	Estimate of Acquired Property

Exhibit 1

FILING REQUIREMENTS

FILING REQUIREMENTS FOR AN APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY

U.S. 42 Water Main Extension from KY 1694 to KY 393 Project

Source Authority	Requirement	Location
807 KAR 5:001, § 14(1)	Applicant's name, mailing address and e-mail address	Page 2, Para 1
807 KAR 5:001, § 14(1)	Statutory Reference – KRS 278.020	Page 1
807 KAR 5:001, § 4(3)	Signature of Applicant's Attorney	Page 18
807 KAR 5:001, § 4(3)	Name, Address, Telephone Number, Fax Number, and e-mail address of Applicant's Attorney	Page 2-3, Para 2
807 KAR 5:001, § 14(2)	If Applicant is corporation: State and date of incorporation, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 3, Para 3 **Not Applicable**
807 KAR 5:001, § 14(3)	If Applicant is a limited liability company: State and date of organization, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 3, Para 3 **Not Applicable**
807 KAR 5:001, § 14(4)	If the Applicant is a limited partnership: a certified copy of limited partnership agreement and all amendments or statement identifying prior Commission proceedings in which limited partnership agreement and all amendments filed	Page 3, Para 3 **Not Applicable**
807 KAR 5:001, § 15(2)(a)	The facts relied upon to show that the public convenience and necessity requires the proposed construction	Pages 4-7, Paras 8-14 Exhibits 5 & 6
807 KAR 5:001, § 15(2)(b)	Copies of franchises or permits for the proposed construction or extension	Pages 11 & 12, Paras 24-27 Exhibits 8, 9, 10, & 11
807 KAR 5:001, § 15(2)(c)	A full description of the proposed location, route, or routes of the proposed construction or extension, including a description of the manner in which same will be constructed, and the names of all public utilities, corporations, or persons with whom the proposed construction or extension is likely to compete	Page 4-5, Para 9 Pages 8-10, Paras 17-21 Page 11 Para 23 Exhibits 3, 4, and 7

Source Authority	Requirement	Location
807 KAR 5:001, § 15(2)(d)(1)	Maps to suitable scale showing the location or route of the proposed construction or extension, as well as the location to scale of like facilities owned by others located anywhere within the map area with adequate identification as to the ownership of the other facilities (Only one copy submitted pursuant to Commission order of July 28, 2017)	Page 4-5, Para 9 Exhibits 3. 4. And 7
807 KAR 5:001, § 15(2)(d)(2)	Plans and specifications and drawings of the proposed plant, equipment, and facilities	Page 6 Para 12 Exhibit 7
807 KAR 5:001, § 15(2)(e)	The manner in detail in which the Applicant proposes to finance the proposed construction or extension.	Pages 12-13, Paras 29-30 Exhibits 12 & 13
807 KAR 5:001, § 15(2)(f)	An estimated annual cost of operation after the proposed facilities are placed into service	Page 11, Para 22 Exhibit 3
KRS 322.340	Engineering plans, specifications, drawings, plats and reports for the proposed construction or extension prepared by a registered engineer, must be signed, sealed, and dated by an engineer registered in Kentucky	Page 6, Para 12 Exhibit 7

FILING REQUIREMENTS

FILING REQUIREMENTS FOR AN APPLICATION FOR A AUTHORITY TO ISSUE EVIDENCES OF INDEBTEDNESS

U.S. 42 Water Main Extension from KY 1694 to KY 393 Project

Source Authority	Requirement	Location
807 KAR 5:001, § 14(1)	Applicant's name, mailing address and e-mail address	Page 2, Para 1
807 KAR 5:001, § 14(1)	Statutory Reference – KRS 278.300	Page 1
807 KAR 5:001, § 4(3)	Signature of Applicant's Attorney	Page 18
807 KAR 5:001, § 4(3)	Name, Address, Telephone Number, Fax Number, and e-mail address of Applicant's Attorney	Page 2, Para 2
807 KAR 5:001, § 14(2)	If Applicant is corporation: State and date of incorporation, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 3, Para 3 **Not Applicable**
807 KAR 5:001, § 14(3)	If Applicant is a limited liability company: State and date of organization, attestation of good standing in state of incorporation, statement regarding authorization to transact business in Kentucky	Page 3, Para 3 **Not Applicable**
807 KAR 5:001, § 14(4)	If the Applicant is a limited partnership: a certified copy of limited partnership agreement and all amendments or statement identifying prior Commission proceedings in which limited partnership agreement and all amendments filed	Page 3, Para 3 **Not Applicable**
KRS 278.300(2)	Application is made under oath and signed on utility's behalf by its president, or by a vice president, auditor, comptroller or other executive officer having knowledge of the matters set forth and duly designated by the utility	Page VER
807 KAR 5:001, § 18(1)(a)	Information required by 807 KAR 5:001, § 14	See Above
807 KAR 5:001, § 18(1)(b)	Description of Applicant's property and the field of its operation	Page 3 Paras 5 & 6 Page 16, Para 41a
807 KAR 5:001, § 18(1)(c)	Description of amount and kinds of stock to be issued	Page 16, Para 41b **Not Applicable**
807 KAR 5:001, § 18(1)(c)	Description of amount, terms and interest rate of bond or note	Pages 12 &13, Para 29 Page 16, Para 41b
807 KAR 5:001, § 18(1)(c)	Description of how bond or note will be secured	Page 12 & 13, Para 29
807 KAR 5:001, § 18(1)(d)	Statement of how proceeds are to be used	Page 16 & 17, Para 41c
807 KAR 5:001, § 18(1)(e)	If proceeds will be used to acquire, construct, improve, or extend property: a detailed description of property and all contracts	Page 17, Para 41d Exhibits 3 & 18

Source Authority	Requirement	Location
807 KAR 5:001, § 18(1)(f)	Requirements if proceeds are to refund outstanding obligations	Page 17, Para 41e **Not Applicable**
807 KAR 5:001, § 18(1)(g)	Applicant's written notification to state local debt officer regarding proposed issuance	Page 17, Para 41f Exhibit 20
807 KAR 5:001, § 18(2)(a) 807 KAR 5:001, § 12(1)(b)	Financial Exhibit	Pages 14-15, Para 31 Exhibits 14 & 15
807 KAR 5:001, § 18(2)(b)	Copies of trust deeds or mortgages	Page 17, Para 41h
807 KAR 5:001, § 12(2)(c)	If property acquired: maps and plans of property	Exhibits 3, 4, & 7
807 KAR 5:001, § 12(2)(c)	If property acquired: detailed estimates by USOA account number	Page 17, Para 41i Exhibit 21

Exhibit 2

RESOLUTION NO. 2026-10-01

RESOLUTION OF OLDHAM COUNTY WATER DISTRICT REJECTING INCOMPLETE BID, ACCEPTING COMPLETE BID, AWARDING CONTRACT FOR THE U.S. 42 WATER MAIN EXTENSION FROM KY 1694 TO KY 393 PROJECT, AND AUTHORIZING DISTRICT CEO TO APPLY FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AND AUTHORITY TO ISSUE AN EVIDENCE OF INDEBTEDNESS

WHEREAS, Oldham County Water District ("the District") is a water district organized pursuant to the provisions of KRS Chapter 74;

WHEREAS, the District proposes to construct approximately 16,321 linear feet (L.F.) of 12-inch HDPE water main, approximately 395 L.F. of 12-inch HDPE water main bore and jacked in 24-inch steel casing pipe, gate valves, air release valves and manhole, leak detection vaults, hydrants, creek crossings and other appurtenances together with all related work ("the U.S. 42 Water Main Extension from KY 1694 to KY393 Project," "the Project," or "the Contract");

WHEREAS, the District has engaged the services of GRW Engineering ("GRW") to serve as consulting engineers for the Project. GRW has designed the Project and will perform the usual and customary duties of consulting engineers, including Construction Administration and Inspection Services;

WHEREAS, the District caused to be published in the September 17, 2026 edition of *The Oldham Era* an advertisement for bids for the Project in accordance with the provisions of KRS Chapter 424;

WHEREAS, two (2) firms submitted bids on the Project, but only one bid package was complete in accordance with the terms of the advertisement and the Bid Specifications;

WHEREAS, Mofield Brothers Construction Company, LLC ("Mofield") submitted a bid lacking several of the components included in the Bid Specifications;

WHEREAS, GRW granted Mofield an eight (8) day enlargement of time from the October 1, 2026 published deadline to submit bids to provide the missing bid components;

WHEREAS, by close-of-business on Friday, October 9, 2026, the deadline provided by GRW to receive the missing bid components, Mofield had not supplied all of the missing documents;

WHEREAS, Stotts Construction Company, Inc. ("Stotts") timely submitted a complete bid package to construct the Project for **$4,428,815.01**;

WHEREAS, GRW has recommended that the District award the Contract to construct the Project to Stotts;

WHEREAS, KRS 278.015 provides that a water district is a utility and is subject to the jurisdiction of the Kentucky Public Service Commission (the "Commission") in the same manner and to the same extent as any other utility;

WHEREAS, KRS 278.020(1) prohibits any utility from commencing the construction of any plant or facility or installing any equipment to provide utility service, except for that in the ordinary course of business, until that utility has obtained a Certificate of Public Convenience and Necessity (the "CPCN") from the Commission;

WHEREAS, KRS 278.300(1) requires a utility to obtain authorization from the Commission prior to issuing any evidence of indebtedness, including executing an Assistance Agreement with the Kentucky Infrastructure Authority ("KIA");

WHEREAS, the District proposes to finance the Project with the proceeds of a loan from the Infrastructure Revolving Loan Fund for Governmental Agencies Fund C from KIA ("KIA Loan C25-001");

WHEREAS, the District must execute an Assistance Agreement with KIA to obtain KIA Loan C25-001; and

WHEREAS, the District has, or soon will have, obtained all the necessary approvals to construct the Project, except for a CPCN and approval to execute the Assistance Agreement with KIA.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF THE OLDHAM COUNTY WATER DISTRICT AS FOLLOWS:

Section 1. The facts, recitals, and statements contained in the foregoing preamble of this Resolution are true and correct and are hereby affirmed and incorporated as a part of this Resolution.

Section 2. The Board of Commissioners hereby rejects the bid package submitted by Mofield on October 1, 2026 as nonconforming and incomplete. As submitted and supplemented during the eight (8) additional days provided to Mofield to conform to the Bid Specifications, the bid did not contain the necessary information for GRW to evaluate the bid.

Section 3. The Board of Commissioners hereby accepts the recommendation of GRW.

Section 4. The Board of Commissioners hereby declares the bid of Stotts in the amount of **$4,428,815.01** to construct the Project to be the lowest and best bid.

Section 5. Stotts is awarded the Contract contingent upon the Commission granting a CPCN and approval to execute the KIA Assistance Agreement.

Section 6. The CEO is authorized and directed as follows: (a) to execute the Notice of Award; (b) to take any and all actions reasonably necessary to prepare, execute, and submit an application to the Commission for a CPCN to construct the Project and approval to issue an evidence of indebtedness; and (c) to execute the Assistance Agreement with KIA.

Section 7. This Resolution shall take effect upon its adoption.

[Remainder of page intentionally left blank]

Adopted by the Board of Commissioners of the Oldham County Water District at a meeting held on October 20, 2026, signed by the Chairman, and attested by the Secretary.

OLDHAM COUNTY WATER DISTRICT

By: _____
J. W. Hall III., Chairman

ATTEST:

_____
Jason Greer, Secretary

CERTIFICATION

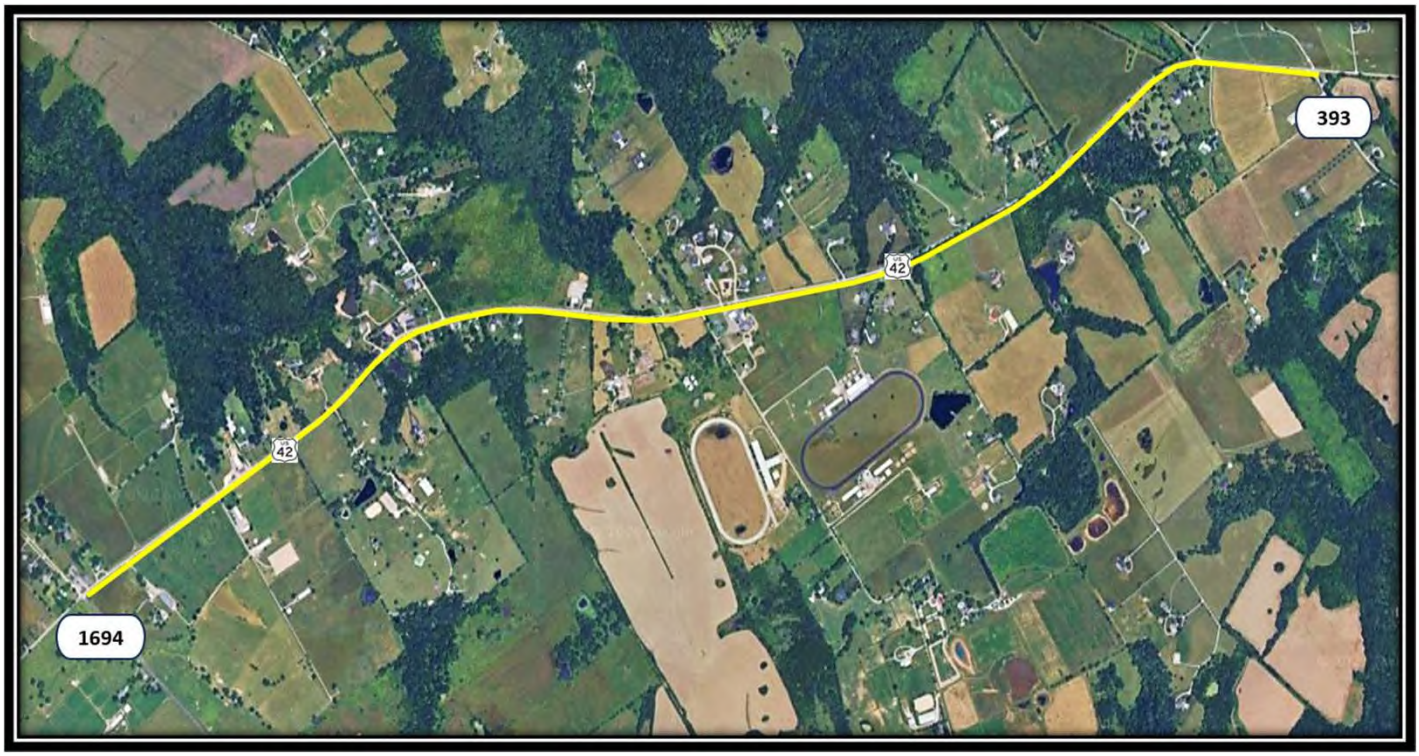
The undersigned Secretary of Oldham County Water District (the "District") does hereby certify that the foregoing is a true copy of a Resolution duly adopted by the District's Board of Commissioners at a meeting properly held on October 20, 2026, signed by the Chairman of the Board of Commissioners, attested by the Secretary of the Board of Commissioners, and now in full force and effect.

WITNESS my hand this 20th day of October 2026.

_____
Jason Greer, Secretary

Exhibit 3

Final Engineering Report
for
US42 Water Main Extension – KY1694 to KY393



October, 2026

STATE OF KENTUCKY
NICHOLAS W. GUNSELMAN
39485
LICENSED PROFESSIONAL ENGINEER
10/29/2026

FINAL ENGINEERING REPORT
US42 Water Main Extension - KY1694 to KY393

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Appendix B – Certified Bid Tab
Appendix C – Engineers Recommendation of Award

GRW | engineering | architecture | geospatial
10350 Ormbsy Park Place | Suite 101
Louisville, KY 40243
502.489.8484 | www.grwinc.com

FINAL ENGINEERING REPORT
US42 Water Main Extension - KY1694 to KY393

Introduction

Oldham County Water District (OCWD) retained GRW Engineers Inc. for engineering services including Design, Bidding, Permitting, Construction Administration, and Resident Project Representation for the US42 Water Main Extension - KY1694 to KY393. The objective of the Project is to extend a new water main along US Highway 42 to underserved areas of the OCWD service area. The extension will increase pressure, provide fire protection, and improve redundancy for customers in the area.

Alternatives

GRW evaluated different options including water main alignments and material types. For a 12" water main, OCWD typically uses HDPE, PVC, or DI pipe material. Based on pricing provided by Contractors and recent bid tabs, it was determined that HDPE pipe was the most cost-effective material for this project. It provided the lowest linear foot installation cost and allowed Contractor flexibility to install by horizontal direction drilling in difficult locations where open cut might not be feasible. The alternatives below will show the two different alignments evaluated using HDPE piping for both.

The Opinion of Probable Project Cost (OPCC) for both alternatives included engineering (Design, Bidding, Construction Administration, Permitting, Resident Project Representative, and Additional Services) costs. An assumed Land Acquisition pricing was included with Alternative 1, but not Alternative 2. Construction Contingencies of 30% were used for both alternatives due to potential variations in quantity, volatility of unit prices for the water main material, and unforeseen conditions along the route at the PER level.

Alternative 1

Alternative 1 evaluated going "cross county" with the water main alignment between KY1694 and KY393 with a few areas within the southern right-of-way of US42. The advantages of this approach included:

Easier construction	Water main would mostly be installed in open farm land away from existing utilities and maintenance of traffic requirements along US42. It avoids some difficult construction areas along US42.
Eliminates the Need for Stream Crossings	Four stream crossings would be eliminated with this approach.

The disadvantages of this approach included:

Easement Acquisition	OCWD would need to acquire numerous easements from different property owners which could take time and money to acquire.
Alignment length	Alternative 1 alignment is approximately 4,000 LF longer, which will increase costs.
Accessibility for Future Maintenance	Valves (gate and air release), fire hydrants, and piping would be in locations that aren't easily accessible for routine maintenance.
Future tie-ins	Less opportunities to connect to water main in the future if growth occurs along US42.

An overview of the Alternative 1 alignment can be found in Figure 1 below.

Figure 1: Alternative 1 Alignment

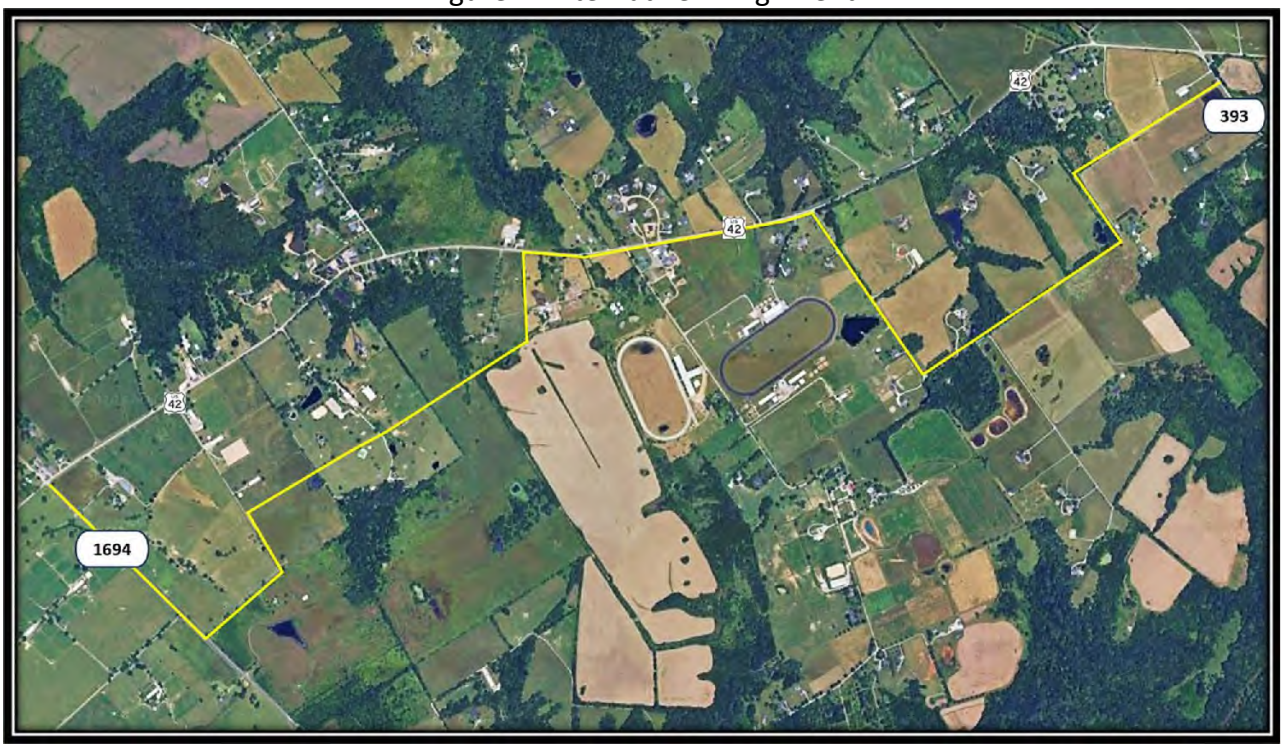


Table 1 below represents the preliminary cost estimate associated with construction of Alternative 1. This pricing also included multiple easement acquisitions across properties on the south side of US42.

Table 1: Alternative 1 OPPC

engineering | architecture | geospatial	Project:	US42 Water Main Extension - Alternative 1		
	Owner:	OCWD		
	Project No.:	5180		
Opinion of Total Probable Project Cost	Date:	07/10/26		
	Estimator:	NWG	Type:	Preliminary

	No. of Units	Units of Measure	Unit Cost	Total Cost
Mobilization/Demobilization	1	EA	$ 2,500.00	$ 2,500.00
12-Inch HDPE Main	20,625	LF	$ 150.00	$ 3,093,750.00
24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor Ln. w/ Casing Spacers	70	LF	$ 450.00	$ 31,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath KY 393 w/ Casing Spacers	180	LF	$ 400.00	$ 72,000.00
14-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 15,000.00	$ 15,000.00
12-inch Gate Valve and Box	5	EA	$ 7,500.00	$ 37,500.00
12-inch Dry Connect	1	EA	$ 7,500.00	$ 7,500.00
6-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 7,500.00	$ 7,500.00
6-inch Dry Connect	1	EA	$ 5,000.00	$ 5,000.00
Air Release Valve and Vault	9	EA	$ 12,000.00	$ 108,000.00
6-inch Fire Hydrant Assembly	12	EA	$ 17,500.00	$ 210,000.00
Ductile Iron Fittings	1.5	TON	$ 7,500.00	$ 11,250.00
Asphalt Drive Replacement	95	LF	$ 145.00	$ 13,775.00
Gravel Drive Replacement	20	LF	$ 25.00	$ 500.00
			Subtotal	$ 3,660,775.00
Land Acquistion				$ 265,000.00
Construction Contingencies (30%)				$ 1,098,232.50
			Opinion of Total Probable Construction Cost	$ 5,024,007.50
Engineering (Design, Bidding, CA, and Other Services)*				$ 501,261.00
			Opinion of Total Probable Project Cost	$ 5,525,268.50

*Other Services include PER, FER, Permits, Survey and PSC assistance. Permits assumed include KDOW Construction, KDOW and USACE Stream Crossing, and KYTC and Oldham County Encroachment

Alternative 2

Alternative 2 evaluated installing the water main within the southern right-of-way of US42 for the full length of the alignment between KY1694 and KY393. The advantages of this approach included:

No Easement Acquisition	With the water main located in the US42 right-of-way, no easements are required. This eliminates the need for easement negotiations and costs.
Alignment Length	Alternative 2 alignment is approximately 4,000 LF shorter, which will decrease costs.
Accessibility for Future Maintenance	Valves (gate and air release), fire hydrants, and piping would be in locations that are easily accessible for routine maintenance. They can also be observed from a road, so if a leak were to occur it could be visually identified easier.
Future tie-ins	Water main would be accessible to any future developments along US42 that would require a tie-in or need fire protection.

The disadvantages of this approach included:

Maintenance of Traffic	Contractor will be required to adhere to KYTC standards for maintenance of traffic along full alignment.
Stream Crossings	Four stream crossings would be required.
Constructability	Sections of US42 have limited flat right-of-way for water main installation, which will require slower and more difficult installation compared to open farm fields.

An overview of the Alternative 2 alignment can be found in Figure 2 below.

Figure 2: Alternative 2 Alignment

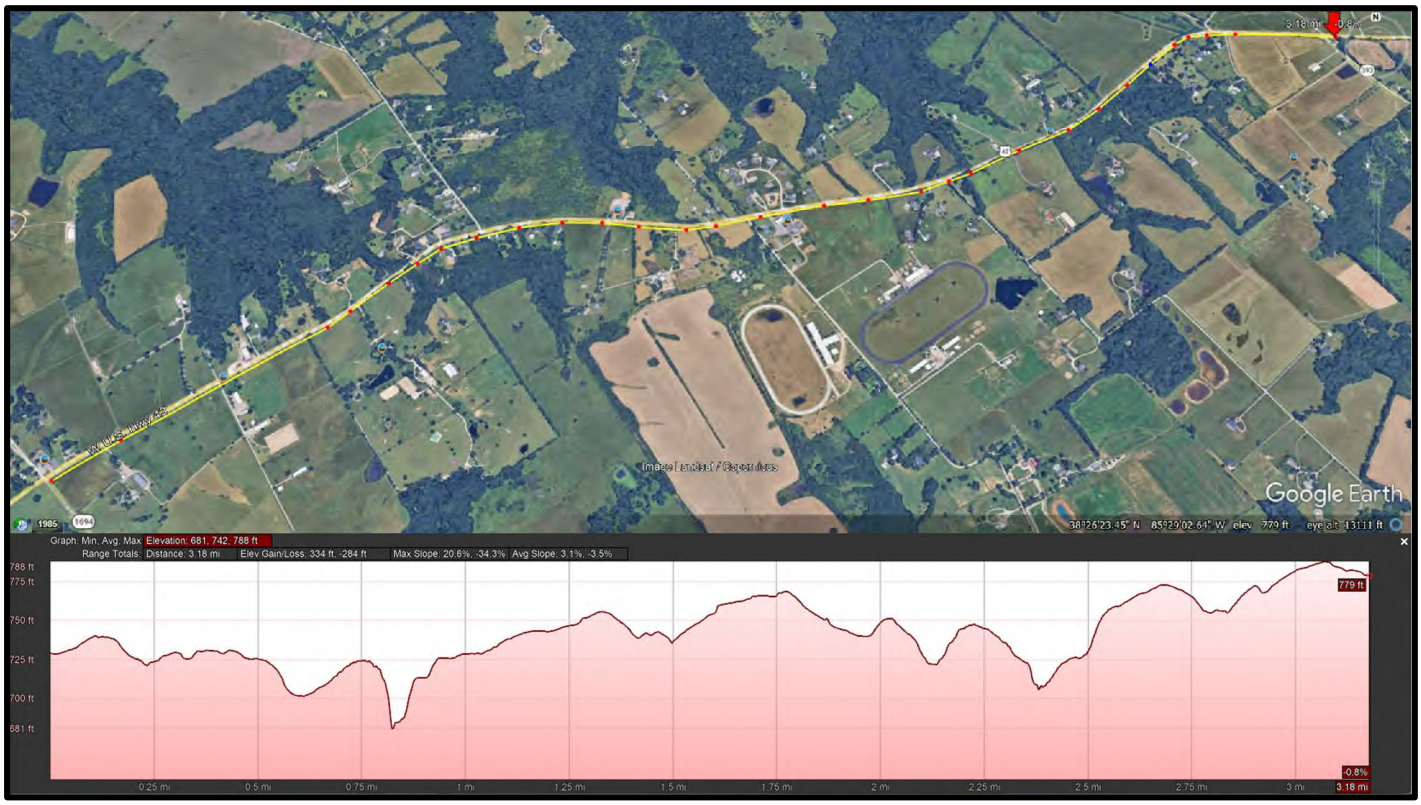


Table 2 below represents the preliminary cost estimate associated with construction of Alternative 2.

Table 2: Alternative 2 OPPC

engineering | architecture | geospatial	Project:	US42 Water Main Extension - Option 2		
	Owner:	OCWD		
	Project No.:	5180		
Opinion of Total Probable Project Cost	Date:	07/10/26		
	Estimator:	NWG	Type:	Preliminary

	No. of Units	Units of Measure	Unit Cost	Total Cost
Mobilization/Demobilization	1	EA	$ 2,500.00	$ 2,500.00
12-Inch HDPE Main	16,700	LF	$ 150.00	$ 2,505,000.00
Blue Line Stream Crossing (4)	500	LF	$ 500.00	$ 250,000.00
24-inch Steel Casing Pipe Bored & Jacked beneath US Hwy 42 w/ Casing Spacers	45	LF	$ 450.00	$ 20,250.00
24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor Ln. w/ Casing Spacers	70	LF	$ 450.00	$ 31,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath KY 393 w/ Casing Spacers	180	LF	$ 400.00	$ 72,000.00
14-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 15,000.00	$ 15,000.00
12-inch Gate Valve and Box	5	EA	$ 7,500.00	$ 37,500.00
12-inch Dry Connect	1	EA	$ 7,500.00	$ 7,500.00
6-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 7,500.00	$ 7,500.00
6-inch Dry Connect	1	EA	$ 5,000.00	$ 5,000.00
Air Release Valve and Vault	9	EA	$ 12,000.00	$ 108,000.00
6-inch Fire Hydrant Assembly	12	EA	$ 17,500.00	$ 210,000.00
Ductile Iron Fittings	1.5	TON	$ 7,500.00	$ 11,250.00
Asphalt Drive Replacement	370	LF	$ 145.00	$ 53,650.00
Concrete Drive Replacement	70	LF	$ 150.00	$ 10,500.00
Gravel Drive Replacement	100	LF	$ 25.00	$ 2,500.00
Permeable Paver Drive Replacement	25	LF	$ 50.00	$ 1,250.00
Sidewalk Replacement	6	LF	$ 75.00	$ 450.00
			Subtotal	$ 3,396,350.00
Construction Contingencies (30%)				$ 1,018,905.00
			Opinion of Total Probable Construction Cost	$ 4,415,255.00
Engineering (Design, Bidding, CA, and Other Services)*				$ 501,261.00
			Opinion of Total Probable Project Cost	$ 4,916,516.00

*Other Services include PER, FER, Permits, Survey and PSC assistance. Permits assumed include KDOW Construction, KDOW and USACE Stream Crossing, and KYTC and Oldham County Encroachment

Funding

OCWD submitted a request for, and received funding through, the Kentucky Infrastructure Authority Fund C Program. The project profile (WX21185064) assumed approximately 22,300 linear feet of 12-inch HDPE water main along US 42 from KY393 to KY1694 for a construction budget of $4,106,000 and contingencies of $1,231,900.

The profile identified one potential alternative that wasn't evaluated in the PER:

- **Alternate A:** Installation of approximately 15,000 feet of 12-inch water main from KY-393 to Liberty Lane (cross-country) including a bore underneath Harrods Creek.

This alternative did not go far enough west to resolve the flow/pressure and fire protection issues in the service area and wasn't pursued further.

Advertising and Bidding Recommendation

GRW recommended and OCWD proceeded with advertising Alternative 2 for construction of the project using HDPE pipe. HDPE was lower cost and better suited due to its flexibility in installation than PVC and DI because of the elevation changes along the route. It better accommodates bends and angular changes, in both horizontal and vertical directions, thus reducing or eliminating the risk of leaking joints and does not require thrust blocks or other methods to ensure water line stability. With four stream crossings in the selected route, HDPE provides better environmental protection than PVC and DI. In addition to cost, Alternative 2 provided several advantages to Alternative 1 that will benefit OCWD today and in the future with maintenance and growth.

ACTIONS PER PUBLIC SERVICE COMMISSION APPROVAL PROCESS

Bidding

Bids for the project were opened on October 1, 2026 with Stotts Construction of Columbia, KY being the successful respondent.

Certified Bid Tab

The certified Bid Tab is included as Appendix B. NOTE: The project is awarded on the Base Bid Amount.

Engineer's Recommendation of Award

The Engineers Recommendation of Award is included as Appendix C.

Project Budget w/ Contingency

As shown on the certified bid tab, the project budget Base Bid Amount is $4,428,815.01. The Loan C amount included a projected construction budget of $4,106,000 with a contingency of $1,231,800. Approximately, $322,815.01 from the contingency amount will need to be added to the projected construction budget amount to cover the Base Bid Amount. This will leave approximately $908,984.99 in contingency during construction. The overall project will remain below the KIA Loan amount of $6,129,061.

Secured Funding

OCWD received a Conditional Commitment Letter (C25-001) on April 4,2025 indicating an approval for a KIA Loan for $6,129,061. An extension was granted on April 26, 2026 to complete the KY e-Clearinghouse review requirements.

Construction Recommendation

GRW recommends OCWD proceed with the project as designed, bid and awarded pending approval by the Public Service Commission (PSC).

Estimated Annual Cost to Operate

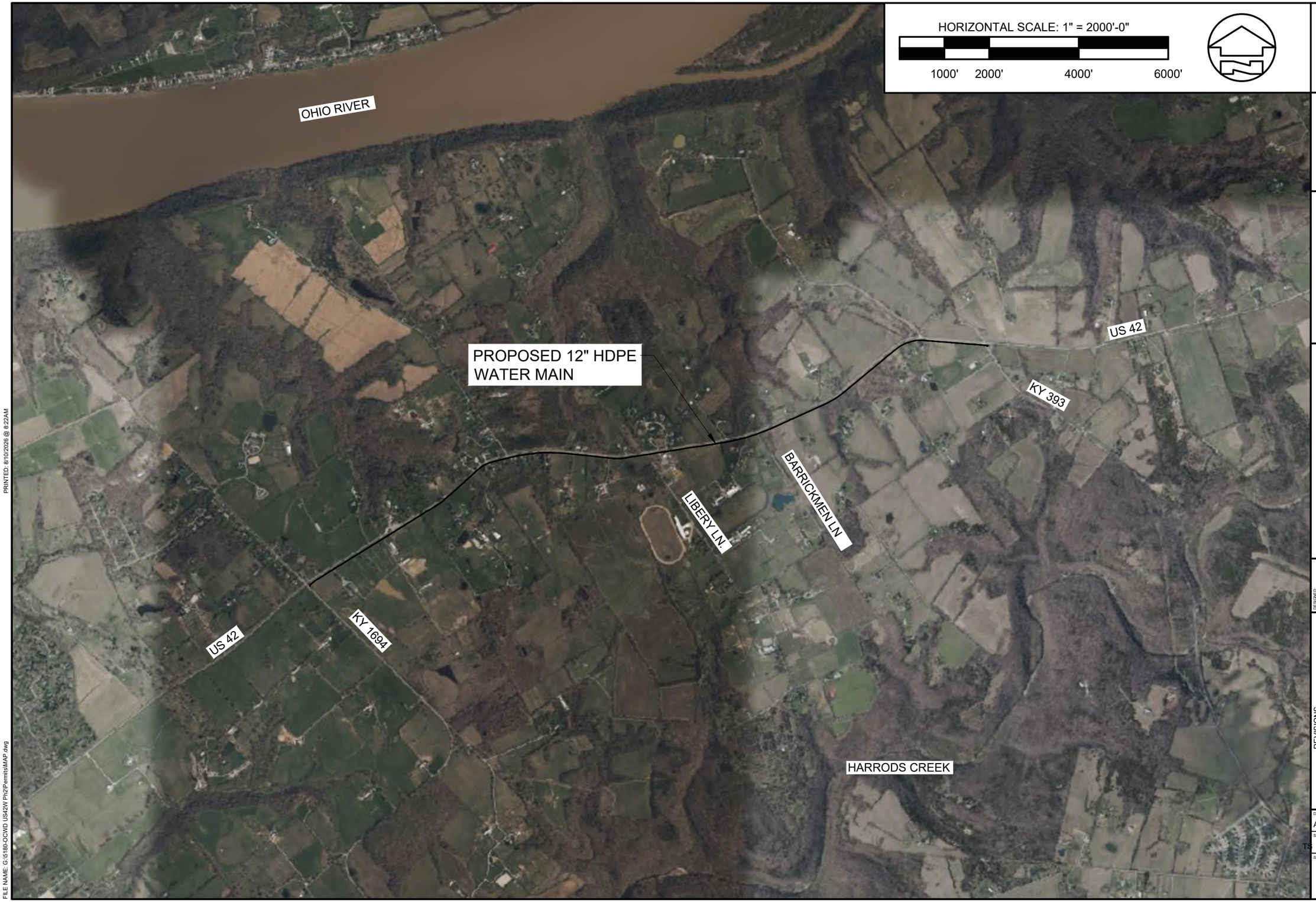
The estimated annual cost to operate the water line includes the cost of the produced water used and personnel required for flushing the line twice per year. The cost calculation assumes the following:

Two flushing cycles per year completely turning over the volume of the new line. 71,000 gallons times two cycles = 142,000 gallons. 142,000 gallons times the wholesale cost of water ($0.00273) = $387.66

Two OCWD staff per flushing event times 4 hours per flushing cycle, times two flushing cycles per year, times $60.00 per hour per staff (all encumbered) = $960.00 personnel cost.

$387.66 + $ 960.00 = $1,347.66 ($1,350.00)

The estimated annual cost to operate is $1,350.00



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GRW PROJECT NO. 5296

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engineering | architecture | geospatial
www.grwinc.com

SELECTED ALT. - ALT 2

US 42 WATER MAIN EXTENSION
KY1694 TO KY393
OLDHAM COUNTY, KENTUCKY

DESIGNED:
DRAWN:
REVIEWED:
APPROVED:

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: | THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED

DATE:
AUGUST, 2026

SCALE:

SHEET NO.
APP A

PROJECT BID

US42 Water Main Extension KY1694 to KY393

Oldham County Water District

GRW Project No. 5180

engineering | architecture | geospatial

Bids were opened Thursday, October 1, 2026 at 10:00 a.m. (local time)

CONTRACTOR'S NAME AND ADDRESS				Mofield Brothers Construction Company, LLC. 644 Lebanon Hwy Carthage, TN 37030		Stotts Construction Co., Inc. 2766 Greensburg Road Columbia, KY 42728	
CERTIFIED CHECK OR BID BOND				**5%**		**5%**	
Item	**Description**	**Quantity**	**Unit**	**Unit Price**	**Total**	**Unit Price**	**Total**
BASE BID							
1.	12-inch HDPE Water Main (Open Cut)	12,500	LF	$ 190.00	$ 2,375,000.00	$ 160.00	$ 2,000,000.00
2.	12-inch HDPE Water Main (HDD)	4,100	LF	$ 180.00	$ 738,000.00	$ 400.00	$ 1,640,000.00
3.	6-inch HDPE Water Main (Open Cut)	60	LF	$ 100.00	$ 6,000.00	$ 100.00	$ 6,000.00
4.	24-inch Steel Casing Pipe Bored & Jacked beneath US42 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	45	LF	$ 1,000.00	$ 45,000.00	$ 662.57	$ 29,815.65
5.	24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
6.	24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor w/ Casing Spacers and 12-inch HDPE Carrier Pipe	70	LF	$ 1,000.00	$ 70,000.00	$ 631.71	$ 44,219.70
7.	24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
8.	24-inch Steel Casing Pipe Bored & Jacked beneath KY393 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	180	LF	$ 1,000.00	$ 180,000.00	$ 614.98	$ 110,696.40
9.	Wet Connection to Existing 14” with Tapping Sleeve and Valve	1	EA	$ 12,000.00	$ 12,000.00	$ 16,231.39	$ 16,231.39
10.	Wet Connection to Existing 6” with Tapping Sleeve and Valve	2	EA	$ 4,000.00	$ 8,000.00	$ 7,903.75	$ 15,807.50
11.	Dry Connection to existing 12”	1	EA	$ 4,000.00	$ 4,000.00	$ 9,070.72	$ 9,070.72
12.	Dry Connection to existing 6”	1	EA	$ 2,000.00	$ 2,000.00	$ 6,618.58	$ 6,618.58
13.	12-inch Gate Valve and Box	9	EA	$ 4,000.00	$ 36,000.00	$ 5,827.49	$ 52,447.41
14.	6-inch Fire Hydrant Assembly	12	EA	$ 9,000.00	$ 108,000.00	$ 12,513.77	$ 150,165.24
15.	Air Release Valve and Manhole	9	EA	$ 2,500.00	$ 22,500.00	$ 6,329.78	$ 56,968.02
16.	Stream Crossing	4	EA	$ 2,000.00	$ 8,000.00	$ 12,000.00	$ 48,000.00
17.	Asphalt Drive Replacement	330	LF	$ 40.00	$ 13,200.00	$ 300.00	$ 99,000.00
18.	Concrete Drive Replacement	70	LF	$ 50.00	$ 3,500.00	$ 800.00	$ 56,000.00
19.	Gravel Drive Replacement	80	LF	$ 25.00	$ 2,000.00	$ 50.00	$ 4,000.00

PROJECT BID

US42 Water Main Extension KY1694 to KY393

Oldham County Water District

GRW Project No. 5180

engineering | architecture | geospatial

Bids were opened Thursday, October 1, 2026 at 10:00 a.m. (local time)

CONTRACTOR'S NAME AND ADDRESS				Mofield Brothers Construction Company, LLC. 644 Lebanon Hwy Carthage, TN 37030		Stotts Construction Co., Inc. 2766 Greensburg Road Columbia, KY 42728	
CERTIFIED CHECK OR BID BOND				**5%**		**5%**	
20.	Concrete Sidewalk Replacement	10	LF	$ 200.00	$ 2,000.00	$ 200.00	$ 2,000.00
21.	Leak Detection Vault	4	EA	$ 2,000.00	$ 8,000.00	$ 2,845.35	$ 11,381.40
22.	Mobilization/Demobilization	1	LS	$ 50,000.00	$ 50,000.00	$ 5,000.00	$ 5,000.00
	Total Bid Amount				**$ 3,793,200.00**		**$ 4,428,815.01**

ADDITIVE ALTERNATE NO. 1		**Quantity**	**Unit**	**Unit Price**	**Total**	**Unit Price**	**Total**
1.	12-inch HDPE Water Main (HDD)	16,600	LF	$ 180.00	$ 2,988,000.00	$ 275.00	$ 4,565,000.00
2.	6-inch HDPE Water Main (Open Cut)	60	LF	$ 100.00	$ 6,000.00	$ 150.00	$ 9,000.00
3.	24-inch Steel Casing Pipe Bored & Jacked beneath US42 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	45	LF	$ 1,000.00	$ 45,000.00	$ 662.57	$ 29,815.65
4.	24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
5.	24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor w/ Casing Spacers and 12-inch HDPE Carrier Pipe	70	LF	$ 1,000.00	$ 70,000.00	$ 631.71	$ 44,219.70
6.	24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
7.	24-inch Steel Casing Pipe Bored & Jacked beneath KY393 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	180	LF	$ 1,000.00	$ 180,000.00	$ 614.98	$ 110,696.40
8.	Wet Connection to Existing 14” with Tapping Sleeve and Valve	1	EA	$ 12,000.00	$ 12,000.00	$ 16,231.39	$ 16,231.39
9.	Wet Connection to Existing 6” with Tapping Sleeve and Valve	2	EA	$ 4,000.00	$ 8,000.00	$ 7,903.75	$ 15,807.50
10.	Dry Connection to existing 12”	1	EA	$ 4,000.00	$ 4,000.00	$ 9,070.72	$ 9,070.72
11.	Dry Connection to existing 6”	1	EA	$ 2,000.00	$ 2,000.00	$ 6,618.58	$ 6,618.58
12.	12-inch Gate Valve and Box	9	EA	$ 4,000.00	$ 36,000.00	$ 5,827.49	$ 52,447.41
13.	6-inch Fire Hydrant Assembly	12	EA	$ 9,000.00	$ 108,000.00	$ 12,513.77	$ 150,165.24
14.	Air Release Valve and Manhole	9	EA	$ 2,500.00	$ 22,500.00	$ 6,329.78	$ 56,968.02
15.	Stream Crossing	4	EA	$ 2,000.00	$ 8,000.00	$ 12,000.00	$ 48,000.00

PROJECT BID
US42 Water Main Extension KY1694 to KY393
Oldham County Water District
GRW Project No. 5180

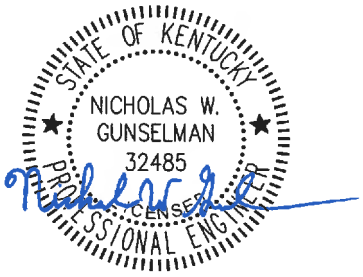
engineering | architecture | geospatial

Bids were opened Thursday, October 1, 2026 at 10:00 a.m. (local time)

CONTRACTOR'S NAME AND ADDRESS				Mofield Brothers Construction Company, LLC. 644 Lebanon Hwy Carthage, TN 37030		Stotts Construction Co., Inc. 2766 Greensburg Road Columbia, KY 42728	
CERTIFIED CHECK OR BID BOND				**5%**		**5%**	
16.	Leak Detection Vault	4	EA	$ 2,000.00	$ 8,000.00	$ 2,845.35	$ 11,381.40
17.	Mobilization/Demobilization	1	LS	$ 50,000.00	$ 50,000.00	$ 5,000.00	$ 5,000.00
	Total Alternate Amount				**$ 3,647,500.00**		**$ 5,195,815.01**

Additive Alternative No. 1 is the cost to install all 12" HDPE water main as horizontal directional drilled instead of open cut as proposed in the base bid.

Base Bid Amount		**$3,793,200.00**		**$4,428,815.01**
Alternate No. 1		**$3,647,500.00**		**$5,195,815.01**



I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE THIS IS A TRUE AND CORRECT COPY OF BIDS AS RECEIVED.

Nicholas W. Gunselman, Vice President

GRW | engineering | architecture | geospatial
10350 Ormsby Park Place, Suite 101 | Louisville, KY 40223
502.489.8484 | www.grwinc.com

October 19, 2026

Mr. Russell Rose
Oldham County Water District
2160 Spencer Court
La Grange, KY 40031

Re: US42 Water Main Extension KY1694 to KY393
Reference Letter for Stotts Construction Company, Inc.
GRW Project No. 5180

Dear Russell Rose:

As you are aware, we opened bids for the US42 Water Main Extension KY1694 to KY393 project on October 1, 2026 and received two bids: Mofield Brothers Construction Company, LLC and Stotts Construction Company, Inc. The Mofield Bothers was an incomplete bid package and Stotts was a complete bid package.

GRW notified Mofield Brothers that the following required items weren't included with their bid package and needed to be submitted to GRW: list of proposed subcontractors, list of project references, and bidder qualifications statement with supporting data including Schedule A (current experience), Schedule B (previous experience), Schedule C (major equipment) and audited balance sheets. In addition to the missing information, Mofield used the AIA Bid Bond form instead of the EJCDC Bid Bond form included with the contract documents.

GRW exchanged several emails with Mofield trying to get all the missing information with Mofield acknowledging that they were working to provide GRW with all documents. GRW requested all missing documents be provided by COB Friday, October 9, 2026. The final requested document, Schedule B (past experience), was provided on Wednesday, October 14, 2026. Schedule B contains information on past completed projects that allows GRW to contact owners and/or engineers of these projects to perform a reference check on the Contractor' prior performance.

Based on GRW not having prior experience with Mofield Brothers and them missing the deadline to provide the Schedule B document, which would have allowed GRW to perform a reference check, GRW can't evaluate Mofield Brothers' ability to perform and complete the project. Therefore, GRW can't recommend Mofield Brothers to OCWD to perform this project.

The second bidder, Stotts Construction Company, Inc., has submitted all required information for the bid including the signed bid form, bid bond and qualifications statement. All documents appear to be in order.

Based upon GRW's and OCWD's past experience with Stotts Construction Co. Inc. including the recent OCWD KY1694 (Penny Lane) and US42 Buckeye Lane to KY1694 Water Main Extension, it appears that the Stotts Construction Co. Inc. has a capable record of performance on similar projects.

If you have any questions or comments, please contact me.

Sincerely,

Nicholas Gunselman, PE
Project Manager

Attachment: Certified Bid Tab

Project Title:	OCWD US42 Water Main Extension KY1694 to KY393
WRIS#:	WX21185064
Budget Description:	As-Bid
Date:	11/2/2026

	Cost Classification	SRF KIA Loan	Local Funds	Unfunded Costs	Total
1	Aministrative Expenses	$ 10,000.00			$ 10,000.00
2	Legal Expenses	$ 15,000.00			$ 15,000.00
3	Land, Appraisals, Easements	$ 265,000.00			$ 265,000.00
4	Relocation Expenses and Payments				$ -
5	Planning	$ 12,600.00			$ 12,600.00
6	Engineering Fees - Design/Construction	$ 282,661.00			$ 282,661.00
7	Engineering Fees - Inspection	$ 150,000.00			$ 150,000.00
8	Engineering Fees - Other	$ 56,000.00			$ 56,000.00
9	Construction	$ 4,428,815.01			$ 4,428,815.01
10	Equipment				$ -
11	Miscellaneous				$ -
12	Contingencies	$ 908,984.99			$ 908,984.99
	Total	**$ 6,129,061.00**			**$ 6,129,061.00**



Exhibit 4

HORIZONTAL SCALE: 1" = 10,000'-0"

5000' 10,000' 20,000' 30,000'

PROPOSED 12" HDPE WATER MAIN

OHIO RIVER

OHIO RIVER

US 42

US 42

MORRIS CREEK

BULL CREEK

LIBERTY TRACE

SHILOH FARMS

OLD TAYLOR PLACE

UNKNOWN TRIBUTARY

HARRODS CREEK

KY 393

BRADFORD FARMS

KY 1694

BUCKEYE TRACE

HARRODS CREEK

I - 71

I - 71

LEGEND

- OLDHAM COUNTY BOUNDARY
- OCWD SERVICE ARE
- MAJOR ROADWAYS
- STREAMS
- LIBERTY LANE TANK
- SUBDIVISION
- OCWD WTP

GRW PROJECT NO. 5296

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SERVICE AREA MAP

US 42 WATER MAIN EXTENSION
KY1694 TO KY393
OLDHAM COUNTY, KENTUCKY

DESIGNED:
DRAWN:
REVIEWED:
APPROVED:

REVISIONS

NO.	DESCRIPTION	DATE	BY

THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED
SCALE CHECK:

DATE:
NOVEMBER, 2026

SCALE:
AS SHOWN

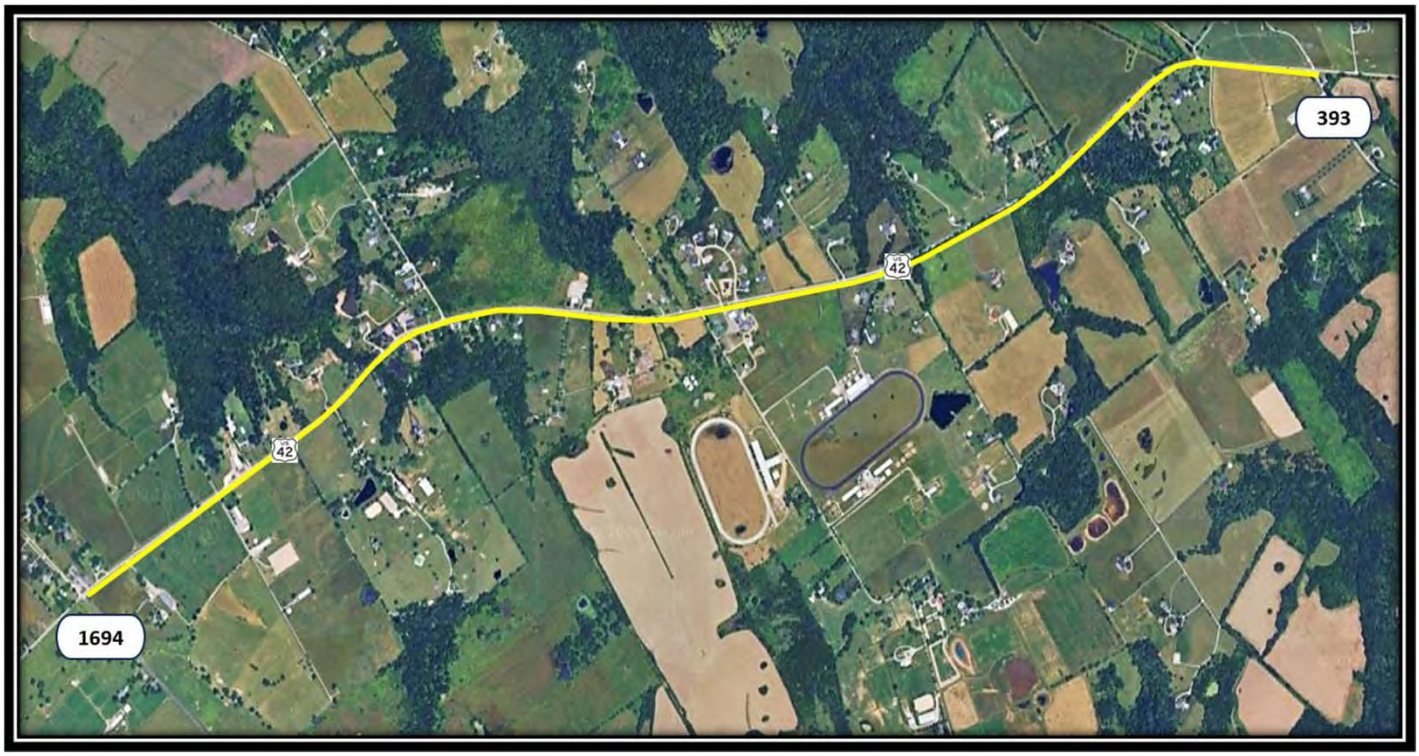
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FILE NAME: G:\5180-OCWD US42W Ph2\Permits\OCWD-Service Area Map.dwg

Exhibit 5

Preliminary Engineering Report
for
US42 Water Main Extension – KY1694 to KY393



August, 2026

STATE OF KENTUCKY
NICHOLAS W. GUNSELMAN
32485
LICENSED PROFESSIONAL ENGINEER
9/10/2026

PRELIMINARY ENGINEERING REPORT
US42 Water Main Extension - KY1694 to KY393

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Cost Estimates

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Recommendation Page 9

Appendix A - Selected Alt. Location Map

GRW | engineering | architecture | geospatial
10350 Ormbsy Park Place | Suite 101
Louisville, KY 40243
502.489.8484 | www.grwinc.com

PRELIMINARY ENGINEERING REPORT
US42 Water Main Extension - KY1694 to KY393

Introduction

Oldham County Water District (OCWD) retained GRW Engineers Inc. for engineering services including Design, Bidding, Permitting, Construction Administration, and Resident Project Representation for the US42 Water Main Extension - KY1694 to KY393. The objective of the Project is to extend a new water main along US Highway 42 to underserved areas of the OCWD service area.

Statement of Need

Currently there is insufficient pressure and volume to provide needed fire protection to homeowners in this part of OCWD's service area. Additionally, the lack of redundancy in this area puts homeowners at risk for extended periods of loss of water in the event of a break or other failure of the existing 6" line. The extension will increase pressure, provide sufficient volume for fire protection, and improve redundancy for customers in the area.

Evaluation

GRW evaluated different alternatives including water main alignments and material types. For a 12" water main, OCWD typically uses HDPE, PVC, or DI pipe material. Based on pricing provided by Contractors and recent bid tabs, it was determined that HDPE pipe was the most cost-effective material for this project. It provided the lowest linear foot installation cost and allowed Contractor flexibility to install by horizontal direction drilling in difficult locations where open cut might not be feasible.

The Opinion of Probable Project Cost (OPCC) for alternatives includes engineering (Design, Bidding, Construction Administration, Permitting, Resident Project Representative, and Additional Services) costs. An assumed Land Acquisition pricing was included with the Alternative A and B, but not Alternative C. Construction Contingencies of 30% were used for all alternatives due to potential variations in quantity, volatility of unit prices for the water main material, and unforeseen conditions along the route at the PER level.

Alternatives

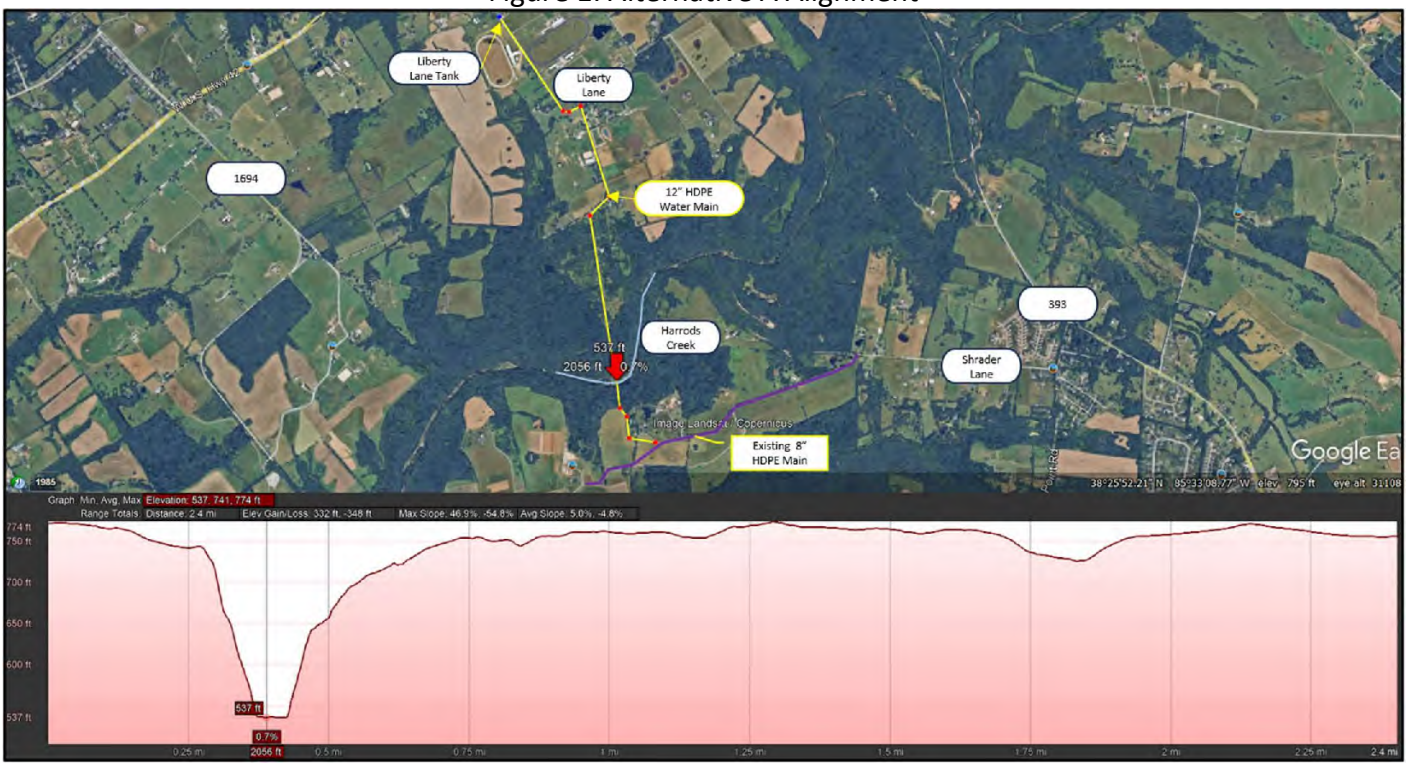
Three alignment alternatives were evaluated for the project using HDPE as the water main material.

Alternative A

Alternative A evaluated going "cross country" for approximately 15,000 feet with a 12-inch water main from a line connecting Shrader Lane to Halls Hill Lane, west of KY-393, to the Liberty Lane 150,000 gallon elevated storage tank. This option would require traversing Harrods Creek, with bore and jack installation the most likely installation procedure. It would involve multiple easements to get from the connection point to a ROW of Liberty Lane north of Harrods Creek. Additionally, it would require nearly 2 acres of tree removal to create a utility easement, and at best would have limited access for inspections and maintenance. Very preliminary cost estimates put this option similar to the Alternative B below, but with far greater logistical issues and would entail a larger contingency value in the cost estimate for unforeseen conditions. It is reasonable to assume extensive geotechnical, ecological, and environmental assessment services would be required for this alternative. Finally, this alternative did not meet the statement of needs by extending service far enough to the west to resolve flow/pressure and fire protection issues in the service area. This option was not investigated any further.

An overview of the Alternative A alignment can be found in Figure 1 below.

Figure 1: Alternative A Alignment



Alternative B

Alternative B evaluated going "cross county", behind private farmland, with the water main alignment between KY1694 and KY393 and included areas within the southern right-of-way of US42. The advantages of this approach include:

Easier construction	Water main would mostly be installed in open farm land away from existing utilities and maintenance of traffic requirements along US42. It avoids some difficult construction areas along US42.
Eliminates the Need for Stream Crossings	Four stream crossings would be eliminated with this approach.

The disadvantages of this approach include:

Easement Acquisition	OCWD would need to acquire numerous easements from different property owners which could take time and money to acquire.
Alignment length	Alignment is approximately 4,000 LF longer than Alternative C, which will increase costs.
Accessibility for Future Maintenance	Valves (gate and air release), fire hydrants, and piping would be in locations that aren't easily accessible for routine maintenance.
Future tie-ins	Less opportunities to connect to water main in the future if growth occurs along US42.

An overview of the Alternative B alignment can be found in Figure 2 below.

Figure 2: Alternative B Alignment



Table 1 below represents the preliminary cost estimate associated with construction of Alternative B. This pricing also included multiple easement acquisitions across properties on the south side of US42.

Table 1: Alternative B OPPC

engineering | architecture | geospatial	Project:	US42 Water Main Extension - Alternative B		
	Owner:	OCWD		
	Project No.:	5180		
Opinion of Total Probable Project Cost	Date:	08/05/26		
	Estimator:	NWG	Type:	Preliminary

	No. of Units	Units of Measure	Unit Cost	Total Cost
Mobilization/Demobilization	1	EA	$ 2,500.00	$ 2,500.00
12-Inch HDPE Main	20,625	LF	$ 150.00	$ 3,093,750.00
24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor Ln. w/ Casing Spacers	70	LF	$ 450.00	$ 31,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath KY 393 w/ Casing Spacers	180	LF	$ 400.00	$ 72,000.00
14-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 15,000.00	$ 15,000.00
12-inch Gate Valve and Box	5	EA	$ 7,500.00	$ 37,500.00
12-inch Dry Connect	1	EA	$ 7,500.00	$ 7,500.00
6-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 7,500.00	$ 7,500.00
6-inch Dry Connect	1	EA	$ 5,000.00	$ 5,000.00
Air Release Valve and Vault	9	EA	$ 12,000.00	$ 108,000.00
6-inch Fire Hydrant Assembly	12	EA	$ 17,500.00	$ 210,000.00
Ductile Iron Fittings	1.5	TON	$ 7,500.00	$ 11,250.00
Asphalt Drive Replacement	95	LF	$ 145.00	$ 13,775.00
Gravel Drive Replacement	20	LF	$ 25.00	$ 500.00
			Subtotal	$ 3,660,775.00
Land Acquistion				$ 265,000.00
Construction Contingencies (30%)				$ 1,098,232.50
			Opinion of Total Probable Construction Cost	$ 5,024,007.50
Engineering (Design, Bidding, CA, and Other Services)*				$ 501,261.00
			Opinion of Total Probable Project Cost	$ 5,525,268.50

*Other Services include PER, FER, Permits, Survey and PSC assistance. Permits assumed include KDOW Construction, KDOW and USACE Stream Crossing, and KYTC and Oldham County Encroachment

Alternative C

Alternative C evaluated installing the water main within the southern right-of-way of US42 for the full length of the alignment between KY1694 and KY393. The advantages of this approach include:

No Easement Acquisition	With the water main located in the US42 right-of-way, no easements are required. This eliminates the need for easement negotiations and costs.
Alignment Length	Alternative 2 alignment is approximately 4,000 LF shorter, which will decrease costs.
Accessibility for Future Maintenance	Valves (gate and air release), fire hydrants, and piping would be in locations that are easily accessible for routine maintenance. They can also be observed from a road, so if a leak were to occur it could be visually identified easier.
Future tie-ins	Water main would be accessible to any future developments along US42 that would require a tie-in or need fire protection.

The disadvantages of this approach included:

Maintenance of Traffic	Contractor will be required to adhere to KYTC standards for maintenance of traffic along full alignment.
Stream Crossings	Four stream crossings would be required.
Constructability	Sections of US42 have limited flat right-of-way for water main installation, which will require slower and more difficult installation compared to open farm fields.

An overview of the Alternative C alignment can be found in Figure 3 below.

Figure 3: Alternative C Alignment

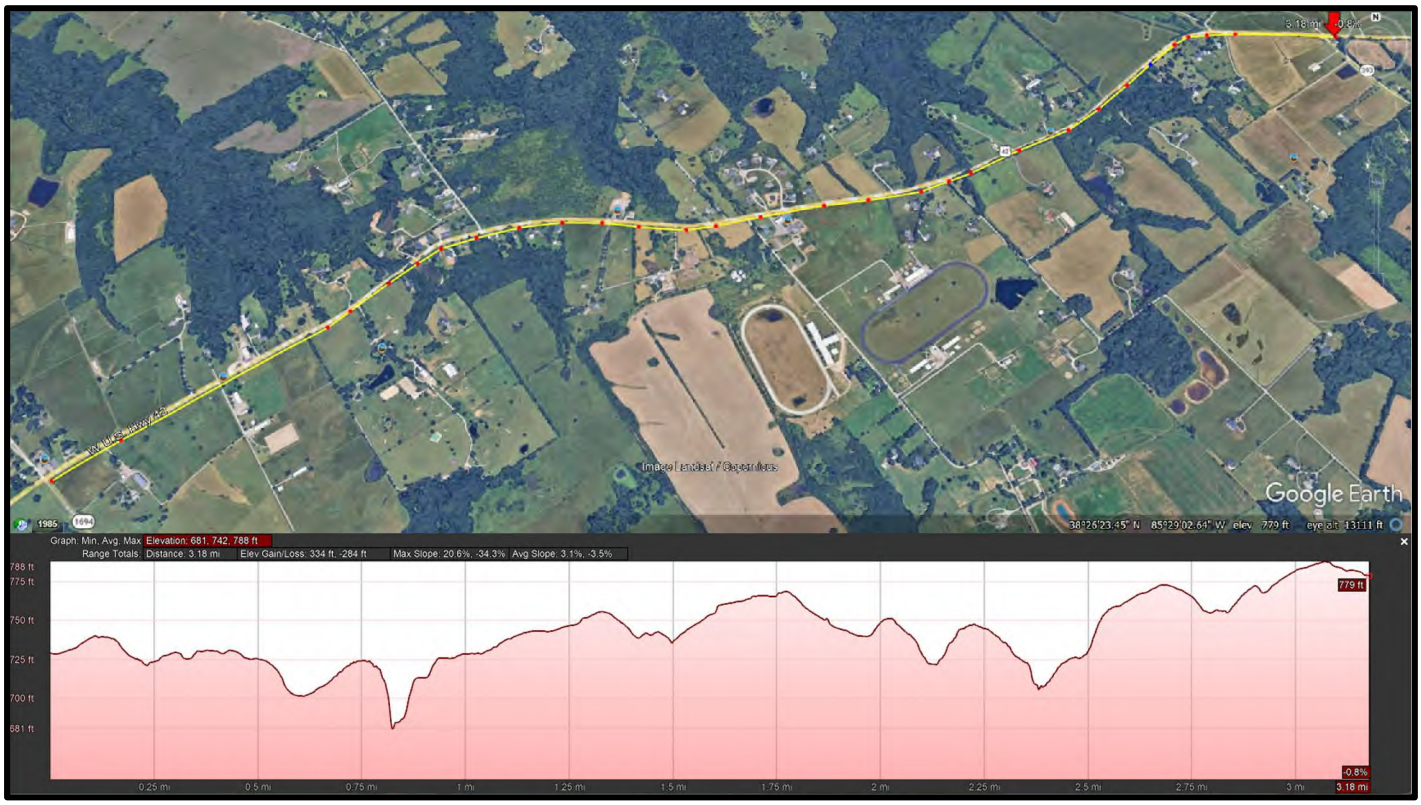


Table 2 below represents the preliminary cost estimate associated with construction of Alternative C.

Table 2: Alternative C OPPC

engineering | architecture | geospatial	Project:	US42 Water Main Extension - Alternative C		
	Owner:	OCWD		
	Project No.:	5180		
Opinion of Total Probable Project Cost	Date:	08/05/26		
	Estimator:	NWG	Type:	Preliminary

	No. of Units	Units of Measure	Unit Cost	Total Cost
Mobilization/Demobilization	1	EA	$ 2,500.00	$ 2,500.00
12-Inch HDPE Main	16,700	LF	$ 150.00	$ 2,505,000.00
Blue Line Stream Crossing (4)	500	LF	$ 500.00	$ 250,000.00
24-inch Steel Casing Pipe Bored & Jacked beneath US Hwy 42 w/ Casing Spacers	45	LF	$ 450.00	$ 20,250.00
24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor Ln. w/ Casing Spacers	70	LF	$ 450.00	$ 31,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Ln. w/ Casing Spacers	50	LF	$ 450.00	$ 22,500.00
24-inch Steel Casing Pipe Bored & Jacked beneath KY 393 w/ Casing Spacers	180	LF	$ 400.00	$ 72,000.00
14-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 15,000.00	$ 15,000.00
12-inch Gate Valve and Box	5	EA	$ 7,500.00	$ 37,500.00
12-inch Dry Connect	1	EA	$ 7,500.00	$ 7,500.00
6-inch Wet Connect w/ Tapping Sleeve, Valve and Box	1	EA	$ 7,500.00	$ 7,500.00
6-inch Dry Connect	1	EA	$ 5,000.00	$ 5,000.00
Air Release Valve and Vault	9	EA	$ 12,000.00	$ 108,000.00
6-inch Fire Hydrant Assembly	12	EA	$ 17,500.00	$ 210,000.00
Ductile Iron Fittings	1.5	TON	$ 7,500.00	$ 11,250.00
Asphalt Drive Replacement	370	LF	$ 145.00	$ 53,650.00
Concrete Drive Replacement	70	LF	$ 150.00	$ 10,500.00
Gravel Drive Replacement	100	LF	$ 25.00	$ 2,500.00
Permeable Paver Drive Replacement	25	LF	$ 50.00	$ 1,250.00
Sidewalk Replacement	6	LF	$ 75.00	$ 450.00
			Subtotal	$ 3,396,350.00
Construction Contingencies (30%)				$ 1,018,905.00
			Opinion of Total Probable Construction Cost	$ 4,415,255.00
Engineering (Design, Bidding, CA, and Other Services)*				$ 501,261.00
			Opinion of Total Probable Project Cost	$ 4,916,516.00

*Other Services include PER, FER, Permits, Survey and PSC assistance. Permits assumed include KDOW Construction, KDOW and USACE Stream Crossing, and KYTC and Oldham County Encroachment

Funding

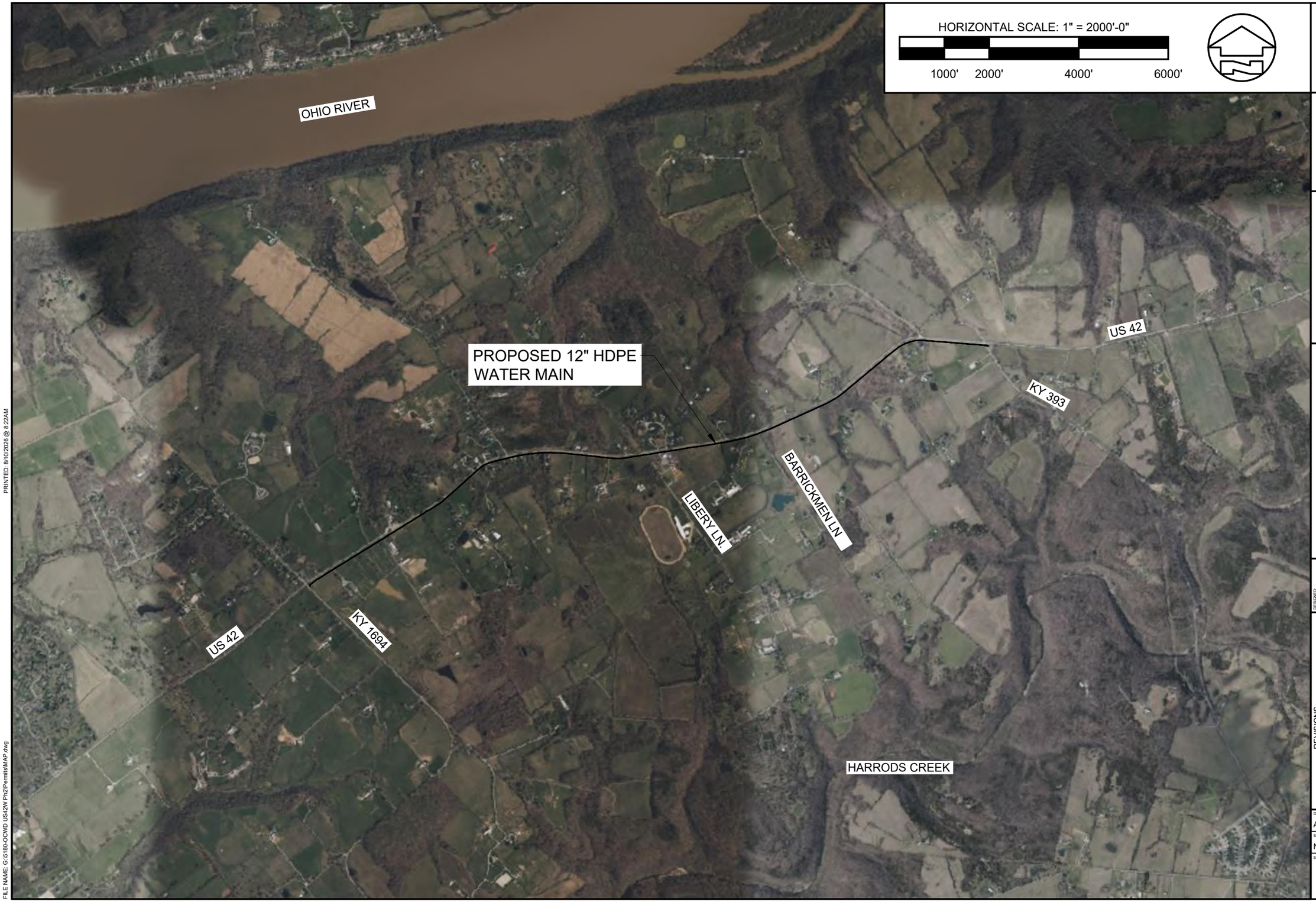
OCWD submitted a request for, and received funding through, the Kentucky Infrastructure Authority Fund C Program, for a total budget of $6,129,161 which includes contingencies of $1,231,900. The project profile (WX21185064) assumed approximately 22,300 linear feet of 12-inch HDPE water main along US 42 from KY393 to KY1694. Refinements, cost variations in materials, and other engineering services result in the OPPCs shown for Alternatives B and C.

RECOMMENDATION

GRW recommends proceeding with Alternative C using HDPE pipe. HDPE is lower cost and better suited due to its flexibility in installation than PVC and DI because of the elevation changes along the route. It will better accommodate bends and angular changes, in both horizontal and vertical directions, reducing or eliminating the risk of leaking joints and does not require thrust blocks or other methods to ensure water line stability. With four stream crossings in the planned route, HDPE provides better environmental protection than PVC and DI. In addition to cost, Alternative C provides several distinct advantages to Alternatives A and B that will benefit OCWD today and in the future with maintenance and growth.

Appendix A

Selected Alt. Location Map



HORIZONTAL SCALE: 1" = 2000'-0"

1000' 2000' 4000' 6000'

GRW PROJECT NO. 5296

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SELECTED ALT. - ALT 3

US 42 WATER MAIN EXTENSION
KY1694 TO KY393
OLDHAM COUNTY, KENTUCKY

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DESIGNED:
DRAWN:
REVIEWED:
APPROVED:

SCALE CHECK: | THIS MARK SHOULD MEASURE EXACTLY 1/2" WHEN PLOTTED

DATE:
AUGUST, 2026

SCALE:
NTS

SHEET NO.
EXH 1

PRINTED: 8/10/2026 @ 8:22AM

FILE NAME: G:\5180-OCWD_US42W Ph2\Permits\MAP.dwg

Exhibit 6

RECEIVED

SEP 19 2023

PUBLIC SERVICE COMMISSION

Kentucky Public Service Commission

P.O. Box 615

Frankfort, KY 40602

September 14, 2023

Request For Intervention in Oldham County Water District Application for Rate Increase

I am Robert Jefferson, President of the Buckeye Trace Homeowners Association Board of Directors. Buckeye Trace is a subdivision in Oldham County KY. All of our residents are Oldham County Water District customers. The attached document provides details of our request to intervene in the pending Oldham County Water District Application for a rate increase. Our request is to apply a specific condition to any approval that the Kentucky Public Service Commission may grant pursuant to this rate increase application.

Thank you for your consideration of this request. My contact information is below.

Respectfully submitted



Robert Jefferson

President, Buckeye Trace Homeowners Association

11000 Buckeye Trace

Goshen, KY 40026

Email: [redacted]

Phone: [redacted]

Before the Public Service Commission of Kentucky

Request to Intervene in Oldham County Water District Application for Rate Increase

Summary

The Buckeye Trace Homeowners Association (BTHOA) respectfully submits this request to intervene in the application by the Oldham County Water District (OCWD) for a rate increase to the Kentucky Public Service Commission. The BTHOA is comprised of 33 residences in a subdivision in Oldham County, all of whom are customers of OCWD. Our request is that any grant for a rate increase must be made under the condition that OCWD commit to infrastructure improvements which ensure adequate water supply for firefighting and public safety purposes.

The Issue

In May 2020, there was a fatal house fire within the BTHOA subdivision. The primary fire protection provider for our surrounding area is the North Oldham Fire Department (NOFD). Subsequent to this tragedy, the BTHOA has undertaken efforts jointly with NOFD to advocate for measures that will improve firefighting capabilities in our area and potentially save lives and better protect property. Our partner in these efforts is the Chief of NOFD, Fire Chief Hewett Brown. The immediate issue at hand is that the far Western part of the OCWD service area is at the furthest geographical point from the source of water supply. Because we are at "the end of the line" from OCWD's water source in Westport KY, fire hydrants are essentially useless. Hydrant supply is quickly exhausted, and this means that water tankers are the only practical solution for fighting significant fires. Refilling water tankers at a site several miles away from our neighborhood and transversing a narrow hilly road proved to be a significant obstacle in our 2020 fire tragedy. This history is doomed to repeat itself without adequate water supply line infrastructure improvements.

Section 7.3 of Oldham County Subdivision Regulations dictates Fire Protection Standards that must be met for approval of new developments. The inadequate water supply in our geographical area falls far short of current standards, as many of our older subdivisions and homes were built prior to the current standard.

The Solution

After the 2020 fire, the BTHOA Board and NOFD Fire Chief Brown met with the CEO of OCWD, Russ Rose. Mr Rose acknowledged the safety issue that is present in our part of his service district. It was also recognized that other nearby customers, such as the

adjacent Old Taylor Place subdivision of several hundred homes and the Francis Parker School all face similar issues from inadequate water supply for firefighting. Mr Rose committed to an engineering study to map out the requirements to remediate this issue. The improvements were likely to include larger water lines to be laid parallel to Hwy 42 from an Eastern point of stronger water supply (such as Liberty Lane) out to the intersections feeding Old Taylor Place and all customers on North and South Buckeye Lane. While my understanding is that this engineering study has been initiated, I don't know if it has been completed. Other necessary steps such as easement acquisition and securing financing are possibly underway, but the BTHOA Board has not been able to receive a current status update. There have been no public meetings on this initiative, that I am aware of.

BTHOA Request

The BTHOA is not taking issue with the need for the rate request submitted by the OCWD. Our understanding is that their last rate increase was in 2009. We can appreciate the impact of inflation on their cost structure since that time. Our request is that any approval of OCWD rate increase be conditional. The condition that the BTHOA is requesting is that OCWD commit to a construction plan which will ensure that water supply to our area meet or exceed Section 7.3 Fire Protection Standards of Oldham County Subdivision Regulations. The timetable for the commencement and conclusion of this construction plan must be mutually agreed to by the BTHOA, the NOFD and the OCWD.

Respectfully submitted September 14, 2023

Robert Jefferson

President, Buckeye Trace Homeowners Association

Phone: [redacted]

Email: [redacted]

Address: 11000 Buckeye Trace

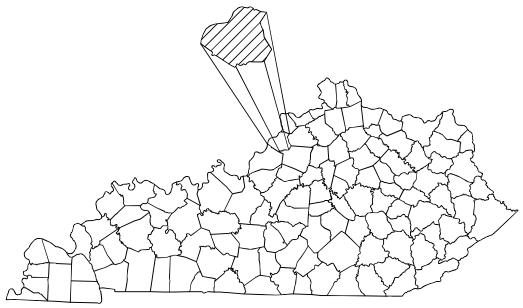
Goshen, KY 40026

Exhibit 7

OLDHAM COUNTY WATER DISTRICT
US42 WATER MAIN EXTENSION
KY1694 TO KY393

OLDHAM COUNTY, KENTUCKY

OLDHAM COUNTY



OLDHAM COUNTY WATER DISTRICT

DWG. No. INDEX OF DRAWINGS

G-00-002 -	VICINITY MAP, LEGEND & UTILITY INFORMATION
CU-00-101 -	12" WATER MAIN PLAN - STA. 0+00 TO STA. 12+00
CU-00-102 -	12" WATER MAIN PLAN - STA. 12+00 TO STA. 27+00
CU-00-103 -	12" WATER MAIN PLAN - STA. 27+00 TO STA. 42+00
CU-00-104 -	12" WATER MAIN PLAN - STA. 42+00 TO STA. 54+00
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CU-00-107 -	12" WATER MAIN PLAN - STA. 81+00 TO STA. 95+00
CU-00-108 -	12" WATER MAIN PLAN - STA. 95+00 TO STA. 109+00
CU-00-109 -	12" WATER MAIN PLAN - STA. 109+00 TO STA. 123+00
CU-00-110 -	12" WATER MAIN PLAN - STA. 123+00 TO STA. 137+00
CU-00-111 -	12" WATER MAIN PLAN - STA. 137+00 TO STA. 151+00
CU-00-112 -	12" WATER MAIN PLAN - STA. 151+00 TO STA. 160+00
CU-00-113 -	12" WATER MAIN PLAN - STA. 160+00 TO STA. 167+24 E.O.L.
CU-00-501 -	WATER MAIN DETAILS
CE-00-501 -	EROSION CONTROL DETAILS AND NOTES

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SEPTEMBER, 2026

BID SET
GRW PROJECT NO. 5180

PRINTED: 9/4/2026 @ 12:17PM

FILE NAME: G:\5180-OCWD LSB42W Ph2\Working Drawings\AutoCAD\5180-G-00-001.dwg



PROJECT MAP
NOT TO SCALE

LEGEND

EX. GUARDRAIL	
EX. SANITARY SEWER	SAN
EX. OVERHEAD ELECTRIC & UTILITIES	OHU
PROPERTY LINE	P/L
RIGHT-OF-WAY	R/W
EX. WATER LINE	W
EX. GAS LINE	G
EX. STREAM	
EX. TELE/FIBER OPTIC	T
EX. FENCE	X
EDGE OF ROAD/CURB/GUTTER/MARKING/ BUILDING/STRUCTURE/LANDSCAPED	
EX. HYDRANT	
TBM (BENCH MARK)	
EX. WATER VALVE	
EX. WATER METER	WM
EX. UTILITY POLE	
EX. TELEPHONE BOX	
PROPOSED AIR RELEASE VALVE (WATER)	
PROPOSED GATE VALVE	
EX. GUY WIRE	
EX. SIGN POST	
EX. MAIL BOX	
CONTROL POINT (CP)	
IRON PIN/PIPE (AS NOTED)	
EX. ELECTRIC TRANSFORMER	ET
EX. ELECTRIC METER	EM
EX. POST	
EX. TELEPHONE PEDESTAL	T
EX. TRAFFIC SIGNAL POLE	

GENERAL NOTES:

1. SEWER, WATER, ELECTRIC, AND TELEPHONE SERVICES TO EXISTING HOUSES ARE NOT INDICATED ON THE DRAWINGS. CONTRACTOR SHALL CALL "BEFORE YOU DIG" TO LOCATE SERVICE LINES AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING SERVICES. ALL DAMAGED UTILITY MAINS AND SERVICES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IMMEDIATELY REPAIRED AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION IN HIS OPERATIONS IN AREAS WHERE PLANS INDICATE THE PRESENCE OF A GAS LINE OR OTHER LINES CARRYING HAZARDOUS MATERIAL.
3. CONTRACTOR SHALL NOT DISRUPT ANY UTILITY SERVICES WITHOUT SCHEDULING AND OBTAINING APPROVAL FROM OWNER.
4. THE UTILITIES AND THEIR LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND VERIFY ALL UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING UTILITY WORK INCLUDING POSSIBLE TEMPORARY SUPPORT OF UTILITY POLES AS REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID EXISTING UTILITIES AND PERFORM ANY REQUIRED REPAIRS IF UTILITIES ARE DAMAGED. IN ADDITION TO ALL UTILITY LINES, THE CONTRACTOR SHALL AVOID AND REPAIR ANY DAMAGE TO FIELD DRAINAGE TILES AND PRIVATE IRRIGATION SYSTEMS. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN UTILITIES OR OTHER SUBSURFACE LINES ARE DAMAGED.
5. PROPERTY LINES AND RIGHT-OF-WAYS SHOWN ARE NOT THE RESULT OF DEED RESEARCH AND SHALL BE CONSIDERED APPROXIMATE.
6. THE AERIAL PHOTOGRAPHS ARE SUBJECT TO SCALE INACCURACIES AND SHOULD NOT BE USED FOR SCALED QUANTITY TAKEOFFS. STATIONS SHOWN ARE FIELD MEASURED.
7. ALL TREES AND SHRUBS IN THE VICINITY OF THE PROPOSED WATER MAIN SHALL BE PROTECTED. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL FROM THE OWNER OR ENGINEER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION FROM EXISTING SEWER MAINS. CROSSINGS SHALL MAINTAIN A MINIMUM OF 18" VERTICAL CLEARANCE WITH THE SEWER BELOW THE WATER MAIN.
9. ALL DISTURBED AREAS SHALL BE RESTORED TO EQUAL TO OR BETTER THAN ORIGINAL CONDITIONS.
10. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, PERFORMED TO THE SATISFACTION OF THE OWNER, COUNTY AND TOWNSHIP ROAD DEPARTMENTS, KY DOT, THE ENGINEER, AND INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
11. WATER MAIN SHALL BE ENCASED IN CONCRETE IN AREAS WHERE 10' SEPARATION FROM EXISTING SEWER LINE CANNOT BE OBTAINED.
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 5FT HORIZONTAL SEPARATION FROM EXISTING UTILITY POLES. WHEN MINIMUM SEPARATION CAN'T BE MAINTAINED CONTRACTOR SHALL NOTIFY OWNER OR ENGINEERS REPRESENTATIVE.
13. THE CONTRACTOR SHALL AVOID CONFLICTS WITH EXISTING HEADWALLS LOCATED WITHIN THE RIGHT-OF-WAY. CONTRACTOR SHALL NOTIFY OWNER OR ENGINEERS REPRESENTATIVE ABOUT ANY POTENTIAL CONFLICTS.

For Buried Line/Cable Locations

** Contact Two Business Days Before **

TWO WORKING DAYS BEFORE YOU DIG CALL 1-800-752-6007 (TOLL FREE) KENTUCKY UTILITIES PROTECTION SERVICE NON-MEMBERS MUST BE CALLED DIRECTLY

Kentucky 811 — Know what's below. Call before you dig. www.kentucky811.com

UTILITY INFORMATION

LaGRANGE UTILITIES (SANITARY)
412 EAST JEFFERSON STREET
LaGRANGE, KY. 40031
(502) 222-9325

KENTUCKY UTILITIES
1100 MAIN STREET
SHELBYVILLE, KY. 40065
(502) 633-2723

LG&E ENERGY
220 WEST MAIN STREET
LOUISVILLE, KY. 40232
(502) 627-3159

BELL SOUTH TELECOMMUNICATIONS
3719 BARDSTOWN ROAD
LOUISVILLE, KY. 40218
(502) 454-9818

TIME WARNER CABLE
4701 COMMERCE CROSSING DRIVE
LOUISVILLE, KY. 40229
(502) 357-4400

ABBREVIATIONS

EOL	END OF LINE
EOP	EDGE OF PAVEMENT
TBR	TO BE REPLACED (SEE CORRESPONDING DETAIL)
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
PVC	POLY VINYL CHLORIDE PIPE
BOL	BEGINNING OF LINE

CONTROL COORDINATES

DATUM:
KENTUCKY STATE PLANE NORTH ZONE (FIPS 1601)
NAD83 (2011)
GEOID18 NAVD88
US SURVEY FEET

POINT ID	NORTH (Y)	EAST (X)	ELEV (Z)	DESC
CP-1	342188.916'	1279554.800'	763.85'	IRON PIN & CAP
CP-2	342250.296'	1279245.579'	755.36'	IRON PIN & CAP
CP-3	339300.069'	1271689.619'	731.45'	IRON PIN & CAP
CP-5	344676.275'	1286857.430'	781.62'	IRON PIN & CAP
CP-6	344637.305'	1287365.131'	775.05'	IRON PIN & CAP

BID SET

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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VICINITY MAP, LEGEND AND UTILITY INFORMATION

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

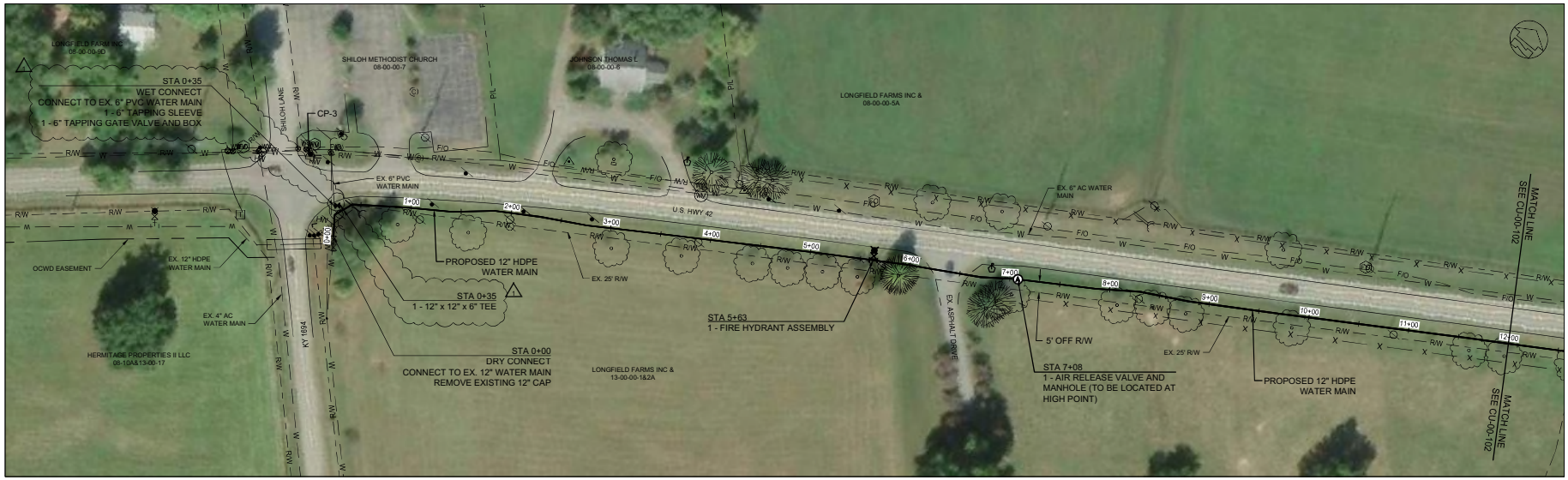
DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

REVISIONS

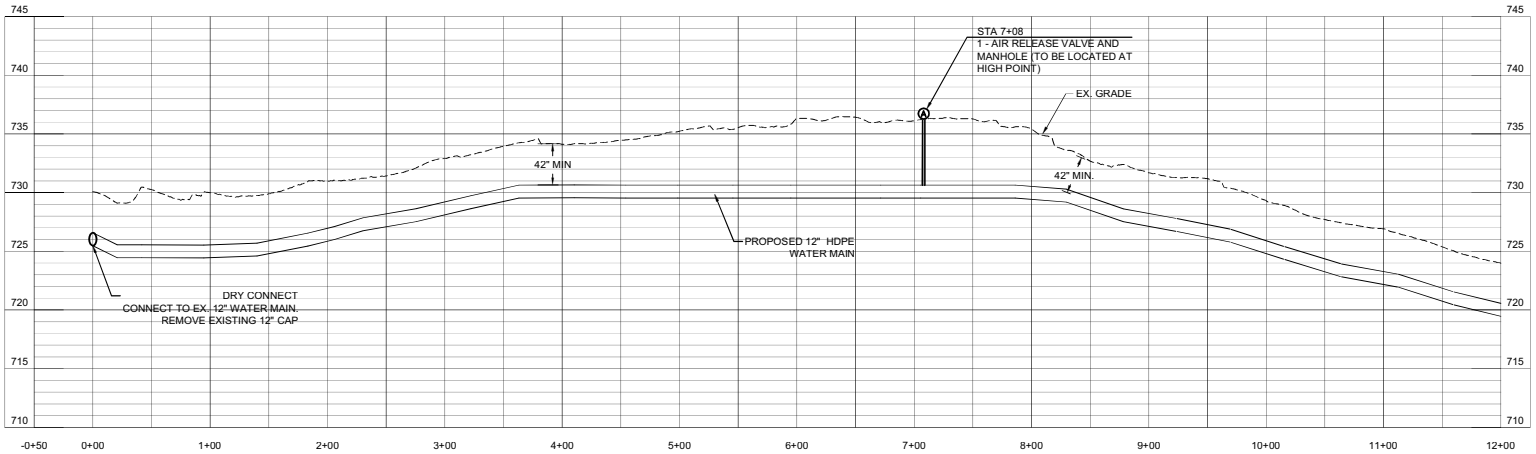
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PRINTED: 9/4/2026 @ 12:17PM
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STA. 0+00 TO STA. 12+00



PROFILE - STA. -0+50 TO STA. 12+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
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HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1" = 5'
0 5'

BID SET

7/3/2026

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CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 00+00 TO STA. 12+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

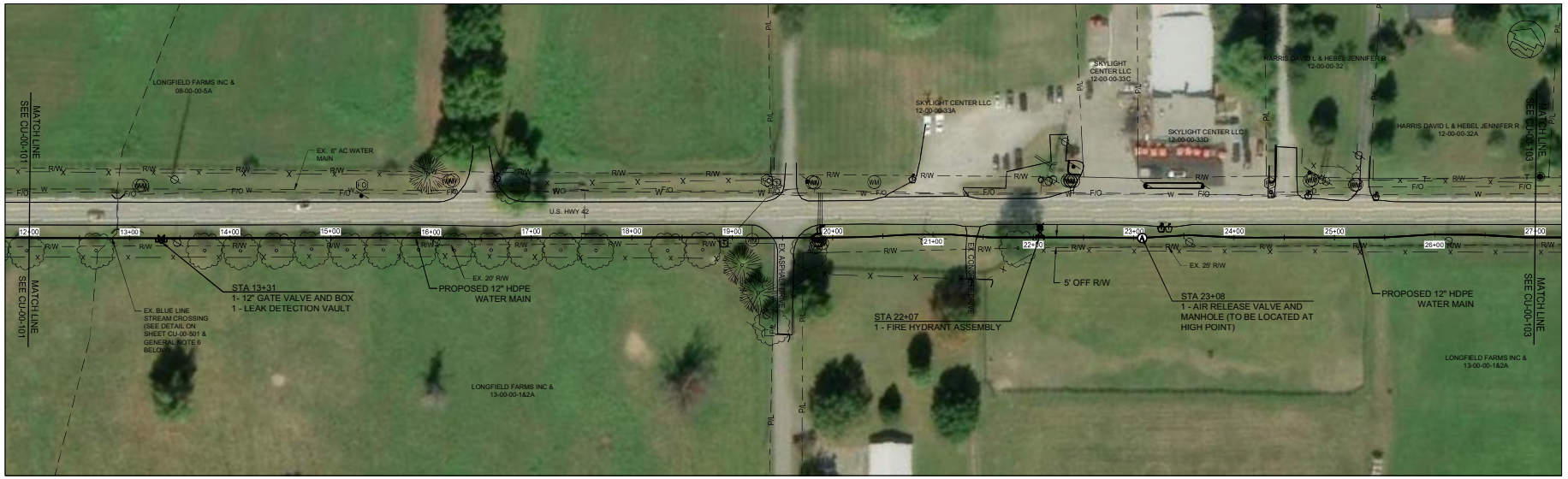
NO.	DESCRIPTION	BY	DATE
1.	ADDENDUM NO. 1	CEK	7-2-26

REVISIONS

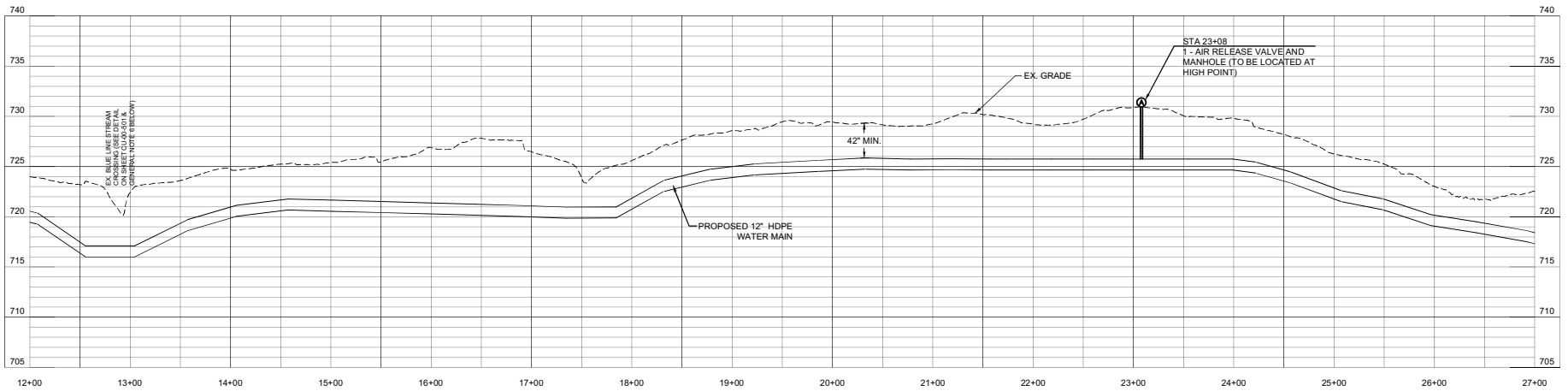
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PLOTTED BY: cknutz
PRINTED: 9-22-2026 @ 11:42 AM
FILE NAME: G:\5180-OCWD LB42W Ph2\Working Drawings\Aus\ACAD\5180-CU-00-101.dwg



STA. 12+00 TO STA. 27+00



PROFILE - STA. 12+00 TO STA. 27+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
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6. CONTRACTOR SHALL FIELD VERIFY THE WIDTH OF STREAM AT LOCATION OF WATER MAIN CROSSING PRIOR TO INSTALLATION AND INFORM ENGINEER OF WIDTH MEASURED. IF STREAM WIDTH IS DETERMINED TO BE LESS THAN 15 LF AT CROSSING LOCATION, CONTRACTOR IS NOT REQUIRED TO INSTALL LEAK DETECTION METER AND ISOLATION VALVE AS SHOWN ON CU-00-501 FOR STREAM CROSSING

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'

BID SET

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CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE STA. 12+00 TO STA. 27+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

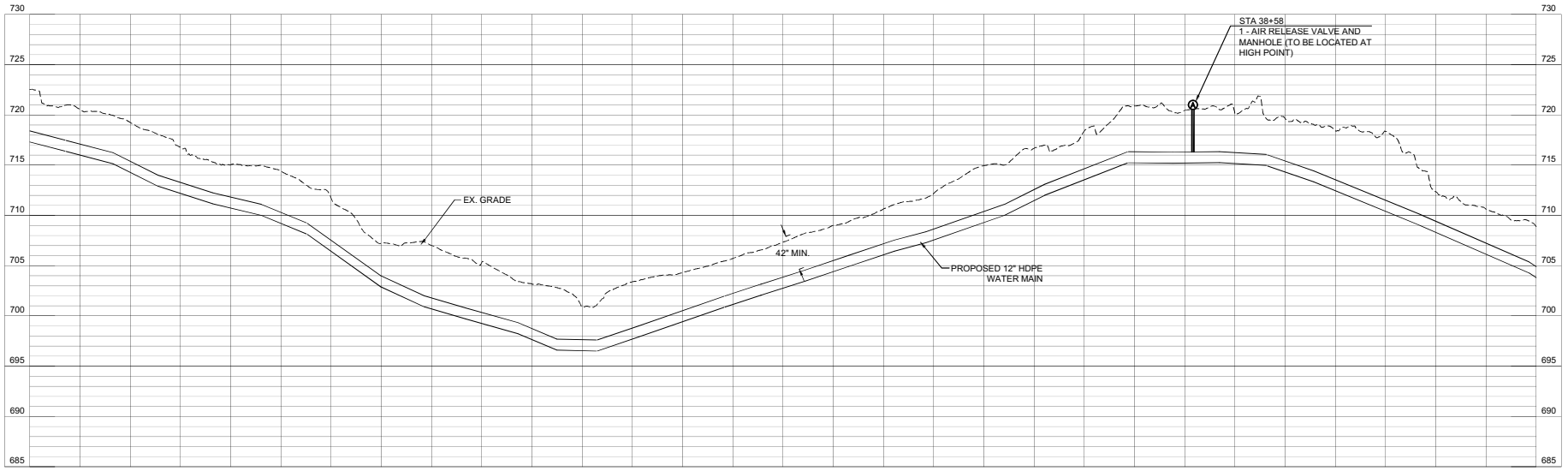
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PLOTTED BY: dwutz
PRINTED: 9/4/2026 @ 12:16PM
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STA. 27+00 TO STA. 42+00



PROFILE - STA. 27+00 TO STA. 42+00 LINE "Water Main Ext."

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'

VERTICAL SCALE: 1"=5'
0 5'

GENERAL NOTES:

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BID SET

7/3/2026

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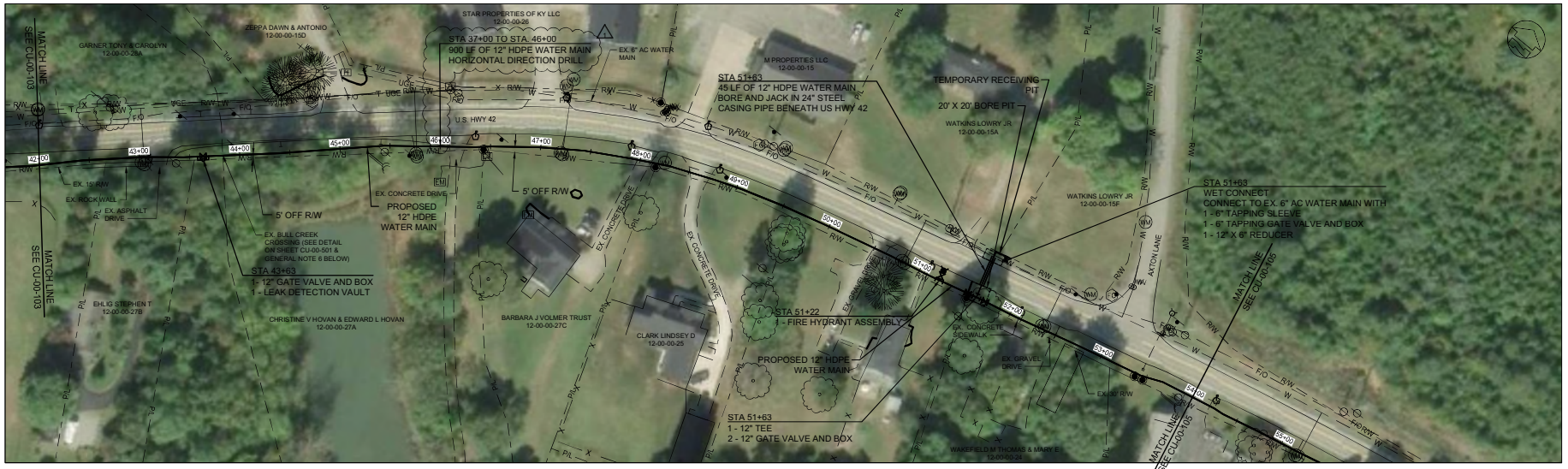
12" WATER MAIN PLAN & PROFILE
STA. 27+00 TO STA. 42+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

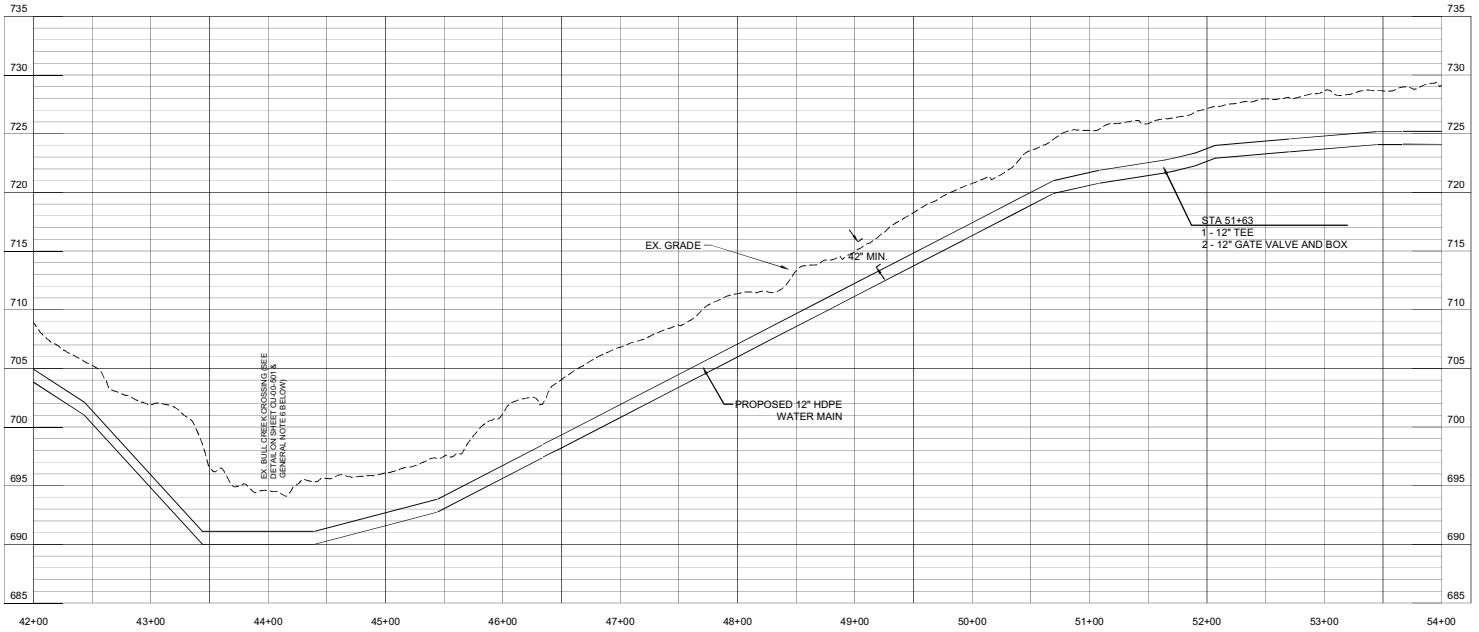
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DATE: SEPTEMBER, 2026
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PRINTED: 9-22-2026 @ 1:49 AM
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STA. 42+00 TO STA. 54+00



PROFILE - STA. 42+00 TO STA. 54+00 LINE "Water Main Ext."

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'
0 5'

GENERAL NOTES:

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BID SET

7/3/2026

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

ALL STUDIES REGARDING PROPERTY OF THE PROJECT AREA ARE PROPRIETARY AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE WHATSOEVER BY OTHERS THAN THIS SPECIFIC PROJECT WITHOUT WRITTEN PERMISSION

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12" WATER MAIN PLAN & PROFILE STA. 42+00 TO STA. 54+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY
1.	ADDENDUM NO. 1	7-7-26	CEK

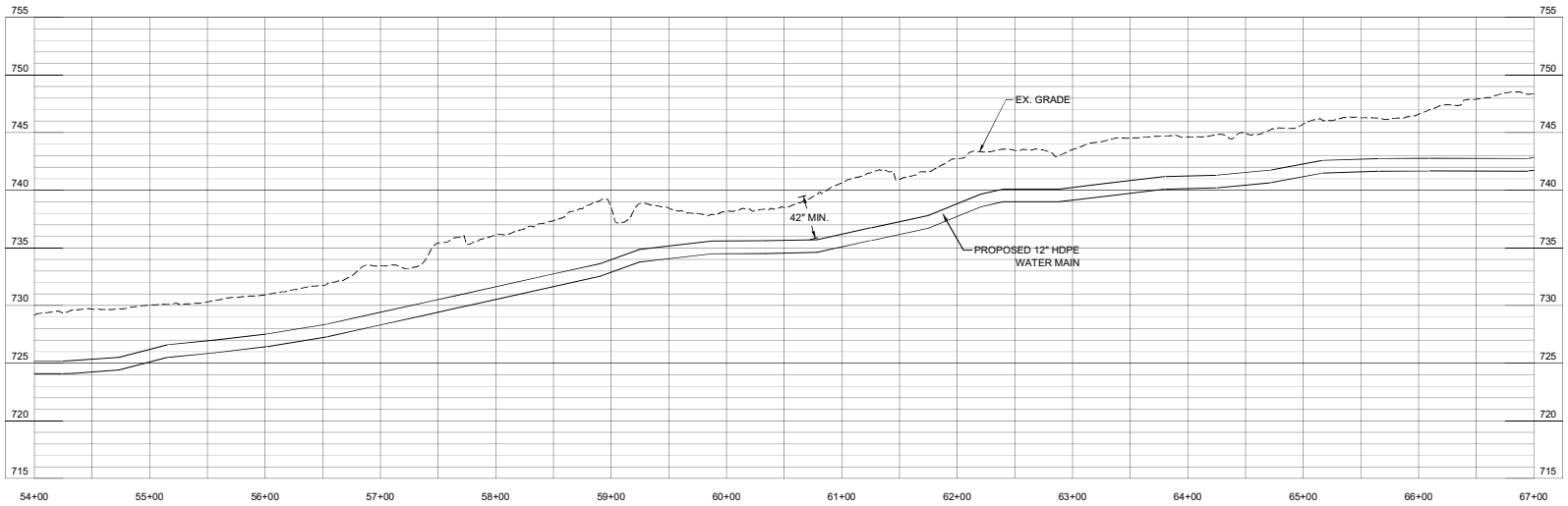
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DATE: SEPTEMBER, 2026
SCALE: 1" = 50'
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PRINTED: 9.2.2/2026 @ 11:55 AM
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STA. 54+00 TO STA. 67+00



PROFILE - STA. 54+00 TO STA. 67+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
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HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'

BID SET

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 54+00 TO STA. 67+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

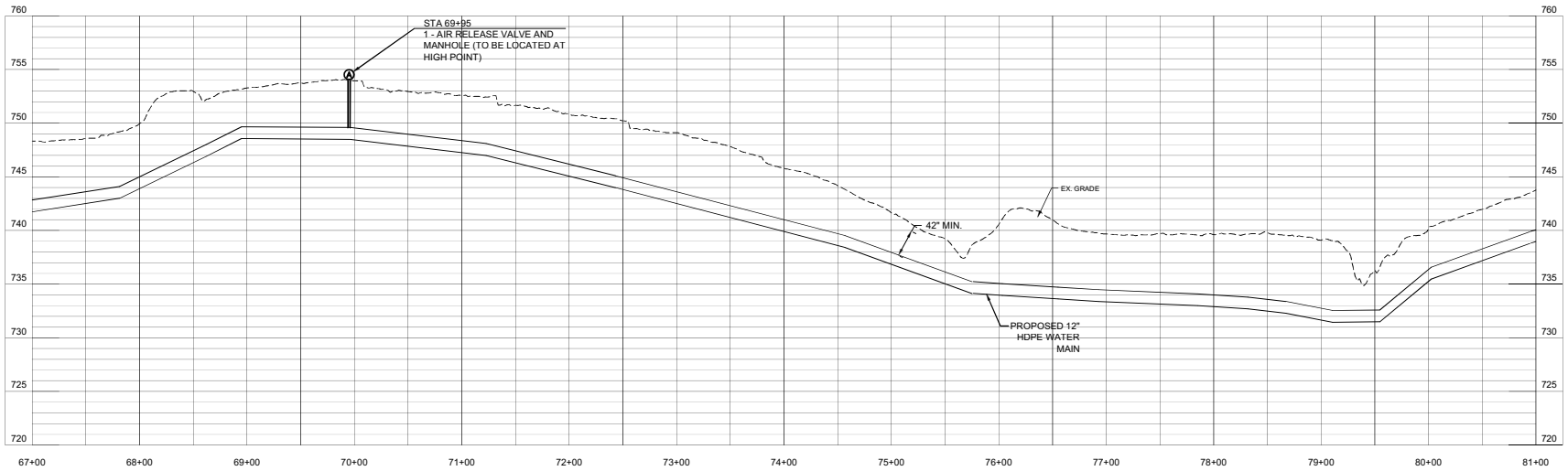
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NO. | DESCRIPTION | DATE | BY

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PLOTTED BY: dkruitz
PRINTED: 9/4/2026 @ 12:14PM
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STA. 67+00 TO STA. 81+00



PROFILE - STA. 67+00 TO STA. 81+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

BID SET

7/3/2026

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE STA. 67+00 TO STA. 81+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY
1.	ADDENDUM NO. 1	7-2-26	CEK

THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

SCALE CHECK

DATE: SEPTEMBER, 2026

SCALE: 1" = 50'

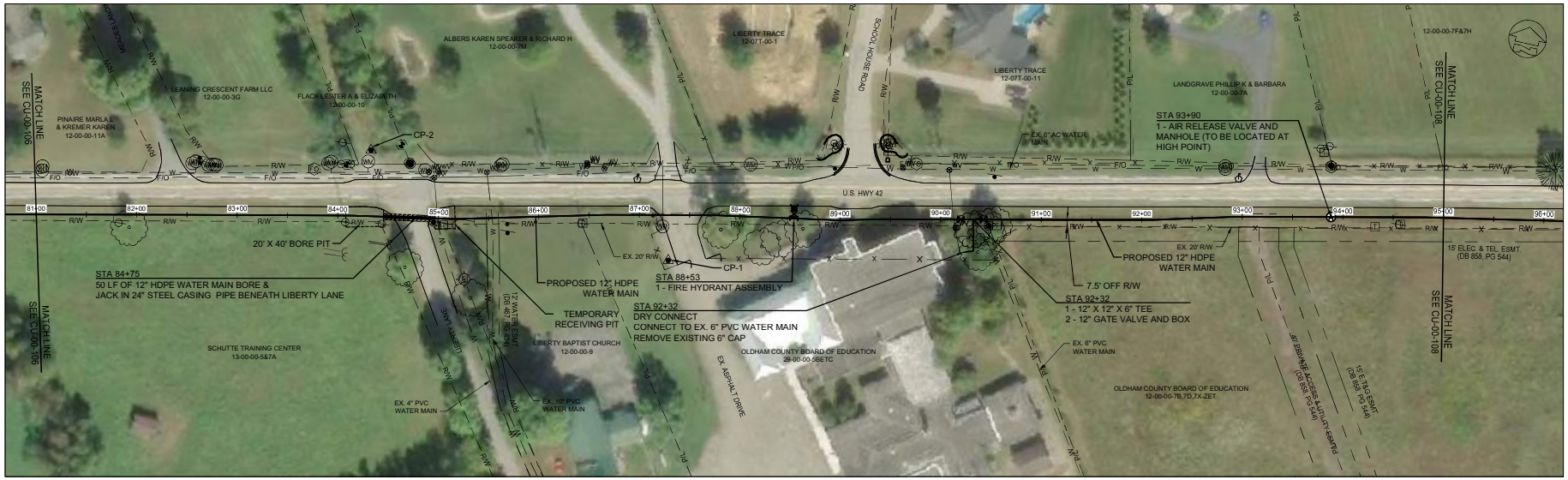
SHEET NO.

CU-00-106

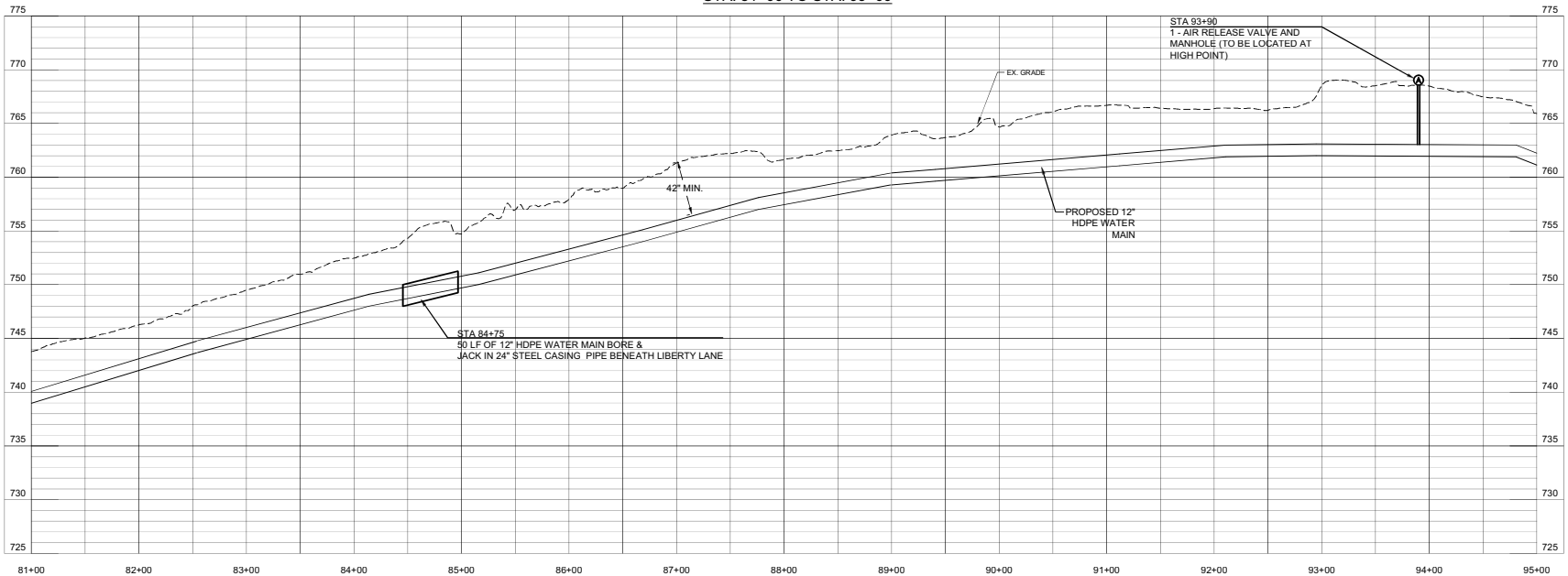
PLOTTED BY: cknutz

PRINTED: 9-22-2026 @ 11:58 AM

FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-106.dwg



STA. 81+00 TO STA. 95+00



GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

PROFILE - STA. 81+00 TO STA. 95+00 LINE "Water Main Ext."

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

BID SET

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

ALL RIGHTS RESERVED. THIS DRAWING IS THE PROPERTY OF GRW ENGINEERS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE WHATSOEVER OTHER THAN THIS SPECIFIC PROJECT WITHOUT PRIOR WRITTEN PERMISSION

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12" WATER MAIN PLAN & PROFILE STA. 81+00 TO STA. 95+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
NWG	CEK	AAB	NWG

REVISIONS

NO.	DATE	BY	DESCRIPTION

THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: SEPTEMBER, 2026

SCALE: 1" = 50'

SHEET NO.

CU-00-107

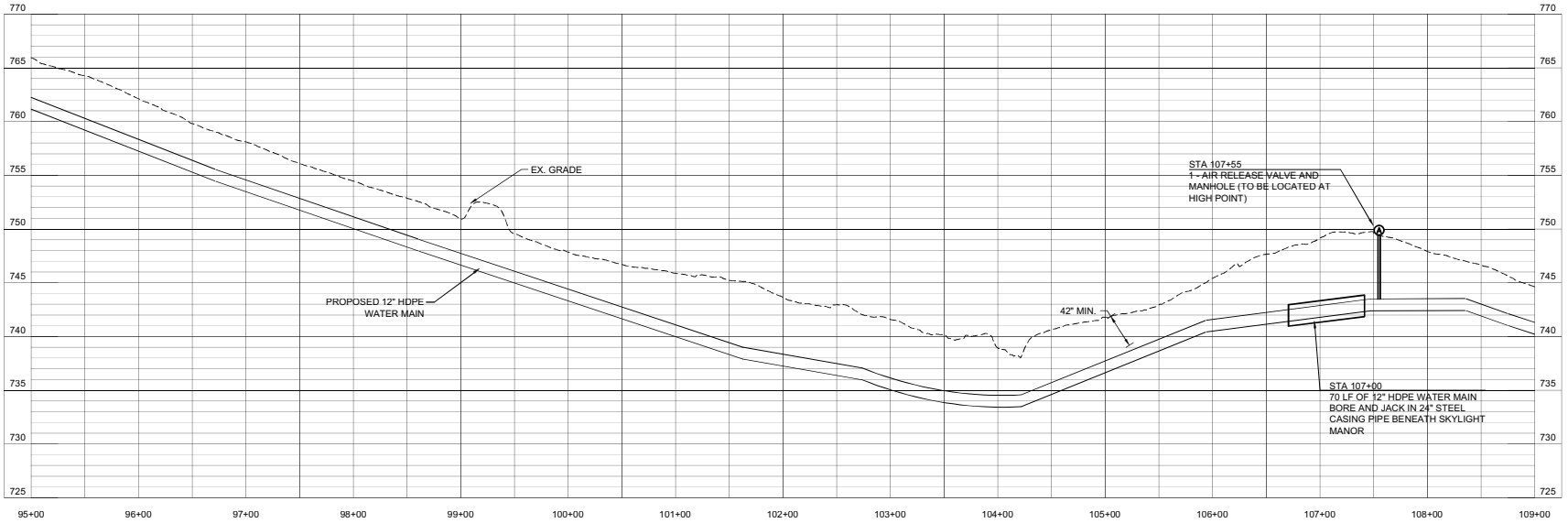
PLOTTED BY: cknutz

PRINTED: 9/4/2026 @ 12:13PM

FILE NAME: G:\5180-OCWD LB42W Ph2\Working Drawings\AutoCAD\5180-CU-00-107.dwg



STA. 95+00 TO STA. 109+00



PROFILE - STA. 95+00 TO STA. 109+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

BID SET

7/3/2026

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 95+00 TO STA. 109+00

US442 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: SEPTEMBER, 2026

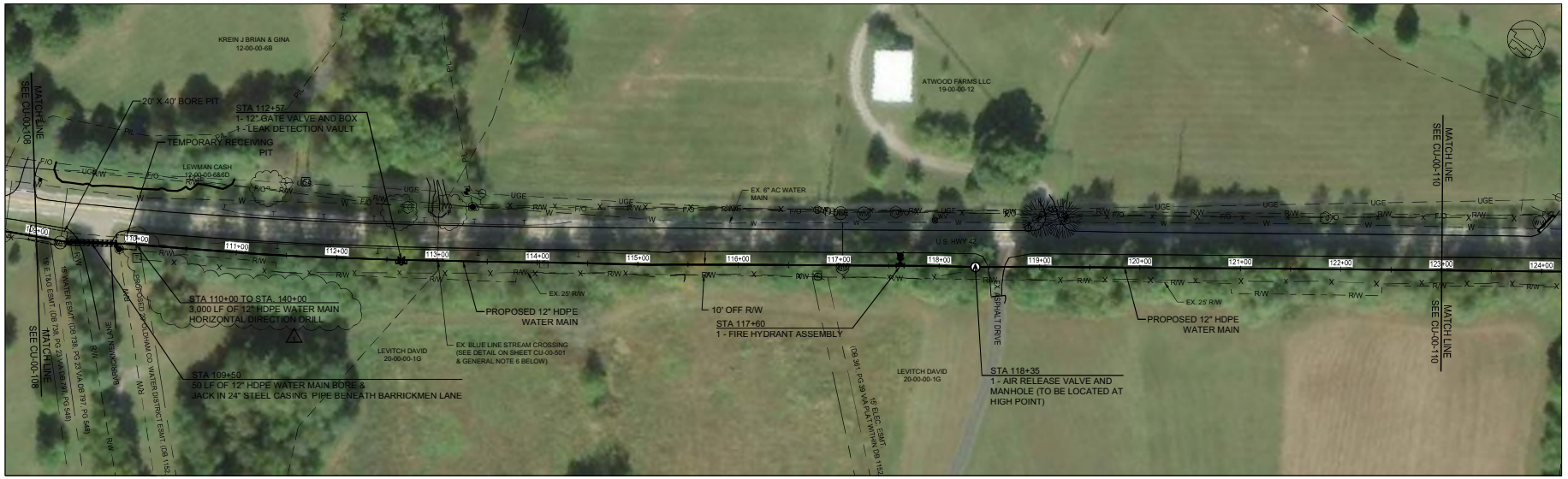
SCALE: 1" = 50'

SHEET NO.: CU-00-108

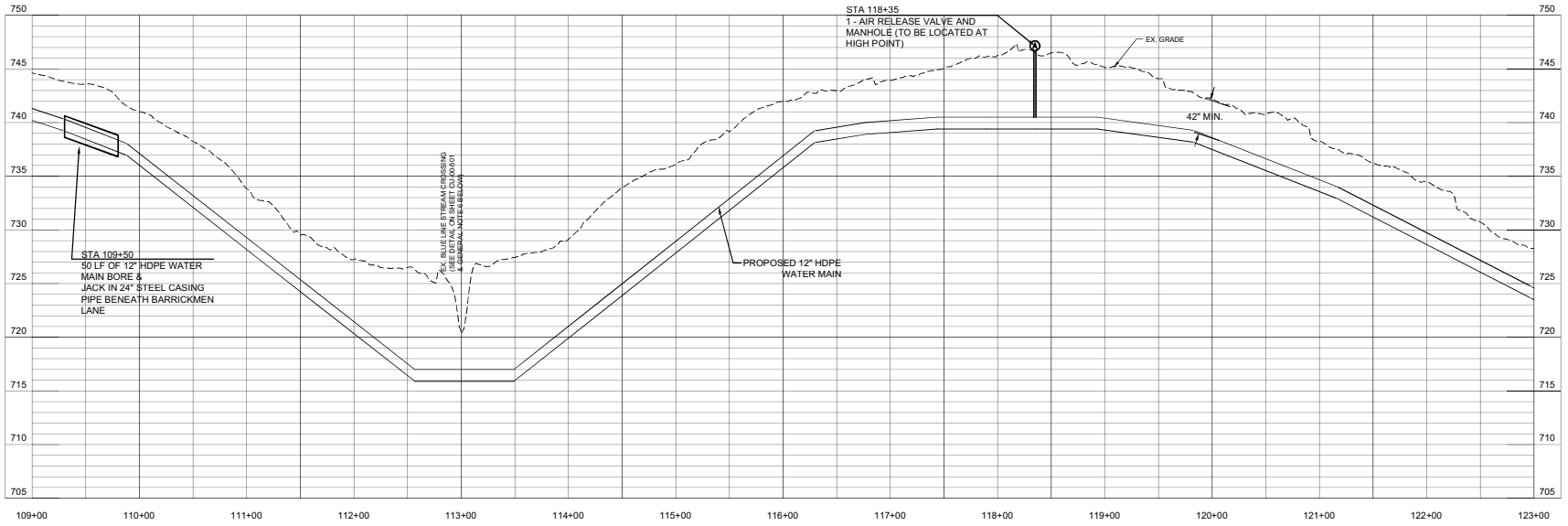
PLOTTED BY: cknutz

PRINTED: 9/4/2026 @ 12:11PM

FILE NAME: G:\5180-OCWD LB42W Ph2\Working Drawings\AutoCAD\5180-CU-00-108.dwg



STA. 109+00 TO STA. 123+00



GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".
6. CONTRACTOR SHALL FIELD VERIFY THE WIDTH OF STREAM AT LOCATION OF WATER MAIN CROSSING PRIOR TO INSTALLATION AND INFORM ENGINEER OF WIDTH MEASURED. IF STREAM WIDTH IS DETERMINED TO BE LESS THAN 15 LF AT CROSSING LOCATION, CONTRACTOR IS NOT REQUIRED TO INSTALL LEAK DETECTION METER AND ISOLATION VALVE AS SHOWN ON CU-00-501 FOR STREAM CROSSING.

PROFILE - STA. 109+00 TO STA. 123+00 LINE "Water Main Ext."

VERTICAL SCALE: 1"=5'
0 5'

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'

BID SET

7/3/2026

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

ALL STUDIES REGARDING PROPERTY OF THE PLANS AND SPECIFICATIONS ARE AS PREPARED AS WHOLE OR IN PART FOR USE ON THIS SPECIFIC PROJECT ONLY AND NOT FOR USE ON ANY OTHER PROJECT WITHOUT WRITTEN PERMISSION

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12" WATER MAIN PLAN & PROFILE
STA. 109+00 TO STA. 123+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

NO.	REVISIONS	DATE	BY
1.	ADDENDUM NO. 1	7-2-26	CEK

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

DATE: SEPTEMBER, 2026
SCALE: 1" = 50'
SHEET NO.
CU-00-109

THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED
SCALE CHECK

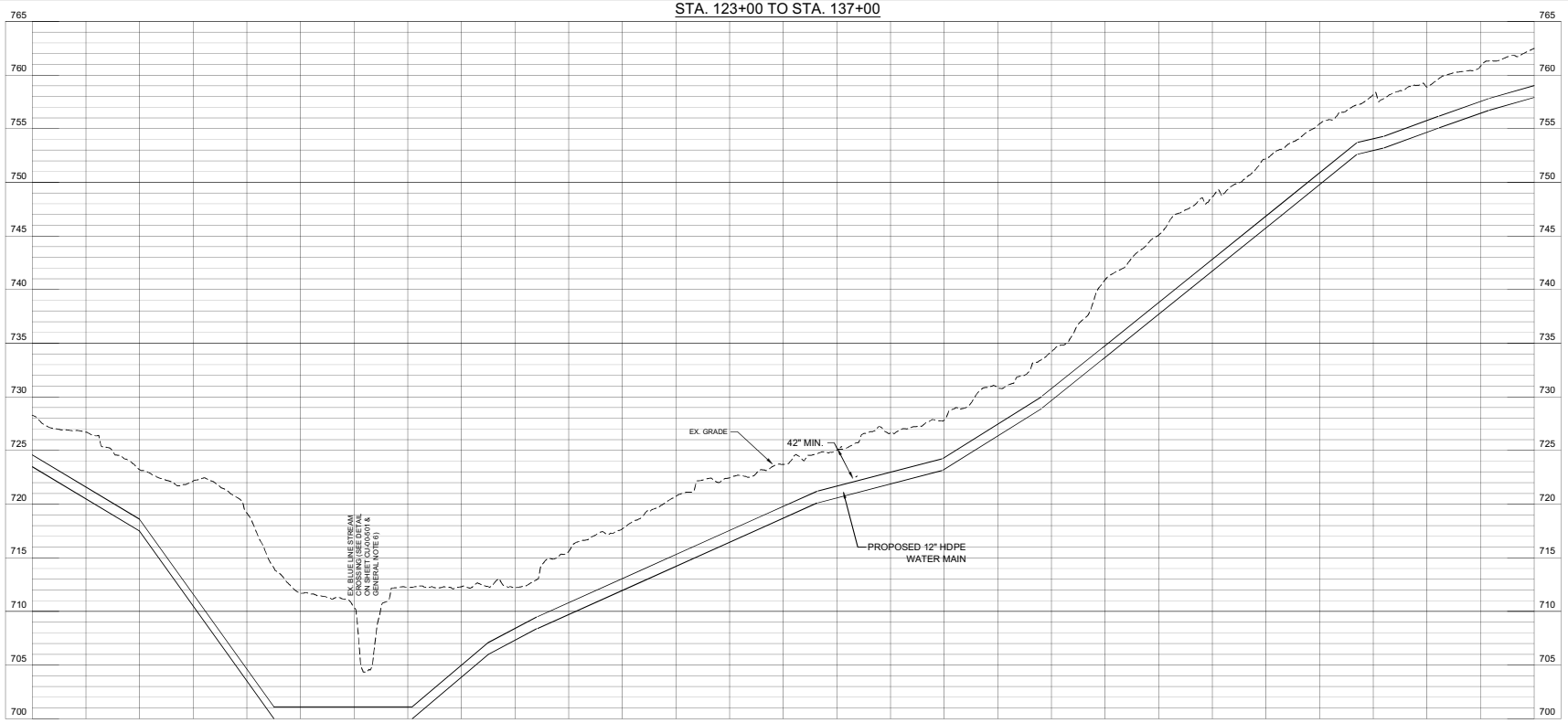
PLOTTED BY: cknutz
PRINTED: 9-22-2026 @ 1:20PM
FILE NAME: G:\5180-OCWD LIB42W Ph2\Working Drawings\AutoCAD\5180-CU00-109.dwg

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".
6. CONTRACTOR SHALL FIELD VERIFY THE WIDTH OF STREAM AT LOCATION OF WATER MAIN CROSSING PRIOR TO INSTALLATION AND INFORM ENGINEER OF WIDTH MEASURED. IF STREAM WIDTH IS DETERMINED TO BE LESS THAN 15 LF AT CROSSING LOCATION, CONTRACTOR IS NOT REQUIRED TO INSTALL LEAK DETECTION METER AND ISOLATION VALVE AS SHOWN ON CU-00-501 FOR STREAM CROSSING.



STA. 123+00 TO STA. 137+00



PROFILE - STA. 123+00 TO STA. 137+00 LINE "Water Main Ext."

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'

VERTICAL SCALE: 1" = 5'-0"
0 5' 10' 20' 30'

BID SET

NICHOLAS A. GUNSELMAN — LICENSED PROFESSIONAL ENGINEER — 7/3/2026

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 123+00 TO STA. 137+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

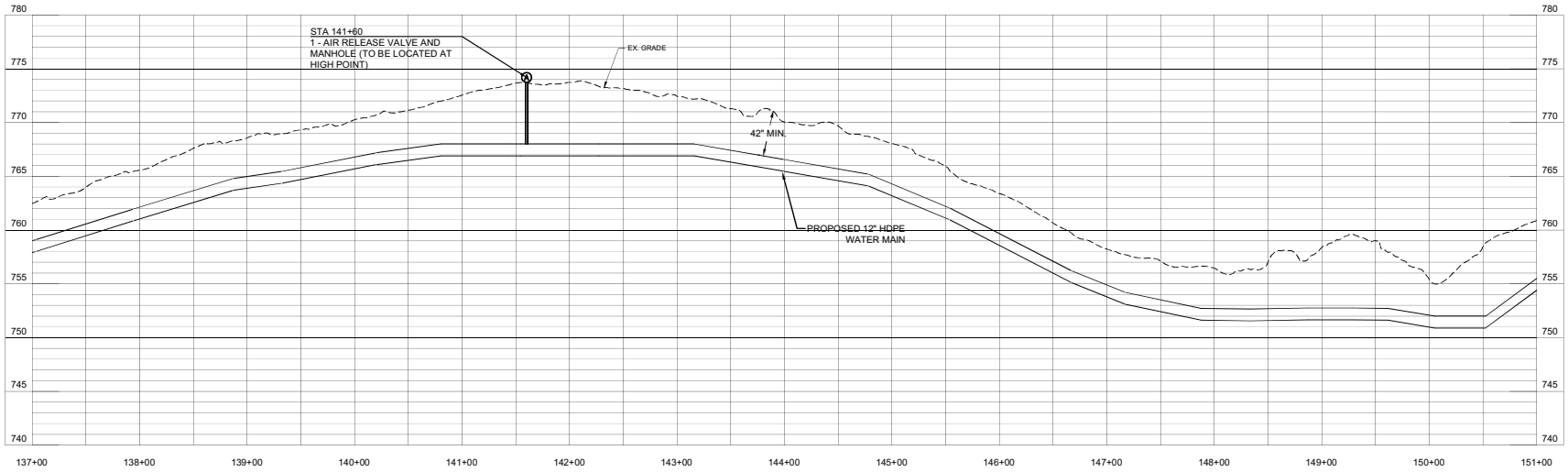
THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED
IF DOES NOT, SCALE DRAWING ACCORDINGLY

DATE: SEPTEMBER, 2026
SCALE: 1" = 50'
SHEET NO.: CU-00-110

PLOTTED BY: dkruitz
PRINTED: 9/4/2026 @ 12:09PM
FILE NAME: G:\5180-OCWD LB42W Ph2\Working Drawings\AutoCAD\5180-CU-00-110.dwg



STA. 137+00 TO STA. 151+00



PROFILE - STA. 137+00 TO STA. 151+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

BID SET

7/3/2026

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 137+00 TO STA. 151+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY
1.	ADDENDUM NO. 1	7-7-26	CEK

DATE: SEPTEMBER, 2026

SCALE: 1" = 50'

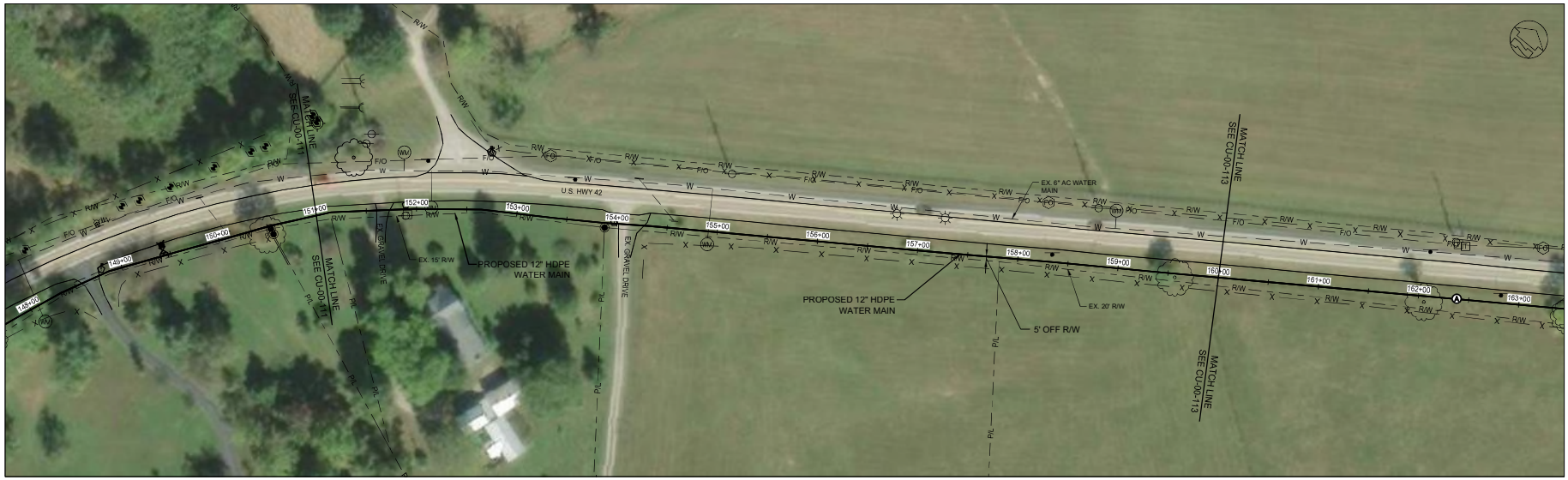
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CU-00-111

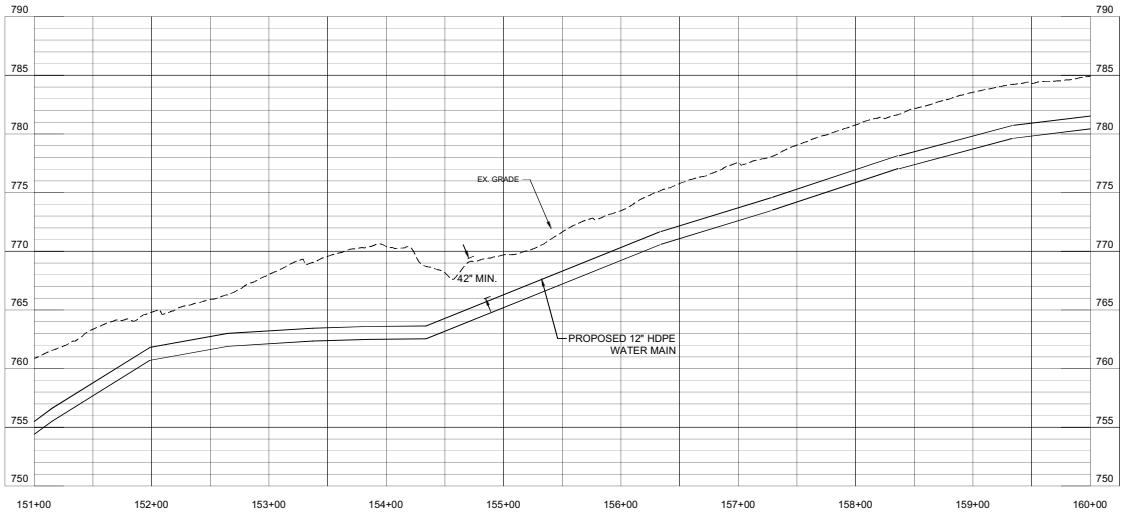
PLOTTED BY: dkruiz

PRINTED: 9.22.2026 @ 1:24PM

FILE NAME: G:\5180-OCWD LB42W Ph2\Working Drawings\AutoCAD\5180-CU00-111.dwg



STA. 151+00 TO STA. 160+00



PROFILE - STA. 151+00 TO STA. 160+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113).
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'

VERTICAL SCALE: 1"=5'

BID SET

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

ALL STUDIES REGARDING PROPERTY OF THE PROJECT AREA ARE PROPRIETARY AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE OTHER THAN THE SPECIFIC PROJECT FOR WHICH IT WAS PREPARED WITHOUT WRITTEN PERMISSION

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12" WATER MAIN PLAN & PROFILE
STA. 151+00 TO STA. 160+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

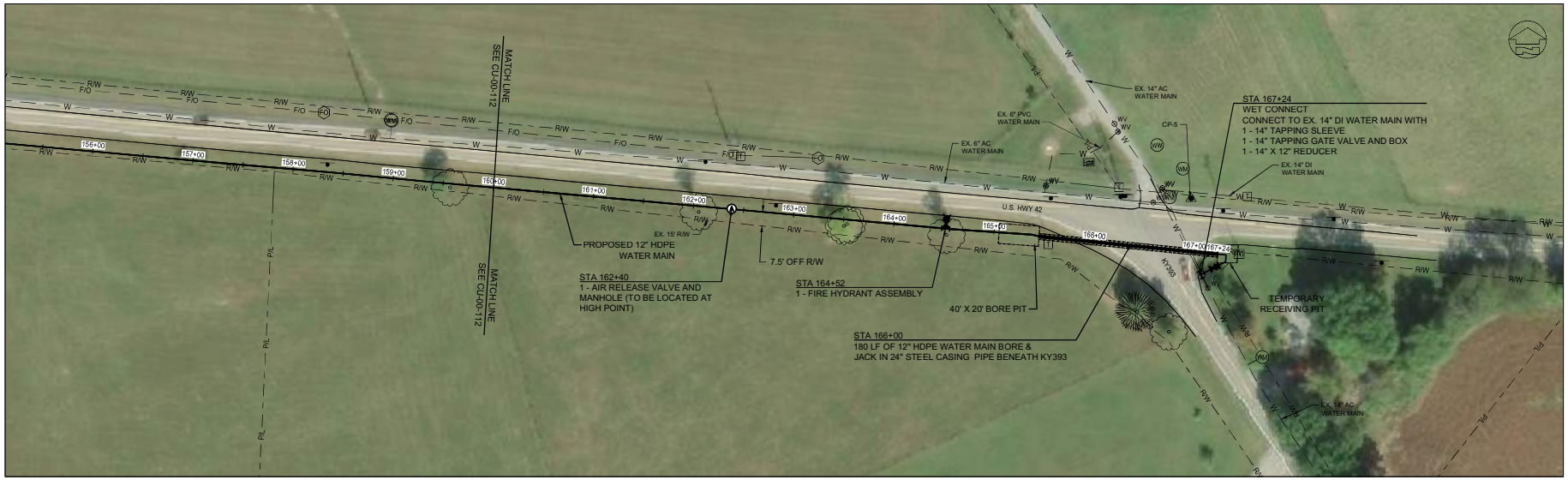
REVISIONS

NO.	DESCRIPTION	DATE	BY

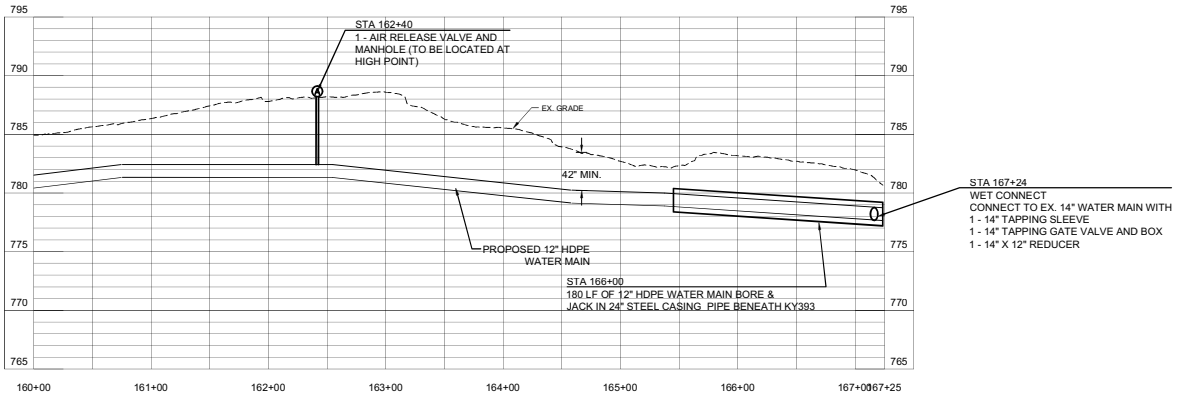
THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: SEPTEMBER, 2026
SCALE: 1" = 50'
SHEET NO. CU-00-112

PLOTTED BY: ckruitz
PRINTED: 9/4/2026 @ 12:08PM
FILE NAME: G:\5180-OCWD LB42W Ph2\Working Drawings\AutoCAD\5180-CU-00-112.dwg



STA. 160+00 TO STA. 167+24 (E.O.L.)



PROFILE - STA. 160+00 TO STA. 167+25 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 33113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

BID SET

7/3/2026

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 160+00 TO STA. 167+24 (E.O.L.)
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

IF BAR DOES NOT MEASURE EXACTLY 1" WHEN PLOTTED, THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: SEPTEMBER, 2026

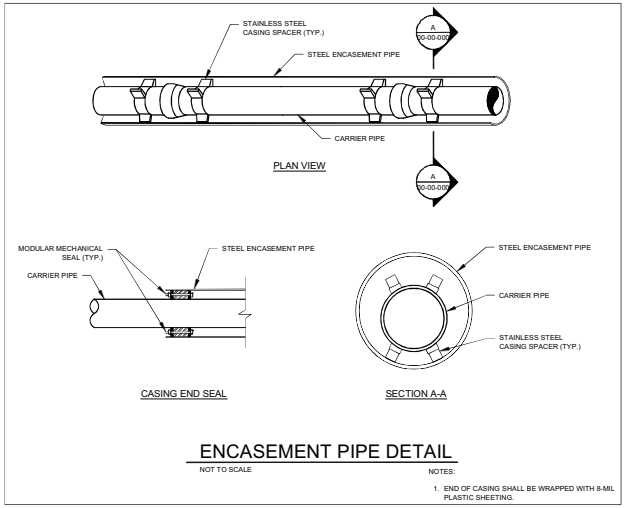
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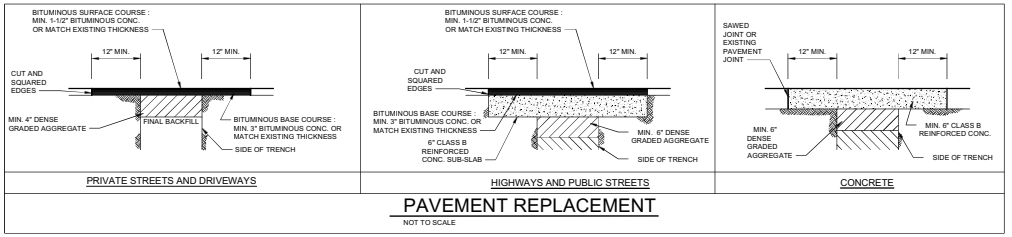
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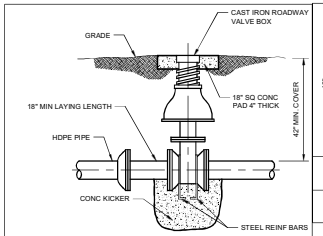
PLOTTED BY: dkruitz

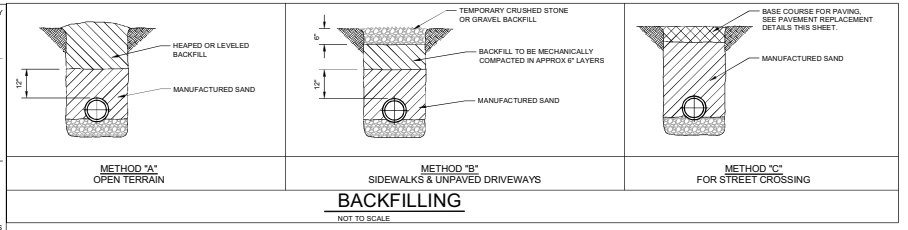
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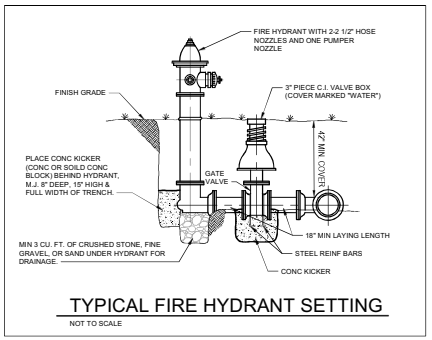
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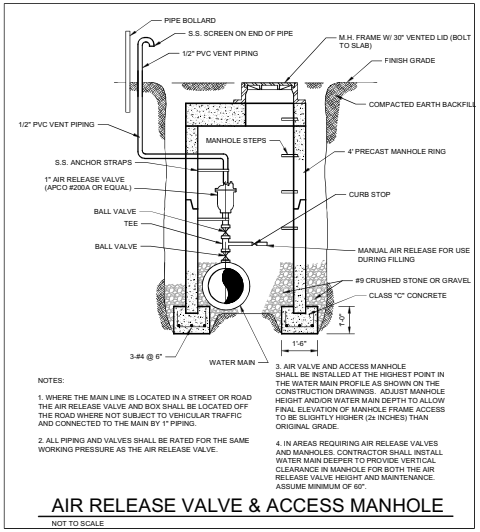


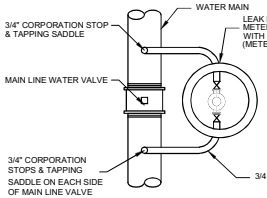


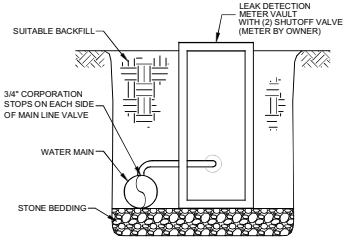




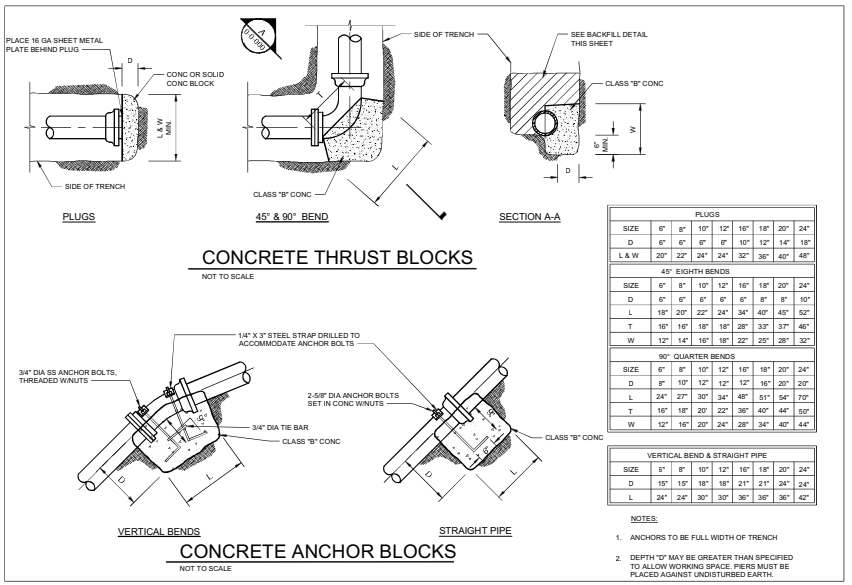








NOTE :
LEAK DETECTION METER VAULTS SHALL BE DFW PLASTICS, INC. MODEL DFW4/WBC-24-1 WITH INTEGRAL METER YOKE AND SHUT OFF VALVES (METER BY OWNER)



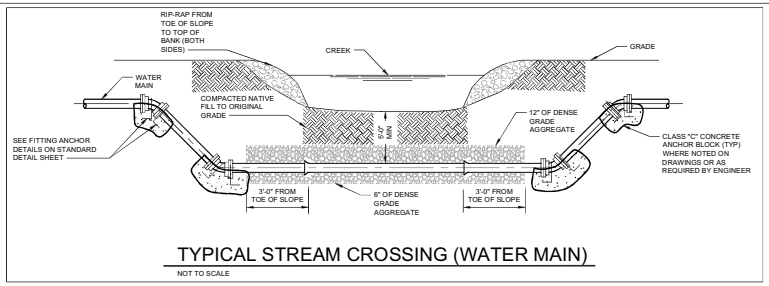
PLUGS								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	6"	6"	6"	8"	10"	12"	14"	18"
L & W	20"	22"	24"	24"	32"	36"	40"	48"

45° EIGHTH BENDS								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	6"	6"	6"	6"	6"	8"	8"	10"
L	18"	20"	22"	24"	34"	40"	45"	52"
T	16"	16"	18"	18"	28"	33"	37"	46"
W	12"	14"	16"	18"	22"	25"	28"	32"

90° QUARTER BENDS								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	8"	10"	12"	12"	12"	16"	20"	20"
L	24"	27"	30"	34"	48"	51"	54"	70"
T	16"	18"	20"	22"	36"	40"	44"	50"
W	12"	16"	20"	24"	28"	34"	40"	44"

VERTICAL BEND & STRAIGHT PIPE								
SIZE	5"	8"	10"	12"	16"	18"	20"	24"
D	15"	15"	18"	18"	21"	21"	24"	24"
L	24"	24"	30"	30"	36"	36"	36"	42"

NOTES:
1. ANCHORS TO BE FULL WIDTH OF TRENCH
2. DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE. PIERS MUST BE PLACED AGAINST UNDISTURBED EARTH.



PLOTTED BY: NGunselman
PRINTED: 9/4/2026 @ 11:09AM
FILE NAME: G:\5180-OCWD LS#42W Ph2\Working Drawings\AutoCAD\5180-CU-00-501.dwg

BID SET

COMMONWEALTH OF KENTUCKY NICHOLAS R. GUNSELMAN LICENSED PROFESSIONAL ENGINEER 9/3/2026

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

ALL RIGHTS RESERVED
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WATER MAIN DETAILS

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

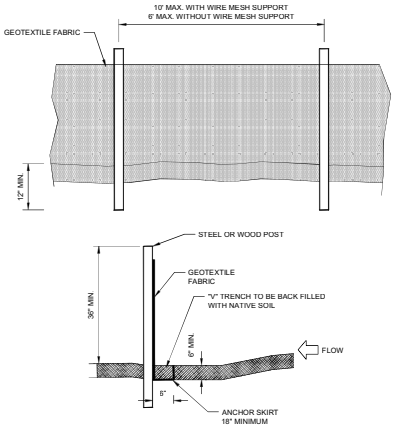
DESIGNED:	DRAWN:	REVIEWED:	APPROVED:
NWG	CEK	NWG	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

1 THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED
IF NOT SCALE PROPORTIONALLY

DATE: SEPTEMBER, 2026
SCALE: NTS
SHEET NO.: CU-00-501

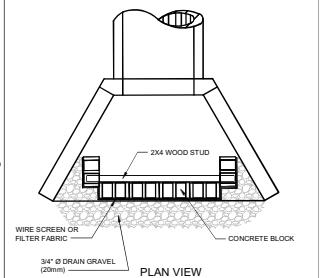


NOTES:

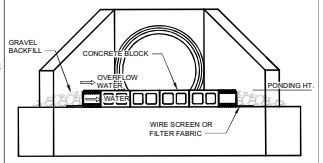
1. GEOTEXTILE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER. WHEN JOINTS CANNOT BE AVOIDED, GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE AT LEAST 5 FEET IN LENGTH.
3. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE AND FABRIC.
4. WOOD POSTS SHALL BE 2 INCHES BY 2 INCHES OR EQUIVALENT. STEEL POSTS SHALL BE 1.33 LBS PER LINEAR FOOT.
5. IF REQUIRED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH IN LENGTH. WIRE TIES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. TURN SILT FENCE UP SLOPE AT ENDS.

SILT FENCE

NOT TO SCALE



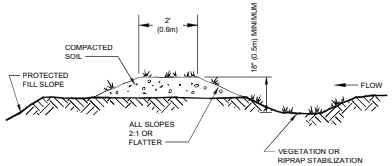
PLAN VIEW



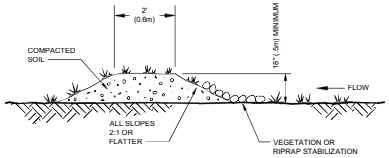
FRONT ELEVATION

CULVERT INLET SEDIMENT BARRIER

NOT TO SCALE



TYPICAL FILL DIVERSION



TYPICAL TEMPORARY DIVERSION DIKE

NOTES:

1. THE CHANNEL BEHIND THE DIKE SHALL HAVE POSITIVE GRADE TO A STABILIZED OUTLET.
2. THE DIKE SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
3. THE DIKE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT SEEDING OR RIPRAP.

DIVERSION CHANNEL

NOT TO SCALE

EROSION CONTROL NOTES

1. A KPDES STORMWATER PERMIT IS REQUIRED FOR THIS PROJECT. COVERAGE STARTS WHEN THE KY DIVISION OF WATER ACKNOWLEDGES RECEIPT OF A NOTICE OF INTENT FOR COVERAGE.
2. THE KPDES PERMIT REQUIRES THAT THE PERMITTEE SHALL MINIMIZE DISTURBANCE AND THE PERIOD OF TIME THAT THE DISTURBED AREA IS WITHOUT STABILIZATION PRACTICES.
3. FINAL STABILIZATION SHALL BEGIN WITHIN 14 DAYS ON AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE BEEN SUSPENDED FOR MORE THAN 180 DAYS. WHEN SNOW COVER CAUSES DELAYS, STABILIZATION SHALL BEGIN AS SOON AS POSSIBLE. STABILIZATION PRACTICES INCLUDE SEEDING, MULCHING, PLACING SOD, PLANTING TREES OR SHRUBS, AND USING GEOTEXTILE FABRICS AND OTHER APPROPRIATE MEASURES. SEEDING RATES, DATES AND MATERIALS MAY BE OBTAINED FROM THE LOCAL NATURAL RESOURCES CONSERVATION SERVICE FIELD OFFICE.
4. FOR ALL CRITICAL AREAS (WITHIN 25' OF A STREAM), SOIL STABILIZATION TECHNIQUES SHALL BE IMPLEMENTED WITHIN 24 HOURS OR AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OR DISTURBANCE. TEMPORARY STABILIZATION PRACTICES SHALL BE INITIATED WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION ACTIVITIES.
5. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE DEVELOPED AND IMPLEMENTED AS OUTLINED IN THE KPDES STORMWATER PERMIT KYR 10.
6. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE PROPERLY DESIGNED.
7. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE INSTALLED DURING INITIAL GRADING AT LOCATIONS THAT WILL PROVIDE THE BEST PROTECTION FROM OFF-SITE DAMAGES.
8. ALL SLOPES EXCEEDING 3:1 SHALL HAVE TURF REPLACEMENT MAT INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
9. A MULTI-PURPOSE BASIN USED FOR A SEDIMENT TRAP THAT IS THEN CONVERTED TO A DETENTION/RETENTION BASIN SHALL BE DREDGED PERIODICALLY DURING CONSTRUCTION ACTIVITIES AND AFTER STABILIZATION IN ORDER TO PROVIDE ADEQUATE STORAGE.
10. INLET PROTECTION IS REQUIRED TO MINIMIZE DISCHARGE OF SEDIMENT LADEN WATER.
11. SITE PERIMETER CONTROLS ARE REQUIRED AND SHALL BE INSTALLED TO PREVENT THE DEPOSIT OF SOIL AND DEBRIS FROM GRADED SURFACES ONTO PUBLIC STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.
12. EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROLS AND REVISE THE CONTROLS AS NEEDED.

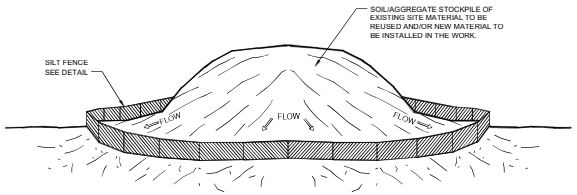
INSPECTIONS AND MAINTENANCE

1. ALL EROSION CONTROL MEASURES, DISCHARGE LOCATIONS, VEHICLE EXITS, DISTURBED AREAS OF THE SITE, AND MATERIALS STORAGE AREAS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. EACH INSPECTION MUST BE DOCUMENTED IN ACCORDANCE WITH THE KPDES GENERAL PERMIT FOR STORMWATER POINT SOURCE DISCHARGES FROM CONSTRUCTION ACTIVITIES (KYR10).
2. SEDIMENT ACCUMULATED AT THE SILT FENCES, INLET PROTECTION AREAS, AND OTHER SILT CHECK DEVICES SHOULD BE REMOVED NO LATER THAN WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
3. SEDIMENT MUST BE REMOVED FROM ANY SEDIMENT BASINS WHEN THE NO MORE THAN 1/3 OF THE VOLUME HAS BEEN FILLED WITH COLLECTED SEDIMENT.
4. ALL REQUIRED REPAIRS ARE TO BE MADE IMMEDIATELY.
5. REMOVED SEDIMENT MUST BE SPREAD AND VEGETATED OR OTHERWISE STABILIZED IN A MANNER THAT DOES NOT RESULT IN MUDDY RUNOFF TO NEARBY DITCHES AND WATERBODIES.
6. INSPECT THE CONSTRUCTION ENTRANCE DAILY TO ENSURE NO TRACKING OF DIRT ONTO LOCAL ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROAD MUST BE REMOVED IMMEDIATELY. SEE NOTE 3 FOR HANDLING OF REMOVED SEDIMENT.
7. MAINTAIN THE ENTRANCE AS NECESSARY TO PREVENT TRACKING OF DIRT.

UNTIL THE OWNER PERFORMS A FINAL INSPECTION AND THE LAND DISTURBING PERMIT IS CLOSED, THE PERSON RESPONSIBLE SHALL TAKE SUCH MEASURES AS ARE NECESSARY TO PREVENT EROSION OF GRADED STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.

SEQUENCE OF EROSION CONTROL PLAN ACTIVITIES (FROM KY DOW GUIDANCE)

1. IDENTIFY AND FLAG OFF AREAS NOT TO BE DISTURBED AND/OR COMPACTED.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
3. INSTALL UPGRADIENT DIVERSION SWALES AND BERMS.
4. INSTALL SEDIMENT BARRIERS (SILT FENCES)
5. INSTALL SEDIMENT BASIN.
6. CONSTRUCT OTHER SWALES.
7. CONSTRUCT STORM CONVEYANCE SYSTEM (INLETS AND STORM SEWERS)
8. BEGIN CLEARING AND GRADING FOR THE ROADS, BUILDINGS, AND TANKS.
9. STABILIZE BARE AREAS AFTER FINAL GRADE IS REACHED.
10. CONSTRUCT ROADS, BUILDINGS, TANKS AND PARKING LOTS.
11. INSTALL LANDSCAPING.
12. DREDGE SEDIMENT BASIN AND INSTALL TEMPORARY EROSION CONTROL BLANKET ON ALL SLOPES.
13. REMOVE ALL CONTROLS ONCE THE SITE HAS BEEN FULLY STABILIZED.
14. FINAL INSPECTION FOR LAND DISTURBANCE PERMIT.
15. TEMPORARY DIVERSION DITCHES MAY BE REQUIRED DURING CONSTRUCTION TO MITIGATE EROSION OF THE DISTURBED CONSTRUCTION AREA, BY DIRECTING OFF-SITE DRAINAGE AROUND THE DISTURBANCE AREAS.

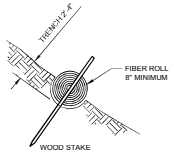


NOTES:

1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

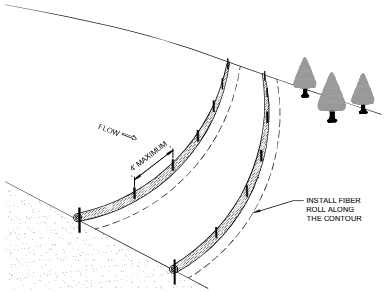
MATERIALS STOCKPILE

NOT TO SCALE



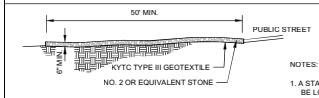
NOTES:

1. FIBER ROLLS AND OTHER COMMERCIAL PRODUCTS MADE FROM COCONUT FIBER, PLASTIC, WOOD SHAVINGS, COMPOST, OR OTHER MATERIAL CAN BE USED AS SEDIMENT BARRIERS ON SLOPES FLATTER THAN 10:1.
2. FOLLOW MANUFACTURERS' INSTALLATION INSTRUCTIONS AND ENSURE THAT SEDIMENT FILTER SPACING ON SLOPES IS CORRECT.

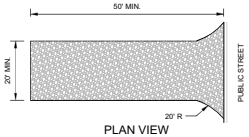


FIBER ROLLS

NOT TO SCALE



CROSS SECTION



PLAN VIEW

NOTES:

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. GEOTEXTILE (KYTC TYPE III) SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

BID SET

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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EROSION CONTROL DETAILS AND NOTES

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED:	NWG
DRAWN:	CEK
REVIEWED:	AAB
APPROVED:	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

IF THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED | EQUAL DESIGN 1

DATE: SEPTEMBER, 2026

SCALE: NTS

SHEET NO. CE-00-501

PLOTTED BY: cknutz

PRINTED: 9/3/2026 @ 4:14PM

FILE NAME: G:\5180-OC\WD LS\42W Ph2\Working Drawings\AutoCAD\5180-CE-00-501.dwg

Exhibit 8

Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

John S. Lyons
SECRETARY

Amanda W. LeFevre
COMMISSIONER

August 14, 2026

Russell Rose
Oldham Co Water District
2160 Spencer Ct
La Grange, KY 40031

RE: US42 Water Main Extension KY1694 to KY393
Oldham County, KY
Oldham Co Water District
AI #: 3360, APE20260002
PWSID #: 0930333-26-002

Dear Russell Rose:

We have reviewed the plans and specifications for the above referenced project. The plans include the construction of approximately 16,716 linear feet of 12-inch HDPE water line. 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 Serena Male at 502-782-1558.

Sincerely,

Terry Humphries, P.E.
Supervisor, Drinking Water Engineering Section
Water Infrastructure Branch
Division of Water

TH:SM
Enclosures
c: GRW Engineers Inc
Oldham County Health Department
Division of Plumbing

Distribution-Major Construction

Oldham Co Water District

Facility Requirements

Activity ID No.:APE20260002

GACT0000000087 (US42 Water Main Extension KY1694 to KY393) 16716 linear feet of 12-inch HDPE water line:

Narrative Requirements:

Condition No.	Condition
T-1	Construction of this project shall not result in the water system's inability to supply consistent water service in compliance with 401 KAR 8:010 through 8:600. [401 KAR 8:100 Section 5]
T-2	The public water system shall not implement a change to the approved plans without the prior written approval of the cabinet. [401 KAR 8:100 Section 4(3)]
T-3	A proposed change to the approved plans affecting sanitary features of design shall be submitted to the cabinet for approval in accordance with Section 2 of this administrative regulation. [401 KAR 8:100 Section 4(2)]
T-4	During construction, a set of approved plans and specifications shall be available at the job site. Construction shall be performed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 3(1)]
T-5	Unless construction begins within two (2) years from the date of approval of the final plans and specifications, the approval shall expire. [401 KAR 8:100 Section 3(3)]
T-6	Upon completion of construction, a professional engineer shall certify in writing that the project has been completed in accordance with the approved plans and specifications. [401 KAR 8:100 Section 4(1)]
T-7	The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. [Recommended Standards for Water Works 8.2.1, Drinking Water General Design Criteria IV.1.a]
T-8	Water lines should be hydraulically capable of a flow velocity of 2.5 ft/s while maintaining a pressure of at least 20 psi. [Drinking Water General Design Criteria IV.1.b]
T-9	The normal working pressure in the distribution system at the service connection shall not be less than 30 psi under peak demand flow conditions. Peak demand is defined as the maximum customer water usage rate, expressed in gallons per minute (gpm), in the pressure zone of interest during a 24 hour (diurnal) time period. [Drinking Water General Design Criteria IV.1.d]
T-10	When static pressure exceeds 150 psi, pressure reducing devices shall be provided on mains or as part of the meter setting on individual service lines in the distribution system. [Drinking Water General Design Criteria IV.1.c]
T-11	The minimum size of water main in the distribution system where fire protection is not to be provided should be a minimum of three (3) inch diameter. Any departure from minimum requirements shall be justified by hydraulic analysis and future water use, and can be considered only in special circumstances. [Recommended Standards for Water Works 8.2.2, Drinking Water General Design Criteria IV.2.b]

GACT0000000087 (US42 Water Main Extension KY1694 to KY393) 16716 linear feet of 12-inch HDPE water line:

Narrative Requirements:

Condition No.	Condition
T-12	Water mains not designed to carry fire-flows shall not have fire hydrants connected to them. [Recommended Standards for Water Works 8.4.1.b]
T-13	Flushing devices should be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-14	No flushing device shall be directly connected to any sewer. [Recommended Standards for Water Works 8.2.4.b, Recommended Standards for Water Works 8.4.1.b]
T-15	Pipe shall be constructed to a depth providing a minimum cover of 30 inches to top of pipe. [Drinking Water General Design Criteria IV.3.a]
T-16	Water mains shall be covered with sufficient earth or other insulation to prevent freezing. [Recommended Standards for Water Works 8.7]
T-17	A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a depth of at least six inches below the bottom of the pipe. [Recommended Standards for Water Works 8.7]
T-18	Water line installation shall incorporate the provisions of the AWWA standards and/or manufacturer's recommended installation procedures. [Recommended Standards for Water Works 8.7]
T-19	All materials used for the rehabilitation of water mains shall meet ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-20	Packing and jointing materials used in the joints of pipe shall meet the standards of AWWA and the reviewing authority. [Recommended Standards for Water Works 8.1]
T-21	All tees, bends, plugs and hydrants shall be provided with reaction blocking, tie rods or joints designed to prevent movement. [Recommended Standards for Water Works 8.7]
T-22	All materials including pipe, fittings, valves and fire hydrants shall conform to the latest standards issued by the ASTM, AWWA and ANSI/NSF, where such standards exist, and be acceptable to the Division of Water. [Recommended Standards for Water Works 8.1]
T-23	Water mains which have been used previously for conveying potable water may be reused provided they meet the above standards and have been restored practically to their original condition. [Recommended Standards for Water Works 8.1]

GACT0000000087 (US42 Water Main Extension KY1694 to KY393) 16716 linear feet of 12-inch HDPE water line:

Narrative Requirements:

Condition No.	Condition
T-24	Manufacturer approved transition joints shall be used between dissimilar piping materials. [Recommended Standards for Water Works 8.1]
T-25	The minimum size of water main which provides for fire protection and serving fire hydrants shall be six?inch diameter. [Recommended Standards for Water Works 8.2, Drinking Water General Design Criteria IV.2.a]
T-26	Pipes and pipe fittings containing more than 8% lead shall not be used. All products shall comply with ANSI/NSF standards. [Recommended Standards for Water Works 8.1]
T-27	Gaskets containing lead shall not be used. Repairs to lead?joint pipe shall be made using alternative methods. [Recommended Standards for Water Works 8.1]
T-28	Pipe materials shall be selected to protect against both internal and external pipe corrosion. [Recommended Standards for Water Works 8.1]
T-29	Dead end mains shall be equipped with a means to provide adequate flushing. [Recommended Standards for Water Works 8.2]
T-30	The hydrant lead shall be a minimum of six inches in diameter. Auxiliary valves shall be installed on all hydrant leads. [Recommended Standards for Water Works 8.4.3]
T-31	A sufficient number of valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. [Recommended Standards for Water Works 8.3]
T-32	Wherever possible, chambers, pits or manholes containing valves, blow?offs, meters, or other such appurtenances to a distribution system, shall not be located in areas subject to flooding or in areas of high groundwater. Such chambers or pits should drain to the ground surface, or to absorption pits underground. The chambers, pits and manholes shall not connect directly to any storm drain or sanitary sewer. Blow?offs shall not connect directly to any storm drain or sanitary sewer. [Recommended Standards for Water Works 8.6]
T-33	At high points in water mains where air can accumulate provisions shall be made to remove the air by means of air relief valves. [Recommended Standards for Water Works 8.5.1]
T-34	Automatic air relief valves shall not be used in situations where flooding of the manhole or chamber may occur. [Recommended Standards for Water Works 8.5.1]
T-35	The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward?facing elbow. [Recommended Standards for Water Works 8.5.2.c]

GACT0000000087 (US42 Water Main Extension KY1694 to KY393) 16716 linear feet of 12-inch HDPE water line:

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]

Exhibit 9

Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

John S. Lyons
SECRETARY

Amanda W. LeFevre
COMMISSIONER

June 23, 2026

Issued to: **Oldham Co Water Dist**
Address: **PO Box 51**
Buckner, KY 40010

Floodplain General Permit Coverage

Permit No. KY FPGP

Agency Interest: **3360**
Activity ID: **APE20260003**

In accordance with KRS 151.250 and KRS 151.260, the Energy and Environment Cabinet extends stream construction coverage under KY FPGP for **water main in the floodplains of Bull Creek, an unnamed tributary of Bull Creek, Morris Branch, and an unnamed tributary of Morris branch, with respective coordinates (38.4265, -85.5333), (38.4314, -85.5245), (38.4346, -85.5011), (38.4361, -85.4970), in Oldham County**.

Permit KY FPGP is attached to this correspondence for your records. This permit does not require application to the cabinet. The installation of water main with 4 blueline stream crossings qualifies under section 2.2. 8) of the permit. The project also qualifies under section 2.2. 15) of the permit due to being in a watershed of less than 1 square mile.

The floodplain general permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of proposed construction. The applicant is liable for any damage resulting from the construction, operation or maintenance of the project and is responsible for obtaining any other permits or licenses required by this cabinet and other state, federal and local agencies.

If this activity will result in a discharge of dredged or fill material into waters of the United States, additional permits may be required from the U.S. Army Corps of Engineers and the Kentucky Division of Water. Examples of discharges include but are not limited to placement of dirt, culverts, rock or pipelines in a stream or wetland. Additionally, Water Quality Certification if the disturbance to an intermittent or solid blue line stream is greater than 200 linear feet. Please contact the Water Quality Certification Section staff at 502/564-3410 for additional information. Also, a storm water control permit may be required if the total surface disturbance is more than 1 (one) acres. Please contact the Surface Water Permits Branch, Storm Water Construction staff at the same number.

If you have any questions regarding this permit, please call Sam McElhannon at 502-782-1479.

Sincerely,

David Ray Coe

David Coe, P.E., Supervisor
Floodplain Management Section
Water Resources Branch
Division of Water

pc: Louisville Regional Office
James G Silliman III, Engineer - Oldham County Floodplain Coordinator, jsilliman@oldhamcountyky.gov
Oldham County Water District – Owner, rrose@oldhamcountywaterky.gov
Nicholas Gunselman – Agent/Engineer – ngunselman@grwinc.com

General Permit

DEVELOPMENT ALONG OR ADJACENT TO A STREAM

Development in a Floodplain - General

Permit for Minor Activities

Permit Number: KY FPGP

AI No.: 35050

Pursuant to Authority established in KRS Chapter 151,

Development activities that occur in a floodplain for the base flood event and that meet the eligibility requirements of this permit,

are authorized along or adjacent to a stream in areas located within the 120 counties of the Commonwealth of Kentucky,

in accordance with the requirements of 401 KAR 4:060, and other conditions set forth in this permit.

This permit shall become effective on 7/3/2025.

This permit and the authorization shall expire 7/2/2030.



7/3/2025

Date Signed

Anthony R. Hatton, Commissioner

Department for Environmental Protection

1. PERMIT COVERAGE 3
2. EXCLUSIONS AND ELIGIBILTY 5
3. PERMIT REQUIREMENTS 8
4. OTHER CONDITIONS 10

SECTION 1

PERMIT COVERAGE

1. PERMIT COVERAGE

Coverage under this General Permit issued by the Kentucky Division of Water (the "Division"), allows for development activities along or adjacent to a stream, that meet the eligibility requirements established in this permit, and that do not increase the Base Flood Elevation in any community.

Development meeting the requirements of this General Permit shall have automatic coverage under this general permit without making application or submitting plans and specifications to the Division.

Proposed development with the potential to change the Base Flood Elevation shall require an application for an Individual Floodplain Development Permit to Construct Along or Across a Stream pursuant to 401 KAR 4:060.

The property owner or entity employed to develop the property (the "Permittee"), and who is authorized for coverage under this General Permit by the Division, is exempt from public notice requirements as long as the development is conducted in accordance with the requirements of this General Permit.

This General Permit is issued pursuant to KRS 151.250 and 401 KAR 4:060 regarding stream obstruction only and does not constitute certification of any other aspect of proposed development. Ongoing development shall comply with the terms and conditions of this General Permit within 90 days of its effective date, and new development shall comply with the terms and conditions of this General Permit upon beginning eligible development activities.

Work performed by or for the Permittee that does not fully conform to the limitations set forth in this General 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 and KRS 151.125 under the authority and powers of the Secretary.

The Permittee shall contact the Division of Water, Water Resources Branch, at (502) 564-3410 or at 401WQC@ky.gov to determine if a Water Quality Certification is required. If required, the Permittee shall obtain a Water Quality Certification from the Division before beginning development.

The Permittee shall contact the Division of Water, Surface Water Permit Branch at (502) 564-3410 or at SWPBsupport@ky.gov to determine if a Stormwater Construction Permit is required. If required, the Permittee shall obtain a Stormwater Construction Permit from the Division before beginning development.

The Permittee is liable for any damage resulting from the development, operation, or maintenance of the activities covered by this permit.

SECTION 2

EXCLUSIONS AND ELIGIBILITY

2. EXCLUSIONS AND ELIGIBILTY

2.1. Exclusions

1) Development not meeting the eligibility requirements listed in Section 2.2 of this General Permit shall require an application to be submitted to the Division for an Individual Floodplain Development Permit to Construct Along or Across a Stream, pursuant to 401 KAR 4:060.
2) Development with the potential to affect the Base Flood Elevation in a community shall require an application to be submitted to the Division for an Individual Floodplain Development Permit to Construct Along or Across a Stream, pursuant to 401 KAR 4:060.
3) Development in a stream or wetland that requires an Individual Water Quality Certification pursuant to 401 KAR 9:010 from the Division is not eligible for coverage under this General Permit.
4) Activities occurring adjacent to or in the floodplain associated with Special Use Waters, Exceptional Waters, or Outstanding State Resource Waters are not eligible for coverage under this General Permit. A map of waters of the Commonwealth may be obtained at the following internet address: watermaps.ky.gov/WaterHealthPortal.
5) Development of residential, non-residential, or appurtenant structures located in the base floodplain shall not be eligible for, nor granted, coverage under this General Permit.
6) Development of dams or other water impounding structures, or construction that does or may endanger life or cause property damage shall not be eligible for, nor granted, coverage under this General Permit.

2.2. Eligibility

The following activities are eligible for coverage under this General Permit:

1) Development constructed by the US Army Corps of Engineers;
2) Uses of open space as established in 44 CFR 80.19;
3) Vegetative and riparian buffers;
4) Stream obstruction removal, such as the removal of woody debris from a bridge or culvert after a storm event, that is completed as described in the Watershed Friendly Stream Maintenance guidance, and that does not result in materials being deposited in the floodplain for the base flood event. A copy of this guidance may be obtained at the following internet address: https://eec.ky.gov/Environmental-Protection/Water/FloodDrought/Documents/StreamMaintenanceGuideFAQ.pdf
5) Normal property maintenance activities that are done by hand such as cuttings, plantings, and temporarily placing woody debris in piles. Maintenance activities shall be completed and all materials removed from the base floodplain within 15 days;
6) Development of a below-grade swimming pool outside of the regulatory floodway;
7) Development and placement of utility poles, open-frame towers, or monopole towers with below grade foundations;
8) Development of below-grade utilities and subgrade drainage features (e.g. water lines, pipelines, subdrains, dropboxes, etc.) where excavation below the ordinary high watermark of a stream channel or wetland will not occur;
9) Development and placement of an open-style guardrail along an existing roadway;
10) Geotechnical investigations, archeological investigations or installation of monitoring wells;

11) Repairs or maintenance to an existing shallow and narrow, man-made drainage-way, such as a swale or a ditch between two buildings. The man-made drainage-way cannot be mapped as having its own base floodplain. (A portion of the man-made drainage-way may empty into a larger waterbody that has a mapped base floodplain. For example, a ditch between two buildings that flows into an adjacent stream);
12) Development and placement of a fence that does not impede flow during a base flood event, as long as the fence is not constructed across a stream or wetland;
13) Locating a recreational vehicle that is fully licensed and ready for highway use in the floodplain for the base flood event for less than 180 consecutive days;
14) Removal of gravel or vein minerals from a stream by the Permittee for personal, noncommercial use that is completed as outlined in the Watershed Friendly Stream Maintenance guidance. Excavated materials shall not be placed along the banks of the stream or within the base floodplain. Eligibility for coverage under this General Permit shall be limited to fifty (50) tons or less excavated in twelve (12) successive calendar months in accordance with KRS 350.245. Eligibility for coverage under this General Permit shall not include removal of gravel or vein minerals that will be sold or transported on public roadways; or
15) Development in a watershed less than one square mile (1 mi^2).

SECTION 3

REQUIREMENTS

3. PERMIT REQUIREMENTS

1) The Permittee shall maintain access to a copy of this General Permit at the development site.
2) Prior to beginning development, the Permittee shall obtain a local floodplain development permit if the county/city/community is an eligible or participating community in the National Flood Insurance Program. Upon completion of the development, the Permittee shall obtain final written approval from the local permitting agency confirming compliance with the requirements of the local floodplain ordinance.
3) All excess debris and material from development activities shall be removed from the base floodplain. Upon completion of development, the site shall not exceed original grade elevation.
4) The Permittee shall at all times minimize the size of the disturbance and the period of time that the disturbed area is exposed without stabilization practices. The following practices shall be adhered to:
    a. Erosion prevention measures, sediment and silt control measures, and other site management practices shall be designed, installed, and maintained in an effective operating condition to prevent off site migration of sediment.
    b. Erosion prevention measures include, but are not limited to, erosion control mats/blankets, and mulch/straw, and shall be implemented on disturbed areas within 24 hours or as soon as practical after completion of disturbance or following cessation of activities.
    c. Standard silt control practices shall be used in such quantity to prevent siltation of waters of the Commonwealth. Practices that are acceptable include silt fences, rock check dams, and straw-bales.
    d. Permanent vegetation shall be placed on the disturbance area within 14 days or as soon as possible upon completion of development.
5) The entry of mobile equipment into a stream channel shall be prohibited.
6) Measures shall be taken to prevent possible spills of fuels and lubricants from entering waters of the Commonwealth. Any spill or discharge to waters of the Commonwealth shall be reported to the Department for Environmental Protection immediately by calling the Cabinet's Environmental Emergency Response Line at 1-(800)-928-2380.
7) Violations of the requirements of this General Permit are subject to enforcement action under KRS 151.182 and penalties under KRS 151.990.

SECTION 4

OTHER CONDITIONS

4. OTHER CONDITIONS

4.1. Schedule of Compliance

The Permittee shall be in compliance with the requirements of this General Permit within 90 days of its effective date through the completion of development. This General Permit does not require a submission of an application to the Division, and therefore General Permit requirements for new development shall be met from the time an eligible activity begins through the completion of development. Should the Division determine the Permittee failed to comply with the requirements of this General Permit, the coverage may be terminated and the Permittee may be required to obtain an Individual Floodplain Development Permit to Construct Along or Across a Stream.

4.2. Other Permits

This General Permit has been issued under the provisions of KRS Chapter 151 and administrative regulations promulgated pursuant thereto. Issuance of this General Permit does not relieve the Permittee from the responsibility of obtaining any other permits or licenses required by this Division and other state, federal, and local agencies.

4.3. Continuation of Expiring Permit

In the event this General Permit expires prior to reissuance by the Division, the conditions and requirements of this General Permit shall continue in effect until the Division reissues or revokes the permit. However, new or expanded development is not eligible for coverage under this General Permit while it is expired until the General Permit is reissued.

4.4. Application for Permit

The Permittee is not required to submit an application for coverage under this General Permit. All eligible development activities shall be granted automatic coverage.

4.5. Duty to Comply

The Permittee shall comply with the conditions of this General Permit. Violations of the requirements of this General Permit are subject to enforcement action as established in KRS 151.182, and penalties under KRS 151.990, or revocation of coverage under this General Permit.

4.6. Need to Halt or Reduce Activity Not a Defense

Any work performed by the Permittee that does not fully conform to the limitations established in this General Permit is subject to partial or total removal, and to enforcement actions as established in KRS 151.280 as directed by the Division. It shall not be a defense in an enforcement action for a Permittee to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

4.7. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge or disposal in violation of this General Permit which has a reasonable likelihood of adversely affecting human health or the environment.

4.8. Change of Scope of Work

Notifying the Division of planned changes or anticipated noncompliance does not stay any condition of this General Permit.

4.9. Property Rights

The issuance of this General Permit by the Division does not convey any property rights of any kind or any exclusive privilege.

4.10. Duty to Provide Information

The Permittee shall furnish to the Director of the Division of Water (the "Director"), within the requested time frame, any information which the Director may request to determine compliance with this General Permit.

4.11. Inspection and Entry

The Permittee shall allow the Director or an authorized representative (including an authorized contractor acting as a representative of the Director), upon presentation of credentials and other documents as may be required by law, to:

1) Enter upon the development area where an activity covered under this General Permit is located or conducted, or where records are kept under the conditions of this General Permit;
2) Have access to and copy, at reasonable times, any records that are kept under the conditions of this General Permit;
3) Inspect at reasonable times any facilities, equipment practices, or operations regulated or required under this General Permit; and
4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by KRS Chapter 151, any substances or parameters at any location.

Exhibit 10

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOUISVILLE DISTRICT
220 WEST MAIN STREET
LOUISVILLE KY 40202

August 18, 2026

Regulatory Division
South Branch
ID#: LRL-2026-00374

Mr. Russ Rose
Oldham County Water District
PO Box 51
Buckner, KY 40010
Via Email: rrose@oldhamcountywaterky.gov

Dear Mr. Rose:

This letter is in response to the Pre-Construction Notification (PCN) you submitted to the Louisville District, on June 18, 2026, for a Department of the Army Nationwide Permit (NWP) verification. This project has been assigned the file number LRL-2026-00374 and is known as US 42 Water Main Extension KY1694 to KY393. This file number should be referenced in all correspondence concerning this project.

A review of the information provided indicates that the proposed work would include open-cut trenching and backfilling across four streams for the installation of a 12-inch water main at Latitude 38.431395 and Longitude -85.524483; in Oldham County, Kentucky. Please see below table for stream crossing information:

Crossing #/NWP	Stream Name	Type of Impact	Area of Fill	Coordinates
Crossing 1/NWP 58	UNT of Bull Creek	Open Cut Trenching	150 sq ft	38.4264, -85.5333
Crossing 2/NWP 58	Bull Creek	Open Cut Trenching	150 sq ft	38.4314, -85.5245
Crossing 3/NWP 58	UNT of Morris Branch	Open Cut Trenching	150 sq ft	38.4346, -85.5011
Crossing 4/NWP 58	Morris Branch	Open Cut Trenching	150 sq ft	38.4361, -85.4970

We have determined that the proposed work is authorized by 33 CFR 330 Nationwide Permit (NWP) No. 58 (Utility Line Activities for Water and Other Substances), as published in the Federal Register January 8, 2026, pursuant to authorities under Section 404 of the Clean Water Act (33 U.S.C. § 1344). The proposed work must be accomplished in strict accordance with the general permit conditions, any regional conditions, the special conditions listed in this letter, the application materials, and the enclosed “Stream Crossing Map”. If the extent of the project area and/or nature of the authorized impacts to waters are modified, a revised PCN must be submitted to this office for written approval before work is initiated.

This verification is valid until March 15, 2031, unless prior to this date the subject NWP(s) is suspended, revoked, or is modified such that the activity no longer complies with the terms and conditions of this NWP. If you commence or are under contract to commence this activity before the date that the relevant NWP is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this NWP.

Project Specific Special Conditions:

Special Condition 1: The Permittee shall comply with all conditions of the General Water Quality Certification (WQC) and Conditions for NWP No. 58 issued by the Kentucky Division of Water (KDOW) on December 18, 2025, which are incorporated herein by reference.

Special Condition 2: All disturbed areas at stream crossing locations shall be returned to pre-construction contours and elevations and streambanks seeded with a native riparian seed mix.

The enclosed Compliance Certification (ENG 6285) 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. Please note that we also perform periodic inspections to ensure compliance with our permit conditions and applicable Federal laws.

This NWP verification does not preclude the necessity to obtain any other Federal, State, or local permits, licenses, and/or certifications, which may be required.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Darrin Parrent, Newburgh Regulatory Office at 812-853-7632, or by email at darrin.s.parrent@usace.army.mil.

Sincerely,

Darrin Parrent
Project Manager
Regulatory Division

Enclosures
Stream Crossing Map
NWP 58 General Permit Conditions
General WQC from KDOW
Compliance Certification

Exhibit 11

Kentucky Transportation Cabinet
Department of Highways
Permits Branch

ENCROACHMENT PERMIT

KEPTS No.: 2026-00719

Permittee: Oldham County Water District

Latitude: 38.424536

Longitude: -85.537126

Completion Date: 05/29/27

Coordinates provided on the TC 99-1(B) are the approved location for this permit.

Indemnities		
Type	Amount Required	Tracking Number
Performance Bond	$1,500.00	
Payment Bond		
Liability Insurance		

This permit has been:

APPROVED ☒ **DENIED** ☐

Jason Richardson, P.E. — **NAME**

Transportation Engineer Supervisor — **TITLE**

SIGNATURE

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.

KENTUCKY TRANSPORTATION CABINET
Department of Highways
DIVISION OF MAINTENANCE - PERMITS BRANCH

TYPICAL HIGHWAY BORE DETAIL
- FOR NON-FULLY CONTROLLED HIGHWAYS -

KYTC KEPT #: _____

SECTION 1: HIGHWAY INFORMATION

COUNTY:	ROUTE:	MILE POINT:	PAVEMENT WIDTH:
Oldham	KY393	10	24'

SECTION 2: UTILITY INFORMATION

UTILITY TYPE:	PIPE TYPE:	DIAMETER:
Water	HDPE	12"

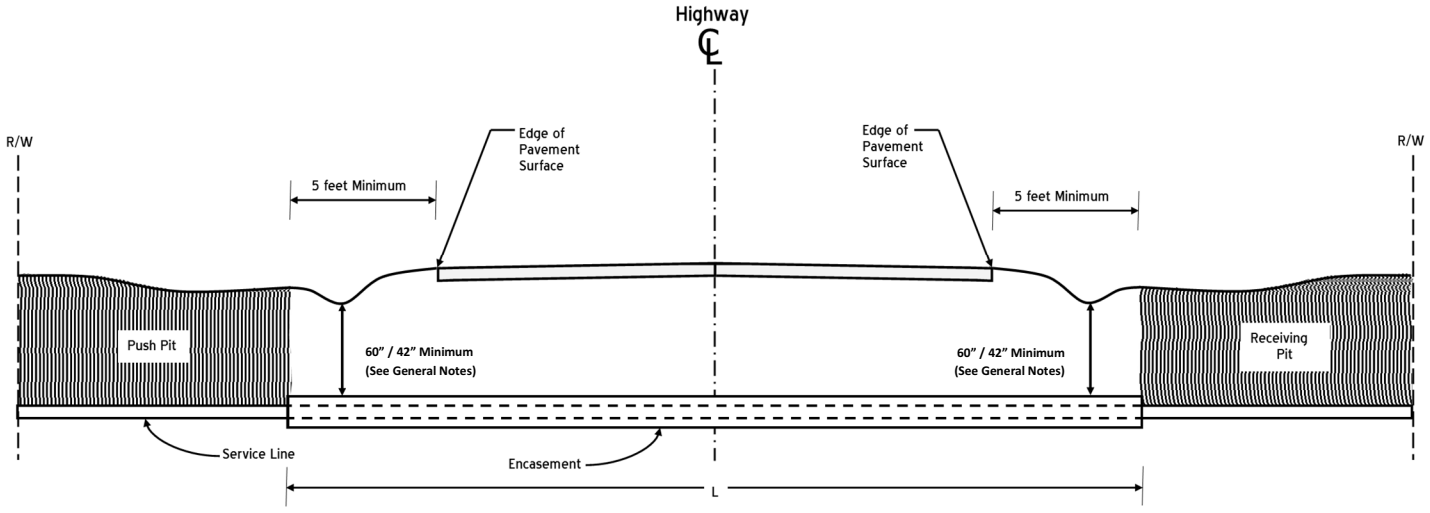
SECTION 3: ENCASEMENT INFORMATION

ENCASEMENT TYPE:	DIAMETER:
Steel	24"

SECTION 4: BORE INFORMATION

BORE TYPE:	LENGTH (L):	DIAMETER:
Bore and Jack	180	24"

SECTION 5: DETAIL FOR NON-FULLY CONTROLLED HIGHWAYS



SECTION 6: GENERAL NOTES

- Push Pit and Receiving Pit shall be backfilled and thoroughly compacted.
- All ditch lines are to remain open at all times and restored to original condition.
- Shape, Seed and Straw all disturbed areas immediately after completing the work.
- Provide traffic control as required to ensure the safety of the traveling public in accordance with the current edition of the *Manual on Uniform Traffic Control Devices*.
- The minimum depth for underground electrical lines and natural gas and petroleum fraction lines under roadways, ramps, and ditch lines is **60"**. The minimum depth for underground electrical lines, natural gas and petroleum fraction lines, and all other underground utilities is **42"** in all other areas, unless NESC requires additional depth.
- See KYTC Permits Manual for all requirements and specifications.

TYPICAL HIGHWAY BORE DETAIL
- FOR NON-FULLY CONTROLLED HIGHWAYS -

KYTC KEPT #: _____

SECTION 1: HIGHWAY INFORMATION

COUNTY:	ROUTE:	MILE POINT:	PAVEMENT WIDTH:
Oldham	US42	7	24'

SECTION 2: UTILITY INFORMATION

UTILITY TYPE:	PIPE TYPE:	DIAMETER:
Water	HDPE	12"

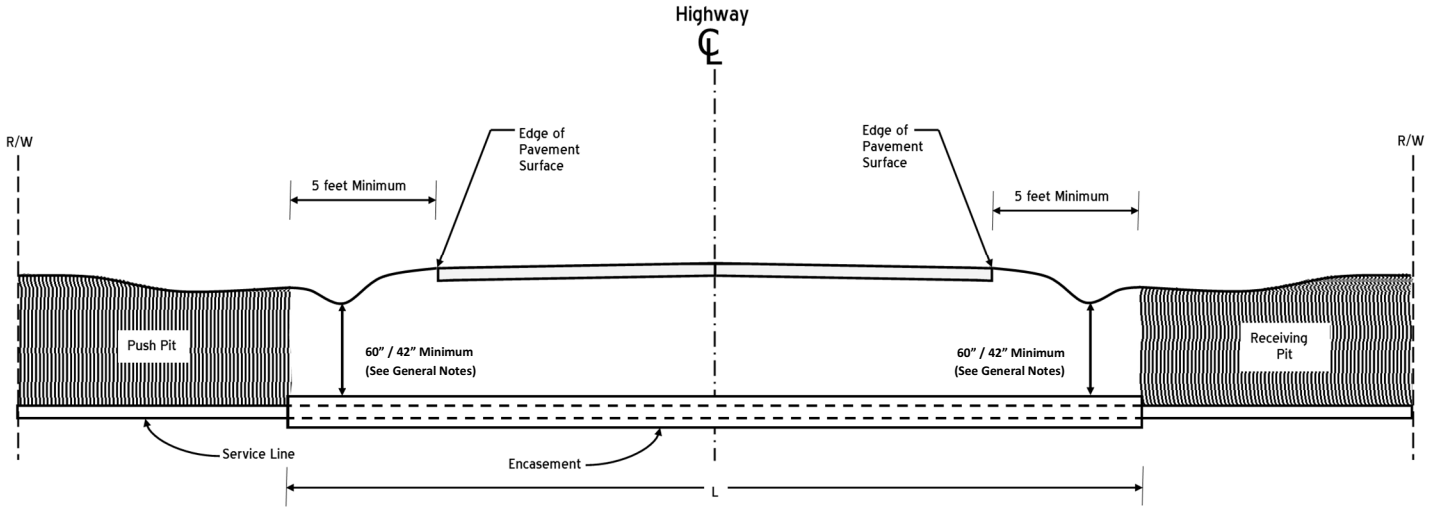
SECTION 3: ENCASEMENT INFORMATION

ENCASEMENT TYPE:	DIAMETER:
Steel	24"

SECTION 4: BORE INFORMATION

BORE TYPE:	LENGTH (L):	DIAMETER:
Bore and Jack	45	24"

SECTION 5: DETAIL FOR NON-FULLY CONTROLLED HIGHWAYS



SECTION 6: GENERAL NOTES

- Push Pit and Receiving Pit shall be backfilled and thoroughly compacted.
- All ditch lines are to remain open at all times and restored to original condition.
- Shape, Seed and Straw all disturbed areas immediately after completing the work.
- Provide traffic control as required to ensure the safety of the traveling public in accordance with the current edition of the *Manual on Uniform Traffic Control Devices*.
- The minimum depth for underground electrical lines and natural gas and petroleum fraction lines under roadways, ramps, and ditch lines is **60"**. The minimum depth for underground electrical lines, natural gas and petroleum fraction lines, and all other underground utilities is **42"** in all other areas, unless NESC requires additional depth.
- See KYTC Permits Manual for all requirements and specifications.

Exhibit 12

PRELIMINARY

KENTUCKY INFRASTRUCTURE AUTHORITY
ANTICIPATED REPAYMENT SCHEDULE
LOAN #C25-001
OLDHAM COUNTY WATER DISTRICT

2.75% Interest
$200,232.18 P & I Calculation

Payment Date	Principal Due	Interest Due	Interest Rate	Principal & Interest	Servicing Fee	Credit Due	Total Payment	Principal Balance	R & M Reserve	Total Reserve
								$6,129,061.00		
12/01/27	$115,957.59	$84,274.59	2.75%	$200,232.18	$7,661.33	$0.00	$207,893.51	$6,013,103.41	$15,300.00	$15,300.00
06/01/28	$117,552.01	$82,680.17	2.75%	$200,232.18	$7,516.38	$0.00	$207,748.56	$5,895,551.40	$0.00	$15,300.00
12/01/28	$119,168.35	$81,063.83	2.75%	$200,232.18	$7,369.44	$0.00	$207,601.62	$5,776,383.05	$15,300.00	$30,600.00
06/01/29	$120,806.91	$79,425.27	2.75%	$200,232.18	$7,220.48	$0.00	$207,452.66	$5,655,576.14	$0.00	$30,600.00
12/01/29	$122,468.01	$77,764.17	2.75%	$200,232.18	$7,069.47	$0.00	$207,301.65	$5,533,108.13	$15,300.00	$45,900.00
06/01/30	$124,151.94	$76,080.24	2.75%	$200,232.18	$6,916.39	$0.00	$207,148.57	$5,408,956.19	$0.00	$45,900.00
12/01/30	$125,859.03	$74,373.15	2.75%	$200,232.18	$6,761.20	$0.00	$206,993.38	$5,283,097.16	$15,300.00	$61,200.00
06/01/31	$127,589.59	$72,642.59	2.75%	$200,232.18	$6,603.87	$0.00	$206,836.05	$5,155,507.57	$0.00	$61,200.00
12/01/31	$129,343.95	$70,888.23	2.75%	$200,232.18	$6,444.38	$0.00	$206,676.56	$5,026,163.62	$15,300.00	$76,500.00
06/01/32	$131,122.43	$69,109.75	2.75%	$200,232.18	$6,282.70	$0.00	$206,514.88	$4,895,041.19	$0.00	$76,500.00
12/01/32	$132,925.36	$67,306.82	2.75%	$200,232.18	$6,118.80	$0.00	$206,350.98	$4,762,115.83	$15,300.00	$91,800.00
06/01/33	$134,753.09	$65,479.09	2.75%	$200,232.18	$5,952.64	$0.00	$206,184.82	$4,627,362.74	$0.00	$91,800.00
12/01/33	$136,605.94	$63,626.24	2.75%	$200,232.18	$5,784.20	$0.00	$206,016.38	$4,490,756.80	$15,300.00	$107,100.00
06/01/34	$138,484.27	$61,747.91	2.75%	$200,232.18	$5,613.45	$0.00	$205,845.63	$4,352,272.53	$0.00	$107,100.00
12/01/34	$140,388.43	$59,843.75	2.75%	$200,232.18	$5,440.34	$0.00	$205,672.52	$4,211,884.10	$15,300.00	$122,400.00
06/01/35	$142,318.77	$57,913.41	2.75%	$200,232.18	$5,264.86	$0.00	$205,497.04	$4,069,565.33	$0.00	$122,400.00
12/01/35	$144,275.66	$55,956.52	2.75%	$200,232.18	$5,086.96	$0.00	$205,319.14	$3,925,289.67	$15,300.00	$137,700.00
06/01/36	$146,259.45	$53,972.73	2.75%	$200,232.18	$4,906.61	$0.00	$205,138.79	$3,779,030.22	$0.00	$137,700.00
12/01/36	$148,270.51	$51,961.67	2.75%	$200,232.18	$4,723.79	$0.00	$204,955.97	$3,630,759.71	$15,300.00	$153,000.00
06/01/37	$150,309.23	$49,922.95	2.75%	$200,232.18	$4,538.45	$0.00	$204,770.63	$3,480,450.48	$0.00	$153,000.00
12/01/37	$152,375.99	$47,856.19	2.75%	$200,232.18	$4,350.56	$0.00	$204,582.74	$3,328,074.49	$15,300.00	$168,300.00
06/01/38	$154,471.16	$45,761.02	2.75%	$200,232.18	$4,160.09	$0.00	$204,392.27	$3,173,603.33	$0.00	$168,300.00
12/01/38	$156,595.13	$43,637.05	2.75%	$200,232.18	$3,967.00	$0.00	$204,199.18	$3,017,008.20	$15,300.00	$183,600.00
06/01/39	$158,748.32	$41,483.86	2.75%	$200,232.18	$3,771.26	$0.00	$204,003.44	$2,858,259.88	$0.00	$183,600.00
12/01/39	$160,931.11	$39,301.07	2.75%	$200,232.18	$3,572.82	$0.00	$203,805.00	$2,697,328.77	$15,300.00	$198,900.00
06/01/40	$163,143.91	$37,088.27	2.75%	$200,232.18	$3,371.66	$0.00	$203,603.84	$2,534,184.86	$0.00	$198,900.00
12/01/40	$165,387.14	$34,845.04	2.75%	$200,232.18	$3,167.73	$0.00	$203,399.91	$2,368,797.72	$15,300.00	$214,200.00
06/01/41	$167,661.21	$32,570.97	2.75%	$200,232.18	$2,961.00	$0.00	$203,193.18	$2,201,136.51	$0.00	$214,200.00
12/01/41	$169,966.55	$30,265.63	2.75%	$200,232.18	$2,751.42	$0.00	$202,983.60	$2,031,169.96	$15,300.00	$229,500.00
06/01/42	$172,303.59	$27,928.59	2.75%	$200,232.18	$2,538.96	$0.00	$202,771.14	$1,858,866.37	$0.00	$229,500.00
12/01/42	$174,672.77	$25,559.41	2.75%	$200,232.18	$2,323.58	$0.00	$202,555.76	$1,684,193.60	$15,300.00	$244,800.00
06/01/43	$177,074.52	$23,157.66	2.75%	$200,232.18	$2,105.24	$0.00	$202,337.42	$1,507,119.08	$0.00	$244,800.00
12/01/43	$179,509.29	$20,722.89	2.75%	$200,232.18	$1,883.90	$0.00	$202,116.08	$1,327,609.79	$15,300.00	$260,100.00
06/01/44	$181,977.55	$18,254.63	2.75%	$200,232.18	$1,659.51	$0.00	$201,891.69	$1,145,632.24	$0.00	$260,100.00
12/01/44	$184,479.74	$15,752.44	2.75%	$200,232.18	$1,432.04	$0.00	$201,664.22	$961,152.50	$15,300.00	$275,400.00
06/01/45	$187,016.33	$13,215.85	2.75%	$200,232.18	$1,201.44	$0.00	$201,433.62	$774,136.17	$0.00	$275,400.00
12/01/45	$189,587.81	$10,644.37	2.75%	$200,232.18	$967.67	$0.00	$201,199.85	$584,548.36	$15,300.00	$290,700.00
06/01/46	$192,194.64	$8,037.54	2.75%	$200,232.18	$730.69	$0.00	$200,962.87	$392,353.72	$0.00	$290,700.00
12/01/46	$194,837.32	$5,394.86	2.75%	$200,232.18	$490.44	$0.00	$200,722.62	$197,516.40	$15,300.00	$306,000.00
06/01/47	$197,516.40	$2,715.78	2.75%	$200,232.18	$246.90	$0.00	$200,479.08	$0.00	$0.00	$306,000.00
Totals	**$6,129,061.00**	**$1,880,226.20**		**$8,009,287.20**	**$170,929.65**	**$0.00**	**$8,180,216.85**		**$306,000.00**	

Created by KIA on 10/30/2026

Exhibit 13

KENTUCKY INFRASTRUCTURE AUTHORITY

Andy Beshear
Governor

100 Airport Road
Frankfort, Kentucky 40601
(502) 573-0260
kia.ky.gov

Sandy Williams
Executive Director

April 4, 2025

Mr. Russ Rose, Chief Executive Officer
Oldham County Water District
2160 Spencer Court
LaGrange, KY 40031

KENTUCKY INFRASTRUCTURE AUTHORITY
INFRASTRUCTURE REVOLVING LOAN FUND
CONDITIONAL COMMITMENT LETTER (C25-001)

Dear Mr. Rose:

The Kentucky Infrastructure Authority ("the Authority") commends your efforts to improve public service facilities in your community. On April 3, 2025, the Authority approved your loan for the US 42 West Improvements from KY-393 to KY-1694 project subject to the conditions stated in Attachment A to this letter. The total cost of the project shall not exceed $6,129,061, without prior authorization, of which the Authority is the sole source of the funding. The final loan amount will be equal to the amount of funds disbursed for the project. Attachment B incorporated herein by reference fully describes the project.

An Assistance Agreement will be executed between the Authority and the Oldham County Water District upon satisfactory performance of the conditions set forth in Attachment A. You must meet the conditions set forth in Attachment A and enter into an Assistance Agreement by April 4, 2026 (twelve months from the date of this letter). A one-time extension of up to six months may be granted for applicants that experience extenuating circumstances. Funds will be available for disbursement only after execution of the Assistance Agreement.

TEAM KENTUCKY

An Equal Opportunity Employer M/F/D

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project which will benefit both your community and the Commonwealth as a whole.

Sincerely,

Milward Dedman
Deputy Executive Director

Attachments

cc: Justin Carter, Kentuckiana Regional Planning & Development Agency (KIPDA)
GRW Engineers, Inc., Nicholas Gunselman

Please sign and return a copy of this letter indicating your acceptance of this commitment and its terms. Complete the attached "Authorization for Electronic Deposit of Vendor Payment Form" and the "ACH Debit Authorization Form" **and return to the US Bank address at the bottom of each form**. Also included are the "Legal Counsel Certification Letter" sample and the "Statement of Approval of Projections of Revenue and Expenses" for you to complete at the appropriate time. These forms and an SRF loan checklist guide can be found in Attachment C of this letter.

Russell D. Rose — 6/15/2024

Accepted — Date

ATTACHMENT A

Conditions

Oldham County Water District
C25-001

The Assistance Agreement and this commitment shall be subject, but not limited to, the following terms:

1. The Authority project loan shall not exceed $6,129,061.

2. The loan shall bear interest at the rate of 2.75% per annum commencing with the first draw of funds.

3. The loan shall be repaid over a period not to exceed 20 years from the date of the last draw of funds.

4. Interest shall be payable on the amount of actual funds received. The first payment shall be due on June 1, or December 1, immediately succeeding the date of the initial draw of funds, provided that if such June 1, or December 1, shall be less than three months since the date of the initial draw of funds, then the first interest payment date shall be the June 1, or December 1, which is at least six months from the date of the initial draw of funds. Interest payments will be due each six months thereafter until the loan is repaid. KIA requires the use of Automated Clearing House (ACH) debits for payment of all balances due on the loan. This will ensure that payments are credited timely to your account without the risk of incurring late payment fees. If the due date falls on a weekend or holiday your account will be debited on the next business day. Please complete and return the authorization form in Attachment C of this letter to U.S. Bank for processing.

5. Full principal payments will commence on June 1, or December 1, immediately succeeding the date of the last draw of funds, provided that if such June 1, or December 1, shall be less than three months since the date of the last draw of funds, then the first principal payment date shall be the June 1, or December 1, which is at least six months from the date of the last draw of funds. Full payments will be due each six months thereafter until the loan is repaid.

6. A loan servicing fee of 0.20% of the outstanding loan balance shall be payable to the Authority as a part of each interest payment.

7. Loan funds will only be disbursed after execution of the Assistance Agreement as project costs are incurred.

8. The Authority loan funds must be expended within six months of the official date of initiation of operation.

9. The Authority requires that an annual financial audit be provided for the life of the loan.

10. The final Assistance Agreement must be approved by ordinance or resolution, as applicable, of the city council or appropriate governing board.

11. The borrower must maintain a 1.1 debt coverage ratio throughout the life of the KIA loan. All borrowers are subject to at least an annual financial review for compliance.

The following is a list of the standard conditions to be satisfied prior to execution of the Assistance Agreement or incorporated in the Assistance Agreement. Any required documentation must be submitted to the party designated.

1. Upon completion of final design of the facilities in the attached project description, favorable approval shall be obtained of such design by all appropriate parties as required by Kentucky statute or administrative regulation.

2. The Borrower must provide certification from their legal counsel stating that the procurement procedures, including those for construction, land, equipment and professional services that are a part of the project, are in compliance with applicable state and local procurement laws.

3. Documentation of final funding commitments from all parties other than the Authority as reflected in the Attachment B description shall be provided prior to preparation of the Assistance Agreement and disbursement of the loan monies. Rejections of any anticipated project funding, or any new funding sources not reflected in Attachment B shall be immediately reported and may cause this loan to be subject to further consideration.

4. Upon receipt of construction bids a tabulation of such bids and engineer's recommendations on compliance with bid specifications and recommendation for award, shall be forwarded to the Authority for final approval and sizing of this loan and the project.

5. The loan must undergo review by the Capital Projects and Bond Oversight Committee of the Kentucky Legislature prior to the state's execution of the Assistance Agreement. The Committee meets monthly. Any special conditions listed in Attachment B must be satisfied before the project is presented before the Committee.

6. Any required adjustment in utility service rates shall be adopted by ordinance, municipal order or resolution by the appropriate governing body of the Borrower. Public hearings as required by law shall be held prior to the adoption of the service rate ordinance, order, or resolution. Any required approvals by the Kentucky Public Service Commission shall be obtained.

7. Based on the final "as bid" project budget, the borrower must provide satisfactory proof, based on then existing conditions, that the revenue projections in the attached descriptions are still obtainable and that the projections of operating expenses have not materially changed. The "as bid" project budget shall be reviewed and approved by your consultant engineer.

8. All easements or purchases of land shall be completed prior to commencement of construction. Certification of all land or easement acquisitions shall be provided to the Authority.

9. The Borrower must provide documentation of Clearinghouse Endorsement and Clearinghouse Comments.

10. The Borrower must complete and return the "Authorization for Electronic Deposit of Borrower Payment" form in Attachment C of this letter to U.S. Bank.

11. The Borrower will implement the Kentucky Uniform System of Accounting (KUSoA), or an alternative approved by the Authority and assure that rates and charges for services are based upon the cost of providing such service.

12. The Borrower will provide Final Design Plans in an AutoCAD Drawing File Format (DWG), referenced to the appropriate (North, South or Single) Kentucky State Plane Coordinate System (NAD83-Survey Feet) on a Compact Disc (CD). The recipient shall provide the Authority a digital copy (pdf) of the record drawings from the project within three months of construction completion.

ATTACHMENT B

Executive Summary and Credit Analysis

Oldham County Water District
C25-001

EXECUTIVE SUMMARY		Reviewer	Jeremy Skinner
KENTUCKY INFRASTRUCTURE AUTHORITY		Date	April 3, 2025
FUND C, GOVERNMENTAL AGENCIES FUND		KIA Loan Number	C25-001
REVOLVING LOAN FUND		WRIS Number	WX21185064
BORROWER	OLDHAM COUNTY WATER DISTRICT OLDHAM COUNTY		

BRIEF DESCRIPTION

Oldham County Water District is requesting a Fund C loan in the amount of $6,129,061 for the US 42 West Improvements from KY-393 to KY-1694 project. This project includes the installation of approximately 22,300 linear feet of 12-inch water line along US-42 from KY-393 to KY-1694. This project will increase water pressure and flow to an underserved portion of the District's customer base. The new water line will also provide a looped connection to multiple points in this part of the District's distribution system, strengthening the existing infrastructure and maintaining water supply in the event of a break.

PROJECT FINANCING		PROJECT BUDGET	
Fund C Loan	$6,129,061	Administrative Expenses	$10,000
		Legal Expenses	15,000
		Land, Easements	265,000
		Planning	12,600
		Eng - Design / Const	282,661
		Eng - Insp	150,000
		Eng - Other	56,000
		Construction	4,106,000
		Contingency	1,231,800
TOTAL	$6,129,061	TOTAL	$6,129,061

REPAYMENT	Rate	2.75%	Est. Annual Payment	$415,787
	Term	20 Years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	GRW Engineers, Inc.		
	Bond Counsel	Dinsmore & Shohl, LLP		
PROJECT SCHEDULE	Bid Opening	Aug-25		
	Construction Start	Nov-25		
	Construction Stop	Oct-26		
DEBT PER CUSTOMER	Existing	$1,221		
	Proposed	$1,835		
OTHER DEBT		See Attached		

RESIDENTIAL RATES		Users	Avg. Bill	
	Current	9,259	$24.92	(for 4,000 gallons)
	Additional	0	$24.92	(for 4,000 gallons)

REGIONAL COORDINATION This project is consistent with regional planning recommendations.

CASHFLOW	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2022	1,463,870	767,839	696,031	1.9
Audited 2023	1,232,242	589,849	642,393	2.1
Audited (DRAFT) 2024	1,690,336	591,942	1,098,394	2.9
Projected 2025	1,703,954	595,951	1,108,003	2.9
Projected 2026	1,535,374	599,521	935,853	2.6

OLDHAM COUNTY WATER DISTRICT

FINANCIAL SUMMARY (DECEMBER YEAR END)

	Audited 2022	Audited 2023	Audited (DRAFT) 2024	Projected 2025	Projected 2026	Projected 2027	Projected 2028	Projected 2029
Balance Sheet								
Assets								
Current Assets	6,200,846	14,658,229	15,821,103	16,048,128	16,248,007	16,334,768	16,377,172	16,393,932
Other Assets	50,326,721	43,880,347	43,632,657	45,568,794	50,426,538	49,263,995	48,032,266	46,687,606
Total	56,527,567	58,538,576	59,453,760	61,616,921	66,674,545	65,598,763	64,409,438	63,081,538
Liabilities & Equity								
Current Liabilities	869,488	750,307	966,327	981,360	1,302,913	1,317,113	1,334,413	1,349,713
Long Term Liabilities	16,630,092	17,369,993	16,547,482	17,730,859	21,689,571	21,036,978	20,366,701	19,698,625
Total Liabilities	17,499,580	18,120,300	17,513,809	18,712,219	22,992,484	22,354,091	21,701,114	21,048,338
Net Assets	39,027,987	40,418,276	41,939,951	42,904,702	43,682,061	43,244,672	42,708,324	42,033,200
Cash Flow								
Revenues	5,200,444	5,133,820	5,922,405	6,130,110	6,180,887	6,232,172	6,283,970	6,336,286
Operating Expenses	4,152,622	4,770,957	5,134,056	5,261,732	5,393,239	5,543,991	5,683,506	5,827,207
Other Income	416,048	869,379	901,987	835,577	747,726	699,211	656,241	599,879
Cash Flow Before Debt Service	1,463,870	1,232,242	1,690,336	1,703,954	1,535,374	1,387,392	1,256,705	1,108,957
Debt Service								
Existing Debt Service	767,839	589,849	591,942	595,951	599,521	602,722	604,898	609,055
Proposed KIA Loan	0	0	0	0	0	415,787	415,787	415,787
Total Debt Service	767,839	589,849	591,942	595,951	599,521	1,018,509	1,020,685	1,024,842
Cash Flow After Debt Service	696,031	642,393	1,098,394	1,108,003	935,853	368,883	236,020	84,115
Ratios								
Current Ratio	7.1	19.5	16.4	16.4	12.5	12.4	12.3	12.1
Debt to Equity	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Days Sales in Accounts Receivable	45.9	48.5	59.2	59.2	59.2	59.2	59.2	59.2
Months Operating Expenses in Unrestricted Cash	14.1	32.7	32.1	31.9	31.5	30.9	30.2	29.5
Debt Coverage Ratio	1.9	2.1	2.9	2.9	2.6	1.4	1.2	1.1

Reviewer: Jeremy Skinner
Date: April 3, 2025
Loan Number: C25-001

KENTUCKY INFRASTRUCTURE AUTHORITY
GOVERNMENTAL AGENCIES LOAN FUND (FUND C)
OLDHAM COUNTY WATER DISTRICT, OLDHAM COUNTY
PROJECT REVIEW
WX21185064

I. PROJECT DESCRIPTION

Oldham County Water District is requesting a Fund C loan in the amount of $6,129,061 for the US 42 West Improvements from KY-393 to KY-1694 project. This project includes the installation of approximately 22,300 linear feet of 12-inch water line along US 42 from KY-393 to KY-1694. This project will increase water pressure and flow to an underserved portion of the District's customer base. The new water line will also provide a looped connection to multiple points in this part of the District's distribution system, strengthening the existing infrastructure and maintaining water supply in the event of a break.

This project is one phase of a larger project intended to provide redundancy and improve the water pressure and flow in this part of the county. A second phase of the project, which includes the installation of water line from KY-1694 to South Buckeye Lane, will be funded with previously awarded Cleaner Water Program Grants.

Oldham County Water District serves 8,576 residential customers and 682 commercial and industrial customers. The District also sells water to the LaGrange Utilities Commission.

II. PROJECT BUDGET

	Total
Administrative Expenses	$10,000
Legal Expenses	15,000
Land, Easements	265,000
Planning	12,600
Engineering Fees – Design	226,129
Engineering Fees – Construction	56,532
Engineering Fees – Inspection	150,000
Engineering Fees – Other	56,000
Construction	4,106,000
Contingency	1,231,800
Total	**$6,129,061**

III. PROJECT FUNDING

	Amount	%
Fund C Loan	$6,129,061	100.0%
Total	**$6,129,061**	**100.0%**

IV. KIA DEBT SERVICE

Construction Loan	$6,129,061
Less: Principal Forgiveness	0
Amortized Loan Amount	$6,129,061
Interest Rate	2.75%
Loan Term (Years)	20
Estimated Annual Debt Service	$400,464
Administrative Fee (0.20%)	15,323
Total Estimated Annual Debt Service	**$415,787**

V. PROJECT SCHEDULE

Bid Opening:	August 2025
Construction Start:	November 2025
Construction Stop:	October 2026

VI. RATE STRUCTURE

A. Customers

Customers	Current
Residential	8,576
Commercial	682
Wholesale	1
Total	9,259

B. Rates

Water - 5/8" Meter Rates	Current	Prior
Date of Last Rate Increase	6/18/2024	12/9/2009
Minimum Charge	$8.64	$8.84
Volumetric Retail Rate (per gallon)	0.00407	0.0037
Cost for 4,000 gallons	$24.92	$23.64
Increase %	5.4%	
Affordability Index (Rate/MHI)	0.3%	0.2%

Water – 3/4" Meter Rates	Current	Prior
Date of Last Rate Increase	6/18/2024	12/9/2009
Minimum Charge	$13.02	$9.73
Volumetric Retail Rate (per gallon)	0.00407	0.0037
Cost for 4,000 gallons	$29.30	$24.53
Increase %	19.4%	
Affordability Index (Rate/MHI)	0.3%	0.3%

Water – Wholesale	Current	Prior
Date of Last Rate Increase	6/18/2024	9/28/2018
Volumetric Retail Rate (per gallon)	0.00268	0.002
Increase %	34.0%	

VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2018-2022, the Utility's service area population is 18,569 with a Median Household Income (MHI) of $113,804. The MHI for the Commonwealth is $60,183. The loan will qualify for a 2.75% interest rate.

VIII. FINANCIAL ANALYSIS

Financial information was obtained from the audited financial statements for the years ended December 31, 2022, through December 31, 2024. The audited financial statement for the year ended December 31, 2024, was in a draft form as of the date of this analysis. The District does not anticipate any material changes in the financial information prior to the draft being finalized. The non-cash impacts of GASB 68 – Accounting and Financial Reporting for Pensions and GASB 75 – Accounting and Financial Reporting for Other Postemployment Benefit have been removed from the operating expenses. Percentage references in the History section below are based on whole dollar amounts and not the rounded amounts presented.

HISTORY

Total water revenues increased nearly 14 percent from $5.20 million in 2022 to $5.92 million in 2024 due to adjustments to the District's retail and wholesale water rates and, to a lesser extent, steady increases in retail water sales. Operating expenses increased 16.4 percent in 2023 and 9.6 percent in 2024 due to inflation-related price increases as well as increased employee wages. In addition to operating revenues, the District earns stable and consistent non-operating revenues in the form of income from cellular carriers leasing space to mount antennas on the District's water towers and in the form of fees from local sewer and sanitation districts outsourcing their billing to the District. The District's existing debt consists of revenue bonds with a year-end

2024 balance of $11.38 million. The debt service coverage ratio was 1.9, 2.1, and 2.9 for 2022, 2023, and 2024, respectively.

The balance sheet reflects a current ratio of 16.4, a debt-to-equity ratio of 0.4, 59.2 days of sales in accounts receivable, and 32.1 months of operating expenses in unrestricted cash.

PROJECTIONS

Projections are based on the following assumptions:

1) Retail water and wholesale revenues will increase 2 percent and 17 percent, respectively, in 2025 due to rate increases previously approved by the Public Service Commission.
2) Retail water revenues will increase 1 percent annually starting in 2026 based on historical year-to-year increases.
3) Wholesale water revenues will remain unchanged following the 2025 increase based on historical wholesale sales data.
4) Operating expenses will increase 3 percent annually due to inflation and general expense increases.
5) The District's debt service coverage ratio is 1.4 in 2027 when principal and interest repayments commence.

Based on the pro forma assumptions, the utility shows adequate cash flow to repay the KIA Fund C loan.

The ENTITY is regulated by the Public Service Commission (PSC) and will need to apply to the PSC, pursuant to KRS 278.300, for debt authorization for the $6,129,061 loan and must receive a Certificate of Public Convenience and Necessity, pursuant to KRS 278.020.

REPLACEMENT RESERVE

The replacement reserve will be 5% ($306,000 total) of the final amount borrowed to be funded annually ($15,300 yearly) each December 1 for 20 years and maintained for the life of the loan.

IX. DEBT OBLIGATIONS

	Outstanding	Maturity
Revenue Bonds – Series 2010A	$ 3,501,100	2049
Revenue Bonds – Series 2010B	7,875,000	2052
Total	**$ 11,376,100**	

X. CONTACTS

Legal Applicant	
Name	Oldham County Water District
Address	2160 Spencer Court LaGrange, KY 40031
County	Oldham
Authorized Official	Russ Rose
Phone	(502) 222-1690
Email	rrose@oldhamcountywaterky.gov

Project Contact - Applicant	
Name	Shanna Stone
Organization	Engineering Manager
Address	2160 Spencer Court LaGrange, KY 40031
Phone	(502) 222-1690
Email	sstone@oldhamcountywaterky.gov

Project Administrator	
Name	Justin Carter
Organization	Kentucky Regional Planning & Development Agency (KIPDA)
Address	11520 Commonwealth Dr. Louisville, KY 40299
Phone	(502) 266-6084
Email	justin.carter@kipda.org

Consulting Engineer	
Name	Nicholas Gunselman
Firm	GRW Engineers, Inc.
Address	10350 Ormsby Park Place, Ste 101 Louisville, KY 40223
Phone	(502) 489-8484
Email	ngunselman@grwinc.com

XI. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

ATTACHMENT C

Forms

Oldham County Water District
C25-001

Fund B/C
LOAN CONDITIONS CHECKLIST

Congratulations on receiving a conditional commitment of funding from KIA's Fund B/C Loan Program. Borrowers will now be assigned a Compliance Analyst to help guide them through the rest of the loan process based on which Area Development District (ADD) they are located. Please submit all documents to one of the following contacts:

- Julie Bickers (Julie.Bickers@ky.gov, 502-892-3455): Purchase, Pennyrile, Green River, Barren River, Lake Cumberland, Cumberland Valley, Big Sandy, Kentucky River
- Debbie Landrum (Debbie.Landrum@ky.gov, 502-892-3454): Lincoln Trail, KIPDA, Northern KY, Bluegrass, Buffalo Trace, Gateway, FIVCO

After all of the conditions of the Conditional Commitment Letter have been fulfilled, KIA will initiate the Assistance Agreement with the borrower. The Assistance Agreement must be fully executed before any funds may be disbursed. The following is a list of items needed to process your loan (forms can be found here https://kia.ky.gov/FinancialAssistance/Pages/Forms.aspx):

Before bid opening, submit the following items to the designated agency.

Submit To:		
KIA	☐	**Conditional Commitment Letter** (this letter is sent to the borrower via email shortly following KIA board approval and is to be signed by the authorizing official)
USBANK	☐	**Authorization for Electronic Deposit/Debit of Borrower Disbursements/ Payment** (these forms are attached to the loan commitment letter sent after KIA board approval and are to be signed by the authorizing official and forwarded to US Bank)
KIA	☐	**Eclearinghouse Endorsement** (if not already submitted with loan application)
DOW	☐	**Plans and specifications** (Kentucky Division of Water will review and KIA will need copy of approval letter)
KIA	☐	**Proof of compliance with any special condition identified in the Conditional Commitment Letter** (e.g. adopted ordinance).

After the project has opened bids, please submit the following items to the designated agency assigned below. It is imperative that the remaining standard conditions are fulfilled by the deadlines set forth in the Conditional Commitment Letter.

Submit To:		
KIA	☐	**Bid Advertisement**
KIA	☐	**Bid Tabulation and Engineer's Recommendation**
KIA	☐	**As-Bid Budget**
KIA	☐	**Procurement Certification** (KIA sends to borrower after bid opening for signature.)
KIA	☐	**Certification of obtainable revenue projections** (KIA sends to borrower after bid opening for signature.)
KIA	☐	**Certification of clear site** (KIA sends to borrower after bid opening for signature.)
KIA	☐	**Plans and specifications approval** from the Kentucky Division of Water
KIA	☐	**Public Service Commission (PSC) approval**, (CPCN and Authorization to Incur Debt) if applicable.

TRANSPARENCY ACT REPORTING INFORMATION FORM

CLEAN WATER STATE REVOLVING FUND
AND
DRINKING WATER STATE REVOLVING FUND

This form is required for projects funded in whole or in part from the Clean Water State Revolving Fund or the Drinking Water State Revolving Fund. This form is to be completed and returned with the signed Conditional Commitment Letter from the Kentucky Infrastructure Authority.

Borrower Information:

Name:	
Unique Entity ID (generated by SAM.gov)*:	
KIA Loan Number:	
Street Address	
City, State and Zip (Zip must include 4 digit extension)	
Federal Congressional District(s) of Borrower Utility Service Area:	

*If the Unique Entity ID provided above is registered under a different name than the recipient of funding, please provide the registration name below:

Unique Entity ID Name	

*If the recipient has not yet obtained a Unique Entity ID, please do so no later than 30 days after the KIA Board approval date of your loan request and provide notification to KIA of the number once issued.

Physical Location of Project (Primary Place of Performance)

Street Address	
City, State and Zip (Zip must include 4 digit extension)	
Federal Congressional District(s) of Project Location	

Reliance upon Federal Assistance (please answer the below questions Yes or No):

Did recipient receive 80% or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) during the last fiscal year?	
Did recipient receive $25 million or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards) during the last fiscal year?	
Does the public have access to compensation of senior executives of the recipient through periodic reports filed under Section 13A or 15D of the Securities Exchange Act of 1934 or Section 6104 of the Internal Revenue Code of 1986?	

Unique Entity ID Registration Information: https://sam.gov

KIA Loan # _____

ACH DEBIT AUTHORIZATION FORM

AUTHORIZATION AGREEMENT FOR PRE-ARRANGED PAYMENTS (DEBITS)

The undersigned hereby authorizes U.S. Bank National Association Corporate Trust Department ("U.S. Bank") to initiate debit entries to the Checking ☐ Savings ☐ (specify type) account indicated below at the bank named below:

BANK NAME_____BRANCH_____

CITY_____STATE_ZIP CODE _____

BANK TRANSIT/ABA NO._____ACCOUNT NO. _____

This authority is to remain in full force and effect until U.S. Bank has received written notification from the undersigned of its termination in such time and in such manner as to afford U.S. Bank a reasonable opportunity to act. The undersigned has the right to stop payment of a debit entry by reasonable prior written notification to U.S. Bank. After the above account has been charged, the undersigned has the right to have the amount of any erroneous debit immediately credited to its account by U.S. Bank up to 30 days following issuance of a statement.

NAME OF ENTITY: _____

ADDRESS_____

TAX IDENTIFICATION NUMBER: _____

By_____ Dated _____

Authorized Signer

Send to: U.S. Bank via Email

KentuckyInfrastructureAuth@usbank.com

AUTHORIZATION FOR ELECTRONIC DEPOSIT
OF BORROWER PAYMENT
KENTUCKY INFRASTRUCTURE AUTHORITY
KIA Loan #_____

Borrower Information:

Name: _____

Address: _____

City: _____ State: KY Zip: _____

Federal I.D. #: _____ Telephone: _____

Contact Name: _____

Email: _____

Financial Institution Information:

Bank Name: _____

Branch: _____ Telephone: _____

City: _____ State: KY Zip: _____

Transit / ABA No: _____

Account Name: _____

Account Number: _____

I, the undersigned, authorize payments directly to the account indicated above and to correct any errors which may occur from the transactions. I also authorize the Financial Institution to post these transactions to that account.

Signature: _____ Date: _____

Name Printed: _____ Job Title: _____

Send to: U.S. Bank via Email
KentuckyInfrastructureAuth@usbank.com

EZ VENDOR REGISTRATION APPLICATION

A Vendor Number must be obtained on-line though the Kentucky Cabinet for Finance and Administration. This Vendor Number is *required for Grantee to receive payments from the Authority.*

Vendor Registration Guide

Link to the Vendor Self Service Site

The Grantee's Vendor Number is _____.

Project Administrator: _____

Grant/Loan Number: _____

COMPLETE AFTER BID OPENING

STATEMENT OF APPROVAL
OF PROJECTIONS OF REVENUE AND EXPENSES

Borrower Name: _____

Loan No.: _____

I hereby certify that the revenue projections in the attached descriptions are still obtainable and that projections of operating expenses have not materially changed based on the "as-bid" budget submitted for the Project.

Signed: _____

_____
Borrower

_____
Date

SAMPLE LETTER

[Letterhead of Counsel for Water Utility]

[Date]

Kentucky Infrastructure Authority
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601

RE: SRF Loan#
City of xxxxx

Ladies and Gentlemen:

The undersigned is an attorney at law duly admitted to the practice of law in the Commonwealth of Kentucky and is legal counsel to the XXXXXXXXXXXX, hereinafter referred to as the "Water Utility ". I am familiar with the organization and existence of the Water Utility and the laws of the Commonwealth applicable thereto. Additionally I am familiar with the water project (the "Project") with respect to which the funding commitment by and between the Kentucky Infrastructure Authority ("Authority") and the Water Utility.

I have reviewed the commitment letter by and between the Authority and the Water Utility and the documentation regarding wage rates and procurement with respect to the Project.

Based upon my review I am of the opinion that:

The Water Utility has prepared construction specifications in accordance with all applicable federal wage rate laws and that the procurement procedures including those for construction, land, equipment and professional services that are a part of the project are in compliance with all applicable federal, state and local procurement laws.

Respectfully,

KENTUCKY INFRASTRUCTURE AUTHORITY

Andy Beshear
Governor

100 Airport Road
Frankfort, Kentucky 40601
(502) 573-0260
kia.ky.gov

Sandy Williams
Executive Director

April 26, 2026

Mr. Russell Rose
Oldham County Water District
PO Box 51
Buckner, KY 40010

KENTUCKY INFRASTRUCTURE AUTHORITY
FEDERALLY ASSISTED Fund WATER REVOLVING LOAN FUND
CONDITIONAL COMMITMENT LETTER (C25-001)
EXTENSION

Dear Mr. Rose:

The Kentucky Infrastructure Authority ("the Authority") has approved an extension of the Water State Revolving Fund loan C25-001 for the US 42 Water Main Extension KY 1694 to KY 393 Project. The Authority has extended the deadline for the District to meet the conditions set forth in the conditional commitment letter for a period of six (6) months. The original expiration date was April 4, 2026. The new expiration date will be October 4, 2026. If the project does not meet the conditions by the new expiration date, the commitment may be rescinded.

All original terms and conditions from the commitment letter dated April 4, 2026 shall remain in effect.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project to benefit both your community and the Commonwealth.

Sincerely,

Milward Dedman
Deputy Executive Director

TEAM KENTUCKY

An Equal Opportunity Employer M/F/D

Please sign and return a copy of this letter indicating your acceptance of this commitment letter extension and its terms.

_____ _____

Accepted Date

KENTUCKY INFRASTRUCTURE AUTHORITY

Andy Beshear
Governor

100 Airport Road
Frankfort, Kentucky 40601
(502) 573-0260
kia.ky.gov

Sandy Williams
Executive Director

November 2, 2026

Mr. Russell D. Rose, CEO
Oldham County Water District
PO Box 51
Buckner, KY 40010

KENTUCKY INFRASTRUCTURE AUTHORITY
FEDERALLY ASSISTED WATER REVOLVING LOAN FUND
CONDITIONAL COMMITMENT LETTER (C25-001)
EXTENSION

Dear Mr. Rose:

The Kentucky Infrastructure Authority ("the Authority") has approved an extension of the Water State Revolving Fund C25-001 for the US 42 Water Main Extension KY 1694 to KY 393 Project. The Authority has extended the deadline for the District to meet the conditions set forth in the conditional commitment letter for a period of six (6) months. The original expiration date was April 4, 2026. The new expiration date will be February 4, 2027. If the project does not meet the conditions by the new expiration date, the commitment may be rescinded.

All original terms and conditions from the commitment letter dated April 4,2026, shall remain in effect.

Please inform the Authority of any changes in your financing plan as soon as possible. We wish you every success for this project to benefit both your community and the Commonwealth.

Sincerely,

Milward Dedman
Deputy Executive Director

TEAM KENTUCKY

An Equal Opportunity Employer M/F/D

Please sign and return a copy of this letter indicating your acceptance of this commitment letter extension and its terms.

Russell O. Rose
Accepted

November 2, 2026
Date

Exhibit 14

OLDHAM COUNTY water DISTRICT

Bonds Authorized

	Amount Issued	Date of Issue	Principal Amount Owed as of 9/30/26	Rate of Interest	Date of Maturity	Interest Paid in 2025
Waterworks Revenue Bonds - Series 2010A*	$ 4,243,100	12/31/2010	$ 3,343,100	3.750%	1/1/2049	$ 129,859
Waterworks Revenue Bonds - Series 2010B	$ 9,000,000	3/27/2013	$ 7,582,000	3.125%	1/1/2052	$ 246,092
	$ 13,243,100		$ 10,925,100			$ 375,951

Both Bonds above are secured by a pledge of the revenues of Oldham County Water District

*Build America Bonds - interest rebate from the government by filing required form IRS 8038 CP

Exhibit 15

OLDHAM COUNTY WATER DISTRICT

Income Statement
October 1, 2025 - September 30, 2026

	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Total 12 month
OPERATING REVENUES													
Metered Sales	$ 532,389	$ 422,874	$ 423,685	$ 395,528	$ 390,464	$ 386,835	$ 384,792	$ 415,371	$ 485,320	$ 494,521	$ 483,045	$ 483,524	$ 5,298,348
Sales for Resale	$ 78,991	$ 73,648	$ 81,515	$ 75,549	$ 75,006	$ 80,533	$ 77,580	$ 73,558	$ 83,836	$ 87,297	$ 97,718	$ 108,168	$ 993,399
Other Sales	$ 3,630	$ 47,447	$ 38,843	$ 2,729	$ 2,714	$ 3,280	$ 2,973	$ 3,300	$ 11,099	$ 6,655	$ 4,558	$ 4,857	$ 132,084
TOTAL OPERATING REVENUES	**$ 615,010**	**$ 543,968**	**$ 544,043**	**$ 473,805**	**$ 468,184**	**$ 470,648**	**$ 465,345**	**$ 492,229**	**$ 580,255**	**$ 588,474**	**$ 585,320**	**$ 596,550**	**$ 6,423,831**
OPERATING EXPENSES													
Wages & Benefits	$ 303,068	$ 295,857	$ 308,395	$ 278,570	$ 257,691	$ 287,139	$ 277,502	$ 282,855	$ 306,187	$ 306,323	$ 303,147	$ 301,176	$ 3,507,908
Utilities & Supplies	$ 115,286	$ 120,788	$ 176,581	$ 51,120	$ 67,959	$ 85,621	$ 114,771	$ 70,893	$ 161,704	$ 155,432	$ 248,188	$ 91,560	$ 1,459,903
Contract Services	$ 57,546	$ 10,977	$ (14,133)	$ 65,278	$ 8,054	$ 26,269	$ 30,347	$ 14,316	$ 23,602	$ 15,787	$ 23,766	$ 15,807	$ 277,616
Vehicle Costs	$ 10,775	$ 9,750	$ 6,216	$ 7,856	$ 9,448	$ 9,499	$ 18,913	$ 4,394	$ 16,154	$ 12,356	$ 10,306	$ 9,296	$ 124,962
Insurance	$ 11,326	$ 10,549	$ 2,816	$ 13,988	$ 13,396	$ 11,442	$ 16,549	$ 14,093	$ 10,623	$ 12,115	$ 12,113	$ 12,113	$ 141,123
Bad Debts	$ -	$ -	$ (43)	$ -	$ -	$ -	$ 206	$ -	$ -	$ -	$ -	$ -	$ 163
Miscellaneous Expenses	$ 15,312	$ 11,185	$ 13,597	$ 5,410	$ 13,042	$ 11,634	$ 10,433	$ 9,466	$ 9,094	$ 25,944	$ 9,775	$ 16,298	$ 151,191
Depreciation Expense	$ 88,755	$ 90,578	$ 90,578	$ 94,763	$ 95,249	$ 95,652	$ 98,944	$ 101,000	$ 101,036	$ 99,041	$ 99,041	$ 99,041	$ 1,153,679
TOTAL OPERATING EXPENSES	**$ 602,068**	**$ 549,685**	**$ 584,008**	**$ 516,984**	**$ 464,839**	**$ 527,256**	**$ 567,664**	**$ 497,016**	**$ 628,400**	**$ 626,999**	**$ 706,336**	**$ 545,290**	**$ 6,816,544**
OPERATING INCOME	**$ 12,942**	**$ (5,716)**	**$ (39,965)**	**$ (43,178)**	**$ 3,345**	**$ (56,608)**	**$ (102,319)**	**$ (4,787)**	**$ (48,145)**	**$ (38,525)**	**$ (121,015)**	**$ 51,260**	**$ (392,713)**
NON-OPERATING REVENUES													
Rents from Water Property	$ 10,004	$ 10,181	$ 10,103	$ 10,103	$ 10,103	$ 10,103	$ 10,103	$ 30,970	$ 10,103	$ 10,103	$ 10,149	$ 10,236	$ 142,264
Sewer & Garbage Billing Fee	$ 5,909	$ 5,934	$ 5,918	$ 5,922	$ 6,099	$ 6,130	$ 6,160	$ 6,169	$ 6,180	$ 6,201	$ 6,203	$ 6,231	$ 73,056
Grant Income	$ -	$ 3,000	$ -	$ -	$ -	$ -	$ -	$ 1,189	$ -	$ -	$ -	$ -	$ 4,189
Gain/Loss on Sales of Assets	$ -	$ -	$ (25,181)	$ -	$ -	$ -	$ -	$ -	$ -	$ 31,696	$ -	$ -	$ 6,515
Interest Income	$ 48,118	$ 47,514	$ 67,060	$ 28,277	$ 41,722	$ 42,530	$ 63,787	$ 42,819	$ 47,805	$ 46,242	$ 47,293	$ 47,921	$ 571,088
Miscellaneous Income	$ -	$ (3)	$ 69,792	$ 6,594	$ -	$ 2,713	$ 2	$ -	$ 3,168	$ 5,358	$ 1,090	$ 196,620	$ 285,334
TOTAL NON-OPERATING REVENUES	**$ 64,030**	**$ 66,626**	**$ 127,692**	**$ 50,896**	**$ 57,924**	**$ 61,477**	**$ 80,052**	**$ 81,147**	**$ 67,256**	**$ 99,601**	**$ 64,735**	**$ 261,008**	**$ 1,082,445**
NON-OPERATING EXPENSES													
Amortization Expense	$ 214	$ 214	$ 36,887	$ 214	$ 214	$ 214	$ 214	$ 214	$ 214	$ 214	$ 214	$ 214	$ 39,237
Interest Expenses	$ 30,552	$ 30,551	$ 30,558	$ 30,107	$ 30,112	$ 30,106	$ 30,112	$ 30,112	$ 30,112	$ 30,278	$ 30,285	$ 30,284	$ 363,168
TOTAL NON-OPERATING EXPENSES	**$ 30,766**	**$ 30,765**	**$ 67,445**	**$ 30,320**	**$ 30,325**	**$ 30,320**	**$ 30,325**	**$ 30,326**	**$ 30,326**	**$ 30,492**	**$ 30,498**	**$ 30,498**	**$ 402,405**
NON-OPERATING REVENUES (EXPENSES)	**$ 33,265**	**$ 35,862**	**$ 60,247**	**$ 20,576**	**$ 27,599**	**$ 31,157**	**$ 49,727**	**$ 50,821**	**$ 36,930**	**$ 69,109**	**$ 34,237**	**$ 230,510**	**$ 680,040**
CONTRIBUTIONS & EXTRAORDINARY INCOME	**$ 46,207**	**$ 30,145**	**$ 20,282**	**$ (22,602)**	**$ 30,944**	**$ (25,452)**	**$ (52,592)**	**$ 46,035**	**$ (11,214)**	**$ 30,584**	**$ (86,778)**	**$ 281,770**	**$ 287,327**
Extraordinary Income	$ 803,694	$ 205,323	$ 766,901	$ -	$ -	$ -	$ -	$ 84,488	$ 203,081	$ -	$ 17,413	$ -	$ 2,080,899
Capital Contributions	$ 15,400	$ 38,006	$ 1,351,371	$ 19,800	$ 19,800	$ 35,200	$ 62,038	$ 13,200	$ 214,963	$ 174,256	$ 336,855	$ 321,059	$ 2,601,949
CHANGE IN NET POSITION	**$ 865,300**	**$ 273,474**	**$ 2,138,554**	**$ (2,802)**	**$ 50,744**	**$ 9,748**	**$ 9,446**	**$ 143,722**	**$ 406,830**	**$ 204,840**	**$ 267,490**	**$ 602,828**	**$ 4,970,176**

OLDHAM COUNTY water DISTRICT

Balance Sheet as of September 30, 2026

ASSETS	
Cash	$17,458,432.31
Customer accounts receivable, net	$980,956.15
Other receivables	$8,195.70
PFAS receivable - current	$0.00
Lease receivable - current	$96,793.53
Interest receivable	$0.00
Prepaid expenses	$55,786.35
Inventory	$1,110,690.54
Deferred rate case	$36,673.56
PFAS receivable - noncurrent	$445,658.16
Lease receivable - noncurrent	$1,674,686.23
Regulatory asset - CERS pension	$3,124,391.50
Regulatory asset - CERS OPEB	$333,474.00
Nondepreciable capital assets	$4,718,019.58
Property, plant and equipment, net	$34,761,402.87
Total assets	**$64,805,160.48**
DEFERRED OUTFLOWS OF RESOURCES	
Deferred Outflows - pension	$303,475.00
Deferred Outflows - OPEB	$339,936.00
Total deferred outflows of resources	**$643,411.00**
Total assets and deferred outflows of resources	**$65,448,571.48**
LIABILITIES	
Accounts payable	$69,511.53
Accrued compensated absences	$209,843.32
Tax collections	$22,802.36
Other collections	$229,416.72
Accrued payroll and taxes	$148,612.98
Other accrued expenses	$49,082.31
Accrued interest	$90,317.25
Bonds Payable	$10,861,109.52
Net pension liability	$3,114,110.00
Net OPEB liability	$53,782.00
Total liabilities	**$14,848,587.99**
DEFERRED INFLOWS OF RESOURCES	
Deferred inflows - pension	$313,757.00
Deferred inflows - OPEB	$619,628.00
Deferred inflows - leases	$1,771,479.76
Total deferred inflows of resources	**$2,704,864.76**
NET POSITION	
Net Position	$46,203,651.62
Equity from Operations	$1,691,467.11
Total net position	**$47,895,118.73**
Total liabilities, deferred inflows or resources and net position	**$65,448,571.48**

Exhibit 16

LEGAL NOTICE

ADVERTISEMENT FOR BIDS

Oldham County Water District (the "District") is accepting sealed Bids, at its office located at 2160 Spencer Court, La Grange, KY 40031, for the construction of the US42 Water Main Extension KY1694 to KY393 (construction of approximately 16,321 L.F. of 12-inch HDPE water main, 395 L.F. of 12-inch HDPE water main bore and jacked in 24" steel casing pipe, gate valves, air release valves and manhole, leak detection vaults, hydrants, creek crossings and other appurtenances together with all related work) until **10:00 AM EST (local time), October 1, 2026**, at which time the Bids will be opened and publicly read aloud.

Questions should be directed to Nicholas Gunselman at NGunselman@grwinc.com by **5:00 PM (local time) on September 23, 2026.**

The BIDDING DOCUMENTS, may be examined at the District's office located at 2160 Spencer Court, La Grange, KY 40031 or at the office of GRW Engineers, Inc. ("GRW") at 10350 Ormsby Park Place, Suite 101, Louisville, KY 40223. They **must be obtained** from GRW through its Digital Plan Room at http://www.grwinc.com/plan-room upon payment of **$220.00** per set.

Bids may be delivered in person or by overnight delivery via UPS or FedEx to the District's office located at 2160 Spencer Court, La Grange, KY 40031. Bids from anyone not on GRW's Plan Holders List will be returned unopened.

A non-mandatory pre-bid conference will be held at **10:30 AM** (local time) on **September 16, 2026** at 2160 Spencer Court, La Grange, KY 40031.

No bidder may withdraw their bid for a period of ninety (90) days after closing time scheduled for the receipt of bids.

Oldham County Water District reserves the right to waive any informalities and to reject any or all bids.

AFFP
Bids-Water Main Extension

Affidavit of Publication

STATE OF KY }
COUNTY OF OLDHAM } SS

nullnullnullnull

Melanie Miller, being duly sworn, says:

That she is Accounting Clerk of the The Oldham Era, a newspaper of general circulation, printed and published in La Grange, Oldham County, KY; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

September 17, 2026

Publisher's Fee: $ 142.50

That said newspaper was regularly issued and circulated on those dates.

SIGNED:

Subscribed to and sworn to me this 17th day of September 2026.

LEONA A. HENDRIX NOTARY ID KYNP12859 MY COMMISSION EXPIRES 10/10/2028 PUBLIC STATE AT LARGE, KY.

70033798 71564775

Russ Rose
Oldham County Water District
PO Box 51
Buckner, KY 40010

Exhibit 17

GRW | engineering | architecture | geospatial
10350 Ormsby Park Place, Suite 101 | Louisville, KY 40223
502.489.8484 | www.grwinc.com

October 19, 2026

Mr. Russell Rose
Oldham County Water District
2160 Spencer Court
La Grange, KY 40031

Re: US42 Water Main Extension KY1694 to KY393
Reference Letter for Stotts Construction Company, Inc.
GRW Project No. 5180

Dear Russell Rose:

As you are aware, we opened bids for the US42 Water Main Extension KY1694 to KY393 project on October 1, 2026 and received two bids: Mofield Brothers Construction Company, LLC and Stotts Construction Company, Inc. The Mofield Bothers was an incomplete bid package and Stotts was a complete bid package.

GRW notified Mofield Brothers that the following required items weren't included with their bid package and needed to be submitted to GRW: list of proposed subcontractors, list of project references, and bidder qualifications statement with supporting data including Schedule A (current experience), Schedule B (previous experience), Schedule C (major equipment) and audited balance sheets. In addition to the missing information, Mofield used the AIA Bid Bond form instead of the EJCDC Bid Bond form included with the contract documents.

GRW exchanged several emails with Mofield trying to get all the missing information with Mofield acknowledging that they were working to provide GRW with all documents. GRW requested all missing documents be provided by COB Friday, October 9, 2026. The final requested document, Schedule B (past experience), was provided on Wednesday, October 14, 2026. Schedule B contains information on past completed projects that allows GRW to contact owners and/or engineers of these projects to perform a reference check on the Contractor' prior performance.

Based on GRW not having prior experience with Mofield Brothers and them missing the deadline to provide the Schedule B document, which would have allowed GRW to perform a reference check, GRW can't evaluate Mofield Brothers' ability to perform and complete the project. Therefore, GRW can't recommend Mofield Brothers to OCWD to perform this project.

The second bidder, Stotts Construction Company, Inc., has submitted all required information for the bid including the signed bid form, bid bond and qualifications statement. All documents appear to be in order.

Based upon GRW's and OCWD's past experience with Stotts Construction Co. Inc. including the recent OCWD KY1694 (Penny Lane) and US42 Buckeye Lane to KY1694 Water Main Extension, it appears that the Stotts Construction Co. Inc. has a capable record of performance on similar projects.

If you have any questions or comments, please contact me.

Sincerely,

Nicholas Gunselman, PE
Project Manager

Attachment: Certified Bid Tab

PROJECT BID

US42 Water Main Extension KY1694 to KY393

Oldham County Water District

GRW Project No. 5180

engineering | architecture | geospatial

Bids were opened Thursday, October 1, 2026 at 10:00 a.m. (local time)

CONTRACTOR'S NAME AND ADDRESS				Mofield Brothers Construction Company, LLC. 644 Lebanon Hwy Carthage, TN 37030		Stotts Construction Co., Inc. 2766 Greensburg Road Columbia, KY 42728	
CERTIFIED CHECK OR BID BOND				**5%**		**5%**	
Item	**Description**	**Quantity**	**Unit**	**Unit Price**	**Total**	**Unit Price**	**Total**
BASE BID							
1.	12-inch HDPE Water Main (Open Cut)	12,500	LF	$ 190.00	$ 2,375,000.00	$ 160.00	$ 2,000,000.00
2.	12-inch HDPE Water Main (HDD)	4,100	LF	$ 180.00	$ 738,000.00	$ 400.00	$ 1,640,000.00
3.	6-inch HDPE Water Main (Open Cut)	60	LF	$ 100.00	$ 6,000.00	$ 100.00	$ 6,000.00
4.	24-inch Steel Casing Pipe Bored & Jacked beneath US42 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	45	LF	$ 1,000.00	$ 45,000.00	$ 662.57	$ 29,815.65
5.	24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
6.	24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor w/ Casing Spacers and 12-inch HDPE Carrier Pipe	70	LF	$ 1,000.00	$ 70,000.00	$ 631.71	$ 44,219.70
7.	24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
8.	24-inch Steel Casing Pipe Bored & Jacked beneath KY393 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	180	LF	$ 1,000.00	$ 180,000.00	$ 614.98	$ 110,696.40
9.	Wet Connection to Existing 14” with Tapping Sleeve and Valve	1	EA	$ 12,000.00	$ 12,000.00	$ 16,231.39	$ 16,231.39
10.	Wet Connection to Existing 6” with Tapping Sleeve and Valve	2	EA	$ 4,000.00	$ 8,000.00	$ 7,903.75	$ 15,807.50
11.	Dry Connection to existing 12”	1	EA	$ 4,000.00	$ 4,000.00	$ 9,070.72	$ 9,070.72
12.	Dry Connection to existing 6”	1	EA	$ 2,000.00	$ 2,000.00	$ 6,618.58	$ 6,618.58
13.	12-inch Gate Valve and Box	9	EA	$ 4,000.00	$ 36,000.00	$ 5,827.49	$ 52,447.41
14.	6-inch Fire Hydrant Assembly	12	EA	$ 9,000.00	$ 108,000.00	$ 12,513.77	$ 150,165.24
15.	Air Release Valve and Manhole	9	EA	$ 2,500.00	$ 22,500.00	$ 6,329.78	$ 56,968.02
16.	Stream Crossing	4	EA	$ 2,000.00	$ 8,000.00	$ 12,000.00	$ 48,000.00
17.	Asphalt Drive Replacement	330	LF	$ 40.00	$ 13,200.00	$ 300.00	$ 99,000.00
18.	Concrete Drive Replacement	70	LF	$ 50.00	$ 3,500.00	$ 800.00	$ 56,000.00
19.	Gravel Drive Replacement	80	LF	$ 25.00	$ 2,000.00	$ 50.00	$ 4,000.00

PROJECT BID

US42 Water Main Extension KY1694 to KY393

Oldham County Water District

GRW Project No. 5180

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Bids were opened Thursday, October 1, 2026 at 10:00 a.m. (local time)

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CERTIFIED CHECK OR BID BOND				**5%**		**5%**	
20.	Concrete Sidewalk Replacement	10	LF	$ 200.00	$ 2,000.00	$ 200.00	$ 2,000.00
21.	Leak Detection Vault	4	EA	$ 2,000.00	$ 8,000.00	$ 2,845.35	$ 11,381.40
22.	Mobilization/Demobilization	1	LS	$ 50,000.00	$ 50,000.00	$ 5,000.00	$ 5,000.00
	Total Bid Amount				**$ 3,793,200.00**		**$ 4,428,815.01**

ADDITIVE ALTERNATE NO. 1		**Quantity**	**Unit**	**Unit Price**	**Total**	**Unit Price**	**Total**
1.	12-inch HDPE Water Main (HDD)	16,600	LF	$ 180.00	$ 2,988,000.00	$ 275.00	$ 4,565,000.00
2.	6-inch HDPE Water Main (Open Cut)	60	LF	$ 100.00	$ 6,000.00	$ 150.00	$ 9,000.00
3.	24-inch Steel Casing Pipe Bored & Jacked beneath US42 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	45	LF	$ 1,000.00	$ 45,000.00	$ 662.57	$ 29,815.65
4.	24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
5.	24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor w/ Casing Spacers and 12-inch HDPE Carrier Pipe	70	LF	$ 1,000.00	$ 70,000.00	$ 631.71	$ 44,219.70
6.	24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	50	LF	$ 1,000.00	$ 50,000.00	$ 653.93	$ 32,696.50
7.	24-inch Steel Casing Pipe Bored & Jacked beneath KY393 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	180	LF	$ 1,000.00	$ 180,000.00	$ 614.98	$ 110,696.40
8.	Wet Connection to Existing 14” with Tapping Sleeve and Valve	1	EA	$ 12,000.00	$ 12,000.00	$ 16,231.39	$ 16,231.39
9.	Wet Connection to Existing 6” with Tapping Sleeve and Valve	2	EA	$ 4,000.00	$ 8,000.00	$ 7,903.75	$ 15,807.50
10.	Dry Connection to existing 12”	1	EA	$ 4,000.00	$ 4,000.00	$ 9,070.72	$ 9,070.72
11.	Dry Connection to existing 6”	1	EA	$ 2,000.00	$ 2,000.00	$ 6,618.58	$ 6,618.58
12.	12-inch Gate Valve and Box	9	EA	$ 4,000.00	$ 36,000.00	$ 5,827.49	$ 52,447.41
13.	6-inch Fire Hydrant Assembly	12	EA	$ 9,000.00	$ 108,000.00	$ 12,513.77	$ 150,165.24
14.	Air Release Valve and Manhole	9	EA	$ 2,500.00	$ 22,500.00	$ 6,329.78	$ 56,968.02
15.	Stream Crossing	4	EA	$ 2,000.00	$ 8,000.00	$ 12,000.00	$ 48,000.00

PROJECT BID
US42 Water Main Extension KY1694 to KY393
Oldham County Water District
GRW Project No. 5180

engineering | architecture | geospatial

Bids were opened Thursday, October 1, 2026 at 10:00 a.m. (local time)

CONTRACTOR'S NAME AND ADDRESS				Mofield Brothers Construction Company, LLC. 644 Lebanon Hwy Carthage, TN 37030		Stotts Construction Co., Inc. 2766 Greensburg Road Columbia, KY 42728	
CERTIFIED CHECK OR BID BOND					**5%**		**5%**
16.	Leak Detection Vault	4	EA	$ 2,000.00	$ 8,000.00	$ 2,845.35	$ 11,381.40
17.	Mobilization/Demobilization	1	LS	$ 50,000.00	$ 50,000.00	$ 5,000.00	$ 5,000.00
	Total Alternate Amount				**$ 3,647,500.00**		**$ 5,195,815.01**

Additive Alternative No. 1 is the cost to install all 12" HDPE water main as horizontal directional drilled instead of open cut as proposed in the base bid.

Base Bid Amount		**$3,793,200.00**		**$4,428,815.01**
Alternate No. 1		**$3,647,500.00**		**$5,195,815.01**



I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE THIS IS A TRUE AND CORRECT COPY OF BIDS AS RECEIVED.

Nicholas W. Gunselman, Vice President

Exhibit 18

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Engineering
Architecture
Planning
GIS
Aviation Consultants

Lexington, KY
Louisville, KY
Ft. Mitchell, KY
Indianapolis, IN
Knoxville, TN
Nashville, TN
St. Albans, WV
Buckhannon, WV

Contract Documents and Technical Specifications

US42 Water Main Extension
KY1694 to KY393

Oldham County Water District

GRW Project No. 5180

September 2026

Bid Set



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APPENDICES

A – Approved KYTC Encroachment Permit
B – Approved Oldham County Encroachment Permit & Guidelines for Traffic Control in Work Zones

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DIVISION 00

PROCUREMENT AND CONTRACT REQUIREMENTS

ADVERTISEMENT FOR BIDS

Oldham County Water District

2160 Spencer Court

La Grange, KY 40031

Sealed Bids for the construction of the US42 Water Main Extension KY1694 to KY393 consisting of approximately 16,329 L.F. of 12-inch HDPE water main, 395 L.F. of 12-inch HDPE Water main bore and jacked in 24" steel casing pipe, gate valves, air release valves and manhole, leak detection vaults, hydrants, creek crossings and other appurtenances together with all related work as specified and shown on the Drawings will be received by Oldham County Water District at the office at 2160 Spencer Court, La Grange, KY 40031 until **10:00 AM EST (local time), October 1, 2026**, and then at said office opened and publicly read aloud.

The BIDDING DOCUMENTS, consisting of Advertisement for Bids, Instructions to Bidders, Bid, Bid Bond, Agreement, Notice of Award form, Notice to Proceed form, Construction Performance Bond, Construction Payment Bond, Sample Certificate of Insurance form, Application for Payment form, General Conditions, Supplemental General Conditions, Change Order form, Technical Specifications, Addenda, and Drawings, may be examined at the following locations:

Oldham County Water District 2160 Spencer Court La Grange, KY 40031	GRW Engineers, Inc. 10350 Ormsby Park Place, Suite 101 Louisville, KY 40223

Copies of the BIDDING DOCUMENTS **must be obtained** at the office of GRW Engineers, Inc. (the "Issuing Office"), through their Digital Plan Room at http://www.grwinc.com/plan-room upon payment of **$220.00** per set. Said cost includes one (1) full-size paper copy set and one (1) digital (.pdf) copy set. Suppliers, Manufacturers, and Subcontractors wanting only the digital copy of the Documents may obtain same upon payment of **$100.00** per digital download. Payment is ***not refundable***. Bidding Documents shall be shipped via UPS Ground service. **OVERNIGHT DELIVERY via UPS or FedEx of the Bidding Documents shall only be made using recipient's billing account number. Bids from anyone not on the Issuing Office's Plan Holders List will be returned unopened.**

A non-mandatory pre-bid conference will be held at **10:30 AM** (local time) on **September 16, 2026** at 2160 Spencer Court, La Grange, KY 40031. Questions should be directed to Nicholas Gunselman by or before **5:00 PM (local time) on September 23, 2026.**

Bids shall be accompanied by a bid bond or a certified check in an amount equal to five percent (5%) of the bid to ensure the execution of the contract for which the bid is made. In case the bid is not accepted, the check or bid bond will be returned to the bidder, but if the bid is accepted and the bidder shall refuse or neglect to enter into a contract with Oldham County Water District within ten (10) days after the time bidder has been notified of the acceptance of their bid, the said check or bid bond shall be forfeited to Oldham County Water District for the failure to do so.

No bidder may withdraw their bid for a period of ninety (90) days after closing time scheduled for the receipt of bids.

Oldham County Water District reserves the right to waive any informalities and to reject any or all bids.

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. The term "Bidder" means one who submits a Bid directly to Owner, as distinct from a subbidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible, and responsive Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes the Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents must be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid. Bids from anyone not on the Engineer's Plan Holders List will not be opened.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and the additional information listed in the Bid Form.

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.

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4.02 *Existing Site Conditions*

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. If there are reports and/or additional information concerning site conditions available, they will be included as Appendices to the Bidding Documents.

2. Geotechnical Report: If a Geotechnical Report is available, it will be included as an appendix to the Bidding Documents. The Geotechnical Report describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations.

The Conditions in the Geotechnical Report are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the said Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the Report, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are reported.

Nothing in the report is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.

B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous 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

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so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.

D. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

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

4.05 *Other Work at the Site*

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

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;

D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Bidding Documents, 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 Bidding Documents, 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

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the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;

F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;

I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and

J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

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

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than 7 days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five (5) percent of Bidder's base Bid price and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

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8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Contract or 61 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 7 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 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 Supplemental General Conditions and referred to in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 The Bidder shall submit to Owner a list of the Subcontractors or Suppliers proposed for the major portions of the Work. 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.

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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 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

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

13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

13.04 A Bid by an individual shall show the Bidder's name and official address.

13.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

13.06 All names shall be printed in ink below the signatures.

13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.

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

13.09 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. 11.8 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of any cash allowances named in the Contract Documents as provided in Paragraph 11.02 of the General Conditions.

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13.10 Each Bid must be submitted on the prescribed form and accompanied by the submittals listed in the Bid Form.

ARTICLE 14 – NOT USED

ARTICLE 15 – SUBMITTAL OF BID

15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

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

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

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

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

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

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

ARTICLE 17 – OPENING OF BIDS

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

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

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ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

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

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid. In evaluating Bids, the Owner reserves the right to consider any combination of base Bid and additive alternate(s).

19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

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

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

ARTICLE 20 – BONDS AND INSURANCE

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

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within 10 days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

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ARTICLE 22 – NOT USED

ARTICLE 23 – NOT USED

ARTICLE 24 – POWER OF ATTORNEY

Attorneys-in-fact who sign Bonds must file with each bond a certified and effective dated copy of their power of attorney.

ARTICLE 25 – LAWS AND REGULATIONS

The Bidder's attention is directed to the fact that all applicable State Laws, municipal ordinance, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

ARTICLE 26 – SAFETY STANDARDS AND ACCIDENT PREVENTION

26.01 With respect to all Work performed under this contract, the Contractor shall:

A. Comply with the safety standards provisions 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.

B. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.

C. Maintain at his/her office or other well-known 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 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.

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BID FORM

PROJECT DESCRIPTION US42 Water Main Extension KY1694 to KY393

PROJECT NUMBER GRW Project No.: 5180

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to: Oldham County Water District
2160 Spencer Court
La Grange, KY 40031

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

ARTICLE 2 – BIDDER'S ACKNOWLEDGEMENTS

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

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

Addendum No.	Addendum Date
1	09/25/2026

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.

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

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Bidding Documents, 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 Bidding Documents, 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

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D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract.

ARTICLE 5 – BASIS OF BID

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

Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
1.	12-inch HDPE Water Main (Open Cut)	LF	12,500	$	$
2.	12-inch HDPE Water Main (HDD)	LF	4,100	$	$
3.	6-inch HDPE Water Main (Open Cut)	LF	60	$	$
4.	24-inch Steel Casing Pipe Bored & Jacked beneath US42 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	45	$	$
5.	24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	50	$	$
6.	24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	70	$	$
7.	24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	50	$	$
8.	24-inch Steel Casing Pipe Bored & Jacked beneath KY393 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	180	$	$
9.	Wet Connection to Existing 14" with Tapping Sleeve and Valve	EA	1	$	$

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Item No.	Description	Unit	Estimated Quantity	Bid Unit Price	Bid Price
10.	Wet Connection to Existing 6" with Tapping Sleeve and Valve	EA	2	$	$
S11.	Dry Connection to existing 12"	EA	1	$	$
12.	Dry Connection to existing 6"	EA	1	$	$
13.	12-inch Gate Valve and Box	EA	9	$	$
14.	6-inch Fire Hydrant Assembly	EA	12	$	$
15.	Air Release Valve and Manhole	EA	9	$	$
16.	Stream Crossing	EA	4	$	$
17.	Asphalt Drive Replacement	LF	330	$	$
18.	Concrete Drive Replacement	LF	70	$	$
19.	Gravel Drive Replacement	LF	80	$	$
20.	Concrete Sidewalk Replacement	LF	10	$	$
21.	Leak Detection Vault	EA	4	$	$
22.	Mobilization/Demobilization	LS	1	$	$
Total of All Unit Price Bid Items					$

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Additive Alternate No. 1					
Item No.	**Description**	**Unit**	**Estimated Quantity**	**Bid Unit Price**	**Bid Price**
1.	12-inch HDPE Water Main (HDD)	LF	16,600	$	$
2.	6-inch HDPE Water Main (Open Cut)	LF	60	$	$
3.	24-inch Steel Casing Pipe Bored & Jacked beneath US42 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	45	$	$
4.	24-inch Steel Casing Pipe Bored & Jacked beneath Liberty Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	50	$	$
5.	24-inch Steel Casing Pipe Bored & Jacked beneath Skylight Manor w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	70	$	$
6.	24-inch Steel Casing Pipe Bored & Jacked beneath Barrickmen Lane w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	50	$	$
7.	24-inch Steel Casing Pipe Bored & Jacked beneath KY393 w/ Casing Spacers and 12-inch HDPE Carrier Pipe	LF	180	$	$
8.	Wet Connection to Existing 14” with Tapping Sleeve and Valve	EA	1	$	$
9.	Wet Connection to Existing 6” with Tapping Sleeve and Valve	EA	2	$	$
10.	Dry Connection to existing 12”	EA	1	$	$
11.	Dry Connection to existing 6”	EA	1	$	$
12.	12-inch Gate Valve and Box	EA	9	$	$
13.	6-inch Fire Hydrant Assembly	EA	12	$	$

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Additive Alternate No. 1					
Item No.	**Description**	**Unit**	**Estimated Quantity**	**Bid Unit Price**	**Bid Price**
14.	Air Release Valve and Manhole	EA	9	$	$
15.	Stream Crossing	EA	4	$	$
16.	Leak Detection Vault	EA	4	$	$
17.	Mobilization/Demobilization	LS	1	$	$
Total of All Unit Price Bid Items					$

Additive Alternative No. 1 is the cost to install all 12" HDPE water main as horizontal directional drilled instead of open cut as proposed in the base bid.

Notes: 1. Bids shall exclude sales tax. Bids shall include other applicable taxes and fees.

2. 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.

3. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.

4. Successful Bidder selection will be based on Owner’s evaluation of base Bid and additive alternate results.

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete within 270 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 300 calendar days after the date when the Contract Times commence to run.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

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ARTICLE 7 – ATTACHMENTS TO THIS BID

7.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. List of Proposed Subcontractors;

C. List of Project References;

D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;

E. Required Bidder Qualification Statement with supporting data; and

ARTICLE 8 – DEFINED TERMS

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

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ARTICLE 9 – BID SUBMITTAL

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

_____

By:
[Signature] _____

[Printed name] _____
(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

_____

_____

_____

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

_____

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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)*:
Oldham County Water District
2160 Spencer Court
La Grange, KY 40031

BID
Bid Due Date: October 1, 2026
Description *(Project Name - Include Location)*:
US42 Water Main Extension KY1694 to KY393

BOND
Bond Number:
Date:
Penal sum _____ $ _____
(Words) (Figures)

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

BIDDER	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature	Signature (Attach Power of Attorney)
_____	_____
Print Name	Print Name
_____	_____
Title	Title
Attest: _____	Attest: _____
Signature	Signature
Title	Title

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

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2 All Bids are rejected by Owner, or

3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

PROPOSED SUBCONTRACTORS

Each bidder shall enter, in the spaces provided, the names of major subcontractors he proposes to employ and the classification or type of work that they will perform. Upon award of contract, the named subcontractors shall be employed to perform the work, unless changes are specifically authorized by the Engineer.

A major subcontractor is defined as a subcontractor whose subcontract constitutes approximately three (3) percent or more of the total contract amount.

Failure to furnish all information requested in this Questionnaire may be cause for rejection of the Bid.

LIST OF SUBCONTRACTORS

SUBCONTRACTOR/ADDRESS	**WORK/DESCRIPTION/TOTAL VALUE**

QUALIFICATION STATEMENT

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

1. SUBMITTED BY:

Official Name of Firm: _____

Address: _____

_____

_____

2. SUBMITTED TO: _____

3. SUBMITTED FOR: _____

Owner: _____

Project Name: _____

_____

_____

TYPE OF WORK: _____

_____

_____

4. CONTRACTOR'S CONTACT INFORMATION

Contact Person: _____

Title: _____

Phone: _____

Email: _____

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5. AFFILIATED COMPANIES:

Name: _____

Address: _____

_____

_____

6. AGE OF COMPANY:

How many years has firm been in business as a General Contractor?

_____

7. SUBCONTRACTORS:

Does the firm plan to sublet any part of the work in this Contract? If so, please provide details.

_____

_____

_____

_____

8. BONDING INFORMATION

Bonding Company: _____

Address: _____

_____

Bonding Agent: _____

Address: _____

_____

_____

Contact Name: _____

Phone: _____

Aggregate Bonding Capacity: _____

Available Bonding Capacity as of date of this submittal: _____

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9. SUPPLIER INFORMATION (please provide two supplier references)

Company: _____

Address: _____

_____

Contact Name: _____

Phone: _____

Company: _____

Address: _____

_____

Contact Name: _____

Phone: _____

10. FINANCIAL INFORMATION

Financial Institution: _____

Address: _____

_____

Account Manager: _____

Phone: _____

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

11. CONSTRUCTION EXPERIENCE:

Current Experience:

List as **Schedule A** all uncompleted projects currently under contract.

Previous Experience:

List as **Schedule B** all projects completed within the last 5 Years

Include the following information on both schedules:

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

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

☐ YES ☐ NO

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

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

☐ YES ☐ NO

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

Are there any judgments, claims, disputes or litigation pending or outstanding involving the firm listed in Section 1?

☐ YES ☐ NO

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

12. EQUIPMENT:

MAJOR EQUIPMENT:

List as **Schedule C** all pieces of major equipment available for use on Owner's Project. Include the following information:

ITEM	PURCHASED OR RENTED?	DATE	CONDITION	ACQUIRED VALUE

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

NAME OF ORGANIZATION: _____

BY: _____

TITLE: _____

DATED: _____

NOTARY ATTEST:

SUBSCRIBED AND SWORN TO BEFORE ME

THIS DAY OF _____, _____, 20_____

NOTARY PUBLIC - STATE OF: _____

MY COMMISSION EXPIRES: _____

REQUIRED ATTACHMENTS

1. Schedule A (Current Experience).
2. Schedule B (Previous Experience).
3. Schedule C (Major Equipment).
4. Audited balance sheet for each of the last 3 years for firm named in Section 1.

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AGREEMENT
BETWEEN OWNER AND
FOR CONSTRUCTION CONTRACT

THIS AGREEMENT is by and between Oldham County Water District ("Owner") and _____ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

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

ARTICLE 2 – THE PROJECT

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

The US42 Water Main Extension KY1694 to KY393 consisting of approximately 16,321 L.F. of 12-inch HDPE water main, 395 L.F. of 12-inch HDPE Water main bore and jacked in 24" steel casing pipe, gate valves, air release valves and manhole, leak detection vaults, hydrants, creek crossings and other appurtenances together with all related work as specified and shown on the Drawings.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by GRW Engineers, Inc.

3.02 The Owner has retained GRW Engineers, 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: Dates*

A. The Work will be substantially completed on or before _____, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before _____.

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4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay Owner as stipulated in Section 18.09 of the Supplemental General Conditions 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.

B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

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 other than Unit Price Work, a lump sum of: N/A.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item) as listed in the Contractor's executed Bid Form (Section 004100) included in these Contract Documents.

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

C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) $_____.

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.

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6.02 *Progress Payments; Retainage*

A. Owner shall make payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer, on or about the 30th day of each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in Paragraph 2.05 of 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 in the General Requirements.

B. The Progress Payments shall include the cost of Stored Materials, LESS an amount of retainage equal to 10% of their total cost. Stored materials are defined as materials and equipment not incorporated in the Work but delivered, suitably stored and accompanied by documentation satisfactory to Owner as provided in Paragraph 15.01 of the General Conditions.

C. Prior to completion of 51% of the total project, calculated on the basis of Work completed, Progress Payments shall be made in the amount of Work completed, LESS an amount of retainage equal to 10% of the total entitlement to date.

D. Upon completion of 51% of the total project, calculated on the basis of Work completed, if the character and progress of the Work have been satisfactory to Owner and Engineer, the amount of retainage shall be 5% of the total contract price.

E. Within thirty (30) days after issuance of the Certificate of Substantial Completion, the Owner shall release the retainage LESS an amount equal to two hundred percent (200%) of the Owner or Owner's Agent's reasonably estimated cost of the balance of any contractor's contractually obligated, yet uncompleted, work remaining.

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 rate allowed by law at the location of the project.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

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

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

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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 Contract Documents, 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 Contract Documents, especially with respect to Technical Data in such reports and drawings.

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

F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 7, inclusive).
2. Performance bond (pages 1 to 3, inclusive).
3. Payment bond (pages 1 to 3, inclusive).
4. General Conditions (pages 1 to 66, inclusive).
5. Supplementary Conditions (pages 1 to 11, inclusive).
6. Specifications as listed in the table of contents of the Contract Documents.
7. Drawings (not attached but incorporated by reference) consisting of 17 sheets with each sheet bearing the following general title: Oldham County Water District US42 Water Main Extension KY1694 to KY393 [or] the Drawings listed on the attached sheet index.

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8. Addenda (numbers ___ to ___, inclusive).

9. Exhibits to this Agreement (enumerated as follows):

   a. Contractor's Bid (pages ___ to ___, inclusive).

10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:

    a. Notice to Proceed.

    b. Change Orders.

B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:

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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 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 Owner has plainly shown all modifications to the standard wording of such published document to the Contractor in the Supplementary Conditions.

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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:
Oldham County Water District	
By:	By:
Title:	Title:
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:	Attest:
Title:	Title:
Address for giving notices:	Address for giving notices:
2160 Spencer Court	
La Grange, KY 40031	
	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.*

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EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

NOTICE OF AWARD

Date of Issuance:

Owner: Oldham County Water District

Engineer: Nicholas Gunselman Engineer's Project No.: 5180

Contract Name: US42 Water Main Extension KY1694 to KY393

Bidder:

Bidder's Address:

TO BIDDER:

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

_____

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

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

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

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

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

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

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

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

Owner	**Contractor**
Authorized Signature	Authorized Signature
Title	Title

Copy: Engineer

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

NOTICE TO PROCEED

Owner:	Oldham County Water District		
Contractor:	[Enter Contractor Name]		
Engineer:	GRW Engineers, Inc.	Engineer's Project No.:	5180
Contract Name:	US42 Water Main Extension KY1694 to KY393		
		Effective Date of Contract:	00/00/0000

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__].

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, the date of Substantial Completion is _____ (270 calendar days) and the date of readiness for final payment is_____ (300 calendar days).

Before starting any Work at the Site, Contractor must comply with the following:

The first thirty (30) days of the contract time shall be utilized as a submittal review period. Onsite mobilization is allowed, however, no construction activities related to submittals under review will be allowed until said submittal review has been completed. Contractor shall notify Engineer concerning mobilization and intended construction activity start dates.

Oldham County Water District	
Owner	**Contractor**
Authorized Signature	Authorized Signature
Name/Title	Name/Title

Copy: Engineer

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

Name
Address
City, State Zip

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

Name
Address
City, State Zip

OWNER *(name and address)*

Oldham County Water District
2160 Spencer Court
La Grange, KY 40031

CONSTRUCTION CONTRACT

Effective Date of the Agreement:	Enter Date Here
Amount:	Enter Amount Here
Description *(name and location)*:	US42 Water Main Extension KY1694 to KY393, *Goshen, KY*

BOND

Bond Number:	Enter Bond Number
Date *(not earlier than the Effective Date of the Agreement of the construction contract)*	Enter Date
Amount:	Enter Amount
Modifications to this Bid 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

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

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

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

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

_____
Print Name

_____
Title

Attest: _____
Signature

_____
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.

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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

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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:

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EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PAYMENT BOND

CONTRACTOR *(name and address)*:

Name
Address
City, State Zip

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

Name
Address
City, State Zip

OWNER *(name and address)*

Oldham County Water District
2160 Spencer Court
La Grange, KY 40031

CONSTRUCTION CONTRACT

Effective Date of the Agreement:	Enter Date Here
Amount:	Enter Amount Here
Description *(name and location)*:	US42 Water Main Extension KY1694 to KY393, *Goshen, KY*

BOND

Bond Number:	Enter Bond Number
Date *(not earlier than the Effective Date of the Agreement of the construction contract)*	Enter Date
Amount:	Enter Amount
Modifications to this Bid 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

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

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

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

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

_____
Print Name

_____
Title

Attest: _____
Signature

_____
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.

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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

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the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

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

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. **Definitions**

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

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

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

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

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

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

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

18. Modifications to this Bond are as follows:

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CERTIFICATE OF INSURANCE

DATE (MM/DD/YY)

SAMPLE

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.
	COMPANY A
INSURED	COMPANY B
	COMPANY C
	COMPANY D

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION (MM/DD/YY)	LIMITS	
A	**GENERAL LIABILITY**				GENERAL AGGREGATE	$ 1,000,000
	X COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG	$ 1,000,000
	[ ] CLAIMS MADE [X] OCCUR				PERSONAL & ADV INJURY	$ 1,000,000
	X CONTRACTOR'S PROTECTION				EACH OCCURRENCE	$ 1,000,000
					FIRE DAMAGE (Any One)	$ 100,000
					MED EXP (Any One Person)	$ 10,000
A	**AUTOMOBILE LIABILITY**				COMBINED SINGLE LIMIT	$ 1,000,000
	X ANY AUTO				BODILY INJURY (Per Person)	$ 1,000,000
	X ALLOWED AUTOS					
	X SCHEDULED AUTOS				BODILY INJURY (Per Accident)	$ 1,000,000
	X HIRED AUTOS					
	X NON-OWNED AUTOS				PROPERTY DAMAGE	$ 1,000,000
A	**GARAGE LIABILITY**				AUTO ONLY-EA ACCIDENT	$
	[ ] ANY AUTO				OTHER THAN AUTO ONLY	$
					EACH ACCIDENT	$
					AGGREGATE	$
A	**EXCESS LIABILITY**				EACH OCCURRENCE	$ 3,000,000
	X UMBRELLA FORM				AGGREGATE	$ 3,000,000
	[ ] OTHER THAN UMBRELLA FORM					$
A	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY**				X STATUTORY LIMITS	
	THE PROPRIETOR/				EACH ACCIDENT	$
	PARTNERS/EXECUITVE [ ] INC				DISEASE-POLICY LIMIT	$
	OFFICERS ARE: [ ] EXC				DISEASE-EACH EMPLOYEE	$
A	**OTHER: BUILDER'S RISK AND/OR INSTALLATION FLOATER**					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS:

CERTIFICATE HOLDER	**CANCELLATION**
Additional Insured – Owner & Engineer	SHOULD ANY OF THE ABOVE-DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

SUPPLEMENTAL ATTACHMENT FOR CERTIFICATE OF INSURANCE

PROJECT _____

INSURED _____

		Yes	No	N/A
A.	**General Liability**			
1.	Does the General Aggregate apply to this Project only?	☐	☐	☐
2.	Does this policy include coverage for:			
a.	Premises—Operations?	☐	☐	☐
b.	Explosion, Collapse and Underground Hazards?	☐	☐	☐
c.	Personal Injury Coverage?	☐	☐	☐
d.	Products Coverage?	☐	☐	☐
e.	Completed Operations?	☐	☐	☐
f.	Contractual Coverage for the Insured's Obligations in Paragraph 6.03.C.2 of the General Conditions.	☐	☐	☐
B.	**Worker's Compensation**			
1.	If the Insured is exempt from Worker's Compensation statutes, does the Insured carry the equivalent Voluntary Compensation coverage?	☐	☐	☐
C.	**Final Payment Information**			
1.	Is the certificate being furnished in connection with the Contractor's request for final payment in accordance with the requirements of Paragraph 15.06.A.1 of the General Conditions?	☐	☐	☐
2.	If so, and if the policy period extends beyond Project Completion Date, is Completed Operations coverage for this Project continued for the balance of this policy period?	☐	☐	☐
D.	**Termination Provisions**			
1.	Has each policy shown on the certificate and this Supplement been endorsed to provide the holder with 30 days notice of cancellation and/or expiration? List below any policies which do not contain this notice.	☐	☐	☐

E. Other Provisions

_____

Authorized Representative

_____

Date of Issue

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APPLICATION FOR PAYMENT

Project No:
Project:

Application for Payment No.: _____
Period Beginning Date: _____
Period Ending Date: _____

Owner:

General Contractor:

CONTRACTOR AFFIDAVIT

The undersigned affiant states that he/she is the Authorized Signatory of the CONTRACTOR for the construction of the PROJECT. By his personal knowledge, he further states that the WORK covered by this APPLICATION FOR PAYMENT has been completed in accordance with the CONTRACT DOCUMENTS and executed amendments thereto; that for all previous APPLICATIONS FOR PAYMENT, except as noted hereinafter as exceptions, the CONTRACTOR has paid in full or has otherwise satisfied all obligations (1) for equipment and materials (whether incorporated into the WORK or acceptably stored on-site), (2) for all work, labor, and services performed, and (3) for all known indebtedness and claims against the CONTRACTOR for damages arising in any manner in connection with the performance of this CONTRACT for which the OWNER, the OWNER's property, or the CONTRACT funds might in any way be held responsible, including the applicable State Statute, and that the current payment on this APPLICATION FOR PAYMENT is now due and payable. This affidavit is directed to the OWNER by and through its ENGINEER.

EXCEPTIONS: _____ (If none, write "NONE". Attach additional sheets, if necessary.)
If required by the OWNER, the CONTRACTOR shall furnish a bond satisfactory to the OWNER for each exception)

_____ _____
CONTRACTOR **DATE**

State of: _____ County of: _____

SUBSCRIBED and sworn to before me by _____ on this _____ day of _____, 20____.

_____ My Commission expires: _____
NOTARY PUBLIC

STATEMENT BY ENGINEER

BASED upon on-site observation, and to the best of my knowledge, understanding, and belief, the WORK has progressed to the point indicated herein; and the quality of the WORK complies with the requirements of the CONTRACT DOCUMENTS.

_____ _____
ENGINEER **DATE**

APPLICATION FOR PAYMENT SUMMARY

TOTAL WORK COMPLETED TO DATE	$0.00	ORIGINAL CONTRACT PRICE	$0.00
BALANCE OF STORED MATERIALS	0.00	CHANGE ORDER NO 1	
TOTAL ENTITLEMENT TO DATE	$0.00	CHANGE ORDER NO 2	
AMOUNT RETAINED PER CONTRACT (10%)	0.00	CHANGE ORDER NO 3	
CLAIMS AGAINST THE CONTRACT FUNDS	0.00	CHANGE ORDER NO 4	
TOTAL DUE CONTRACTOR TO DATE	$0.00	CHANGE ORDER NO 5	
AMOUNT OF PREVIOUS PAYMENTS		TOTAL CONTRACT PRICE TO DATE	$0.00
AMOUNT DUE CONTRACTOR THIS PAYMENT	$0.00	Percent Complete (Excluding Stored Materials)	

AUTHORIZATION BY OWNER

_____ _____
OWNER **DATE**

Attachments: Cost Breakdown
Stored Material Breakdown (if applicable)

5180

APPLICATION FOR PAYMENT

006276-2

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COST BREAKDOWN

Project No.:
Project:

Application for Payment No.:
Period Beginning Date:
Period Ending Date:

Item No.	Description of Work	Breakdown				Completed Previously		Completed This Month		Completed To Date		Percent Complete
		Quantity	Unit	Unit Price	Total	Quantity	Amount	Quantity	Amount	Quantity	Amount	
BASE BID												
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
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					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
CHANGE ORDERS												
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
					0.00		0.00		0.00	0.00	0.00	
				Total Base Bid	**$0.00**		**$0.00**		**$0.00**		**$0.00**	

5180

APPLICATION FOR PAYMENT

006276-3

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MATERIALS STORED BREAKDOWN

Project No.:
Project:

Application for Payment No.:
Period Beginning Date:
Period Ending Date:

			A	B	C	D	
Bid Item No.	Invoice #	Material Description	Materials stored last period	Materials purchased this period	Total (A+B)	Materials used this period	Materials currently stored (C-D)
					$0.00		$0.00
					0.00		0.00
					0.00		0.00
					0.00	

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Change Order

Date: **Change Order No.:**
Project: **Project No.:**

Owner: **Contractor:**

The Contractor is hereby directed to perform the **Work** described in the **Contract For Construction** as amended by the **Change Order**:

Attachments: **TOTAL:** **$0.00**

Original Contract Amount	$0.00
Net Change by Previous Change Orders	0.00
Contractor Amount Prior to This Change Order	0.00
Amount of This Change Order	0.00
New Contract Amount	$0.00

The Substantial Completion Date:

This **Change Order** is intended to, and the **Contractor** agrees that it does, fairly and adequately compensate the **Contractor** for extra direct costs (labor, materials, etc.) as well as all expenses and damages which may result from any delays, suspensions, stretch-outs, scheduling, inefficiencies, and accelerations in the Work associated with this Change Order, and the Contractor releases the Owner and the Engineer from any claims for such expenses and damages, including but not limited to changes in sequence of work; delays; disruption; rescheduling; extended overhead; acceleration; wage; material; or other escalations; and all other impact costs.

This **Change Order** is intended to, and the **Contractor** agrees that it does, provide the **Contractor** a reasonable and adequate period of time in which to complete the Work in accordance with the Contract For Construction, as amended by this Change Order, and the Contractor releases the Owner and the Engineer from any claims for additional time to perform the Work.

All **Change Orders** to this **Contract For Construction,** if required, must be negotiated pursuant to 40 CFR 31.36(f)(1) and /or with DOW/KIA Procurement Guidance for Construction and Equipment Contracts.

OWNER **DATE** **CONTRACTOR** **DATE**

cc:

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

SUBSTANTIAL COMPLETION AGREEMENT

Owner:	Oldham County Water District	Owner's Contract No.:	
Contractor:		Contractor's Project No.:	
Engineer:	GRW Engineers, Inc.	Engineer's Project No.:	5180
Project:	US42 Water Main Extension KY1694 to KY393	Contract Name:	

This Substantial Completion Agreement applies to:

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

Date of Substantial Completion

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

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

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: _____

In cases of equipment start-up and commissioning, the date of Substantial Completion shall commence 30 days after the date stated above and shall be contingent upon satisfactory operation of the completed work during the 30-day initial operation period.

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

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

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

EJCDC®
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

Issued and Published Jointly by

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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

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

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Engineer*—The individual or entity named as such in the Agreement.

21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

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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

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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

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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.

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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:

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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.

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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.

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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

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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

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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

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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;

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(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

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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

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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;

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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.

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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

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by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.

H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

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

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this

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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

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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.

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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.

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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 30 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.

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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

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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

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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

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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.

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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;

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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:

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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.

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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.

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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.

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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.

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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

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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.

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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.

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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.

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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

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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

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may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. an itemization of the specific matters to be covered by such authority and responsibility; and

3. the extent of such authority and responsibilities.

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

8.03 *Legal Relationships*

A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal

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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.

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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).

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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.

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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.

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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

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involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

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

11.04 *Change of Contract Price*

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

B. An adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;

b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and

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11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

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

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

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,

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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.

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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,

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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.

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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.

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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, expediters, 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.

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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.

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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.

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C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

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

14.05 *Uncovering Work*

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

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

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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.

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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

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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.

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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

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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

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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

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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

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(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

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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,

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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

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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

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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.

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GRW SUPPLEMENTARY GENERAL CONDITIONS TO EJCDC GENERAL CONDITIONS

GRW SUPPLEMENTARY GENERAL CONDITIONS TO EJCDC GENERAL CONDITIONS

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

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

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

SGC-2.02

Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor five copies of Contract Documents and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

SGC-4.01

Delete the following sentence from Paragraph 4.01A:

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 Agreement, whichever date is earlier.

SGC-5.03

Add the following new paragraph after Paragraph 5.03B:

If any geotechnical exploration for the project was performed and reported, said report will be included as an Appendix. The geotechnical report shall be used as a reference and all recommendations included therein shall be followed in full.

SGC-5.05

Add the following new paragraphs immediately after Paragraph 5.05 A.1:

a. Special precautions shall be taken by the Contractor to avoid damage to existing overhead and underground utilities owned and operated by the Owner or by public or private utility companies.

b. The available information concerning the location of existing underground utilities is shown on the Drawings. While it is believed that the locations shown are reasonably correct, neither the Engineer nor the Owner can guarantee the accuracy or adequacy of this information.

c. Before proceeding with the work, the Contractor shall confer with all public or private companies, agencies or departments that own and operate utilities in the vicinity of the construction work. The purpose of the conference, or conferences, shall be to notify said companies, agencies or departments of the proposed construction schedule, verify the location of, and possible interference with, the existing utilities that are shown on the Drawings, arrange for necessary suspension of service, and make arrangements to locate and avoid interference with all utilities (including house connections) that are not shown on the Drawings. The Engineer and Owner have no objection to the Contractor arranging for the said utility companies, agencies, or departments to locate and uncover their own utilities; however, the Contractor shall bear the entire responsibility and cost of locating and avoiding, or repairing damage to said existing utilities.

d. The Contractor shall locate all unknown metallic hazards, namely buried pipe, metals, etc., by using a pipe locator. The pipe locator shall immediately precede the trench ditching and all hazards located shall be marked in such manner as to notify the machine operator of such hazard.

e. Where existing utilities or appurtenant structures either underground or above ground, are encountered, they shall not be displaced or molested unless necessary, and in such case shall be replaced in as good or better condition than found as quickly as possible. Relocation and/or replacement of all utilities and appurtenant structures to accommodate the construction work shall be at the Contractor's expense, unless such relocation and/or replacement is by statute agreement the responsibility of the owner of the utility.

SGC-5.06

Add the following new paragraph immediately after Paragraph 5.06.A.2:

3. If any Hazardous Conditions were reported, said report will be included as an Appendix.

SGC-6.01

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

The Performance Bond shall remain in full force and effect throughout the Guaranty period referred to in SGC 6.03. All warranties and guarantees remaining in effect at and beyond the Guaranty expiration date shall be relinquished and transferred to the Owner. Copies of such warranty/guaranty shall be submitted to the Engineer prior to date of the start of the Guaranty period.

SGC-6.02 **Add the following paragraph immediately after Paragraph 6.02.B:**

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency,

and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

Add the following paragraphs after Paragraph 6.03.J:

K. The insurance required by this Paragraph shall include specific coverage and be written for not less than the limits of liability and coverages tabulated in the prototype Certificate of Insurance included as Section 00 62 16, or as required by law, whichever is greater.

Add the following paragraphs after Paragraph 6.05.F:

G. The Contractor shall provide INSTALLATION FLOATER INSURANCE when Builder's Risk Insurance is inappropriate, or when Builder's Risk Insurance will not respond, to cover damage or destruction to renovations, repairs, materials, or equipment being installed or otherwise being handled or stored by the Contractor, including off-site storage, transit and installation. The amount of coverage shall provide full replacement value (FRV) of the property, repairs, additions, materials, or equipment being installed, otherwise being handled or stored on or off premises. All risks coverage shall be provided. Coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable. The Contractor will be solely responsible for any deductible carried under this coverage and claims on materials, supplies, machinery, fixture, and equipment that will be incorporated into the Work while in transit or in storage. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

SGC-6.07 Delete Paragraph 6.07 in its entirety.

SGC-7.02

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

C. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services, Owner's representative and construction observation services occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any work day. For purposes of administering the foregoing requirement, additional overtime costs are defined as $75 per hour.

D. The Contractor shall employ workmen skilled in their various duties and shall remove from the project, at the request of the Engineer, any person employed in, about, or upon the work, who misconducts himself or is incompetent or negligent in the performance of the duties assigned to him.

No person under the age of eighteen (18) years and no convict labor shall be employed to perform any work under this Contract. No person whose age or physical condition is such as to make his employment dangerous to his health or safety or to the health or safety of others shall be employed to perform any work under this Contract, provided that this shall not operate against the employment of physically handicapped persons, otherwise employable, where such persons may be safely assigned to work which they can ably perform. There shall be no discrimination because of race, creed, color or political affiliation in the employment of persons for work under this Contract.

With respect to additional skilled, semi-skilled and unskilled workers employed to perform work on the project, preference in employment shall be given first to persons who reside in the city in which the work is to be performed, and second to persons residing in the county in which the work is to be performed.

SGC-7.03

Add the following new paragraph immediately after Paragraph 7.03.C:

D. The Contractor agrees that he will obtain from the manufacturers of equipment and materials furnished under this Contract guarantees against defective materials and workmanship, and if those guarantees furnished by the manufacturer do not extend for the term of one (1) year from and after the date upon which the final estimate of the Engineer is formally approved by the Owner or other established date as set forth herein (such as the substantial completion date), he shall make the necessary arrangements and assume all cost for extending this guarantee for the required period.

SGC-7.06

Delete Paragraph 7.06.F in its entirety.

SGC-7.08

Delete Paragraph 7.08.A in its entirety and insert the following in its place.

Owner shall obtain and pay for all construction permits, including building permits. Contractor is responsible for all utility permits and fees for usage during the construction period. Contractor is responsible for any electrical, plumbing and/or building inspections and fees which may be required.

SGC-7.16

Add the following new paragraphs immediately after Paragraph 7.16 D.8:

9. CONTRACTOR shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the ENGINEER'S approval thereof.

10. ENGINEER'S review of submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment of systems, all of which remain the responsibility of the Contractor as required by the Contract Documents.

11. ENGINEER's review and approval of Shop Drawings or Samples shall not relieve CON¬TRAC¬TOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRAC¬TOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 7.16.A.3 and ENGI¬NEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval, or has issued a Change Order that authorizes the deviation.

SGC-10.03.A.

The Duties, Responsibilities, and Limitations of Authority of the Resident Project Representative will be as stated in the document attached to these Supplementary General Conditions.

SGC-11.08

Add the following new paragraph immediately after Paragraph 11.08:

11.09 A sample Change Order form is included as Section 00 63 63.

SGC-14.03

Add the following new paragraph immediately after Paragraph 14.03.D:

1. When the repairs or replacements involve one or more items of installed equipment, Contractor shall provide the services of qualified factory-trained servicemen in the employ of the equipment manufacturers to perform or supervise the repairs or replacements.

SGC-14.07

Add the following new paragraph immediately after Paragraph 14.07.D:

E. When the Engineer or the Owner deems it necessary, and so orders, such replacements or repairs under this section shall be undertaken by the Contractor within twenty-four (24) hours after service of notice. If the Contractor unnecessarily delays or fails to make the ordered replacements or repairs within the time specified, or if any replacements or repairs within the time specified, or if any replacements or repairs are of such nature as not to admit of the delay incident to the service of a notice, then the Owner shall have the right to make such replacements or repairs and the expense thereof shall be paid by the Contractor or deducted from any moneys due to Contractor.

SGC-15.01

Add the following to Paragraph 15.01:

The Application for Payment form shall be exactly as shown in Section 00 62 76.

Add the following paragraph after Paragraph 15.01.D.1:

2. If the project is funded by a Funding Agency, the payment will become due 25 days after presentation of the Application for Payment to the Owner.

SGC-15.03 Substantial Completion

Replace the first sentence in Paragraph 15.03.A with the following:

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 Substantial Completion Agreement.

Replace Paragraph 15.03.C with the following:

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a Substantial Completion Agreement which shall fix the date of Substantial Completion. Engineer shall attach to the agreement a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the agreement during which to make written objection to Engineer as to any provisions of the agreement or attached punch list. If, after considering the objections to the provisions of the certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the agreement 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 agreement, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a Substantial Completion Agreement (with a revised punch list of items to be completed or corrected) reflecting such changes from the agreement as Engineer believes justified after consideration of any objections from Owner.

Replace the first sentence in Paragraph 15.03.D with the following:

D. At the time of receipt of the Substantial Completion Agreement, 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.

Replace Paragraph 15.04.A.2 with the following:

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 Substantial Completion Agreement for that part of the Work.

Replace Paragraph 15.04.A.3 with the following:

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 Substantial Completion Agreement of that part of the Work and the division of responsibility in respect thereof and access thereto.

SGC-18.09

Add the following new paragraph immediately after Paragraph 18.08:

18.09 *Liquidated Damages*

A. Should the Contractor fail or refuse to complete the Work within the time specified in the Contract, or extension of time granted by the Owner, the Contractor shall pay liquidated damages in an amount set out in the Contract. The amount of liquidated damages shall in no event be considered a penalty, but rather an amount agreed upon by the Owner and Contractor for damages, losses, additional professional engineering and resident project representation services and other costs that will be sustained by the Owner if the Contractor fails to complete the Work within the specified time. Liquidated damages will be applied on a rate per day for each and every calendar day, including Sundays and holidays, beyond the contract expiration date stipulated in the Contract Documents, considering granted time extensions. **Liquidated damages per day shall be $1,000**

SGC 18.10

Add the following new paragraph immediately after Paragraph 18.09:

18.10 *Disruption of water or wastewater operations*

A. The Contractor shall take all necessary precautions to minimize the disruption in water and/or wastewater system operations. When a disruption in the operations is required, the Contractor shall coordinate in advance (5 days minimum) the interruption with the Engineer and the Owner; the interruptions shall be held to a minimum by wise and prudent coordination of Contractor work efforts. The Contractor shall be held responsible for all damages brought about by disruptions of the operations if such disruptions are a direct cause of Contractor negligence and or a failure of the Contractor to coordinate his work effort with the Engineer and Owner.

ATTACHMENT

DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE

1.01 PROJECT REPRESENTATIVE

Engineer shall furnish a Resident Project Representative (RPR), assistants and other field staff to assist Engineer in observing performance of the Work of the Contractor.

Through more extensive on-site observations of the Work in progress and field checks of materials and equipment by the RPR and assistants, Engineer shall endeavor to provide further protection for Owner against defects and deficiencies in the Work; but, the furnishing of such services will not make Engineer responsible for or give Engineer control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs, or responsibility for Contractor's failure to perform the work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of Engineer in Engineer's agreement with the Owner and in the construction Contract Documents, and are further limited and described as follows:

1.02 GENERAL

RPR is Engineer's agent at the site will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with Engineer and Contractor keeping Owner advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner with the knowledge of and under the direction of Engineer.

1.03 DUTIES AND RESPONSIBILITIES OF RPR

A. Conference and Meetings: Attend meetings with Contractor such as preconstruction conferences, progress meetings, job conferences and other project related meetings, and see that copies of minutes are appropriately distributed.

B. Liaison:

1. Serve as Engineer's liaison with Contractor working principally through Contractor's superintendent and assist in understanding the intent of the

Contract Documents; and assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.

2. Assist in obtaining from Owner additional details or information when required for proper execution of the Work.

C. Shop Drawings and Samples:

1. Maintain file of Shop Drawings.

2. Advise Engineer and Contractor of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by Engineer.

D. Review of Work, Rejection of Defective Work, Inspections and Tests:

1. Conduct on-site observations of the Work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.

2. Report to Engineer whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to 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 Work that RPR believes should be corrected or rejected or should be uncovered for observation or requires special testing inspection or approval.

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

4. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to Engineer.

E. 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.

F. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to Engineer. Transmit to Contractor decisions as issued by Engineer.

G. Records:

1. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract

Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.

2. Keep daily reports and a log book, recording Contractor hours on the job site, weather conditions, data relative to questions of Work Directive Changes, Change Orders, or change conditions, list of job site visitors, 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.

3. Record names, addresses and telephone numbers of all Contractor's, subcontractors and major suppliers of materials and equipment.

H. Reports:

1. Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule.

2. Consult with Engineer in advance of scheduled major tests, inspections or start of important phases of the Work.

3. Report immediately to Engineer and Owner upon the occurrence of any accident.

4. Maintain file of Daily Reports of the job progress and conditions.

I. Payment Request: 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.

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

K. Completion:

1. Before Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction. Participate in Engineer's determination of Substantial Completion.

2. Conduct final inspection in the company of Engineer, Owner and Contractor and prepare a final list of items to be completed or corrected.

3. Observe that all items on final list have been completed or corrected and make recommendations to Engineer concerning acceptance.

1.04 LIMITATIONS OF AUTHORITY

Resident Project Representative:

A. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment unless authorized by Engineer.

B. Shall not exceed limitations of Engineer's authority as set forth in the Contract Documents.

C. Shall not undertake any of the responsibilities of Contractor, subcontractors, suppliers or Contractor's superintendent.

D. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such directions are specifically required by the Contract Documents.

E. Shall not advise on, or issue directions regarding, or assume control over safety precautions and programs in connection with the Work.

F. Shall not authorize Owner to occupy the Project in whole or in part.

G. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Engineer.

DIVISION 01

GENERAL REQUIREMENTS

SECTION 011100 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 SCOPE OF WORK PERFORMED UNDER THIS CONTRACT

This project consists of approximately 16,329 L.F. of 12-inch HDPE water main, 395 L.F. of 12-inch HDPE Water main bore and jacked in 24" steel casing pipe, gate valves, air release valves and manhole, leak detection vaults, hydrants, creek crossings and other appurtenances together with all related work as specified and shown on the Drawings.

1.2 ENUMERATION OF DRAWINGS & SPECIFICATIONS

Following are the Drawings and Specifications which form the Contract Documents as set forth in Section 1.1 of the General Conditions:

Drawings	Sheet Number
See Index of Drawings on Cover Page	

Specifications

See Table of Contents

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011100

SECTION 011400 – GENERAL PROVISIONS

PART 1 - GENERAL

1.1 DESIGNATION OF PARTIES

A. All references in the Specifications, Contract Documents and Drawings to "Owner" shall mean Oldham County Water District; all references to "Engineer" shall mean GRW Engineers, Inc., 801 Corporate Drive, Lexington, Kentucky 40503.

1.2 EXPERIENCE CLAUSE

A. Wherever experience is required of equipment manufacturers in manufacturing or in records of satisfactory operation for a specified period of time, in lieu of the experience, the manufacturer may furnish a 100 percent performance guarantee bond or a cash deposit. The bond or cash deposit provided by the manufacturer shall guarantee replacement of the equipment process in the event of failure or unsatisfactory service. The period of time for which the bond or cash deposit is required shall be the same as the experience period of time specified.

1.3 ACCESS TO INSPECTION OF WORK

A. Representatives of the State Department of Health, the State Department for Natural Resources and Environmental Protection, local public health agencies, Owner, and Engineer shall at all times have full access to the project site for inspection of the work accomplished under this Contract and for inspection of all materials intended for use under the Contract. The Contractor shall provide proper facilities for such access and inspection.

1.4 EQUIPMENT LUBRICATION

A. The Contractor shall make suitable provision for the proper lubrication of all equipment furnished under this Contract. Accessible grease fittings shall be provided where required. A supply of oil, grease and other lubricants of proper quality, as recommended by the manufacturer of the equipment, shall be furnished. Lubricants shall be furnished in their original, unopened containers, in sufficient quantity for initial fillings and for at least one year of operation.

1.5 PRE-CONSTRUCTION CONFERENCE

A. The Contractor, Engineer and Owner, or their duly appointed representative, shall meet in a preconstruction conference prior to the initiation of construction to organize, schedule and determine responsibilities for the work as it pertains to each party of the Contract.

1.6 CONSTRUCTION SCHEDULE CHART

A. Prior to start of any construction, the Contractor shall furnish a construction schedule or progress chart. The schedule or chart shall be subject to the approval of the Engineer and be of sufficient detail to show the chronological relationship of all activities of the project, the order in which the Contractor proposes to carry on the work, estimated starting and completion dates of major features, procurement of materials, and scheduling of equipment. The schedule shall be in a form suitable for appropriately indicating the percentage of work scheduled for completion at any time. The schedule shall be kept current and shall reflect completion of all work under the Contract within the specified time and in accordance with these Specifications.

1.7 CONSTRUCTION PROGRESS MEETINGS

A. Monthly construction progress meetings shall be held at the project site or at a designated location established by the Owner. The Contractor, appropriate Subcontractors, the Engineer and the Owner shall meet to review construction progress, equipment or material submittals, construction schedules, etc.

1.8 PRECONSTRUCTION PHOTOGRAPHS

A. Prior to construction and mobilization of equipment, Contractor shall take record photographs of all areas of the project site.

B. In lieu of photographs, a videographic record may be made of the project site.

1.9 SPARE PARTS

A. Spare parts for routine maintenance and minor repairs shall be provided for specified equipment items in the respective technical sections of these Specifications. Required spare parts to be provided are listed in the particular equipment Specifications.

B. Parts shall be coated to protect them from a moist atmosphere. All spare parts shall be plainly tagged, marked for identification and reordering, and shall be delivered properly boxed. Required identification includes (but is not limited to):

1. Name of the manufacturer or supplier of equipment.
2. Name of the unit for which the part is intended.
3. Name of the spare part.
4. Name of the supplier of the spare part.
5. Manufacturer's catalogue part number.
6. Precautionary information.
7. Any other identifying information deemed appropriate.

C. All spare parts for a single equipment item shall be crated together in containers suitable for handling with hoisting equipment and designed for prolonged storage and stenciled to identify contents.

D. Where oil or grease lubricated equipment is concerned, sufficient oil or grease of types recommended by the equipment manufacturer shall be supplied for one year's operation.

E. The Contractor shall furnish and deliver the spare parts to the Owner at such time as the Owner may direct but prior to Contract expiration date. Furnish to the Engineer for record purposes a list of spare parts delivered to the Owner.

1.10 CLEANING

A. The Contractor shall at all times keep the construction site and the surrounding area presentable to the public, and clean of rubbish caused by the Contractor's operation. At completion of the work, the Contractor shall remove all the rubbish, all tools, equipment, temporary work and surplus materials, from and about the premises, and shall leave the site clean and ready for use.

B. After completion of all work and before final acceptance of the work, the Contractor shall thoroughly clean all equipment and materials and shall remove all foreign matter such as grease, dirt, plaster, labels, stickers, etc., from the exterior of the piping, equipment and all associated fabrication.

C. All waste and excess materials shall be disposed of off the project site and at no additional expense to the Owner. In no case shall waste materials (any removed concrete, piping, equipment, etc.) be buried on the site. Burning is not permitted.

D. Upon completion of the project, the Contractor is responsible for leaving the project site in as good as or better condition than the original. This includes site grading, landscaping, replacement of sidewalks, driveways, curbs, mailboxes, clotheslines, fences, etc. and removal of all construction debris.

1.11 TAXES

A. Proposals shall be made to include any applicable taxes on payrolls, materials, equipment, vehicles, utilities, etc., shall include compensation for such taxes on all work under this Contract.

B. Proposals shall exclude sales taxes.

1.12 LINES AND GRADES

A. The Engineer will set a benchmark or marks near the site and furnish the Contractor with the elevation of same. The Engineer will assist the Contractor in laying out the axes of the structures. The Contractor shall be responsible for all other lines and grades required for the construction of structures. The Contractor shall set line and grade stakes for all gravity sewers, offset from the centerline of the trench or the axes of the pipelines.

B. The Contractor shall use a laser beam instrument to set the grades on gravity sewer lines. In using such an instrument, the Contractor shall be responsible for maintaining grades and elevations as called for on the drawing profiles, and any variances found shall be corrected by the Contractor at their expense. The Contractor shall verify invert elevation at each manhole for

a check. A blower shall be used with the laser beam instrument during warm or hot weather to assure accurate line and grade for the laser beam.

C. When water lines, process piping and other such buried pressure pipelines are involved, the Engineer will assist the Contractor in the location of these lines; however, any detailed layout requiring surveying, or excavation including that required for establishing the grade of the pipeline, shall be accomplished by the Contractor.

D. The Contractor shall furnish all materials, stakes and grade boards that are required for layout by the Contractor's forces. In addition, the Contractor shall furnish any necessary survey personnel to mark the location of the various facilities on the ground, establishing bench levels and determining as-built conditions after work is completed. The Contractor's personnel engaged in the layout work described herein and the aides furnished to the Engineer shall be fully capable of performing the duties set out herein and shall be fully qualified as required. Contractor shall be responsible for verifying all profiles and elevations prior to construction.

1.13 BLASTING

A. All blasting operations shall be conducted in strict accordance with the Rules and Regulations of the State Department of Mine and Minerals, Division of Explosives and Blasting, which shall be deemed to be included in these Specifications the same as though herein written in full. The Contractor shall also comply with applicable municipal ordinances, Federal Safety Regulations and Section 9 of the Manual of Accident Prevention in Construction, published by the Associated General Contractor's of America, Inc. All explosives shall be stored in conformity with said ordinances, laws and safety regulations. No blasting shall be done within five feet of any water mains, or ten feet of any gas mains except with light charges of explosives. Any damage done by blasting is the responsibility of the Contractor and shall be promptly and satisfactorily repaired by them. All blast events shall be designed in accordance with state laws. These guidelines are established to limit peak particle velocities occurring as a result of blasting to protect structures from damage due to ground motions from blast events. The peak particle velocity is the maximum velocity of particle excitation measured along any of the three orthogonal axes (longitudinal, vertical or transverse). In addition, the following guidelines shall be applicable to new concrete.

Age of Concrete, Days*	Maximum Permissible Particle Velocity, IPS**
0 to 1	0.25
2	0.50
3 or more	1.00

* Concrete is defined as properly designed and placed, well-consolidated Portland Cement concrete achieving a normal increase in strength with age.

** Measured at location of concrete, by probe fixed in or on soil surface.

As an option, a scaled distance (distance from blast to concrete/-square root of charge weight) of 130 or more can be used conservatively to design blast events.

B. Unless otherwise required by ordinance or law, each excavation crew shall be provided with two metal boxes equipped with suitable locks. One of these boxes shall be for storing explosives

and one for caps. The boxes shall always be locked except when in actual use. They shall be painted a bright color and stenciled with appropriate warning signs. At night, explosives and caps shall be stored in separate magazines.

C. If any possibility exists of rock or any other debris leaving the site during a blast event, the shot shall be covered with rope, heavy timber or rubber mats, to prevent the aforementioned.

D. The Contractor shall keep a blasting log and, for each blast, shall record the date, time of blast, number of holes, type of explosive, number of delays, amount of charge per delay; stemming type, and number of caps; and all other items as required by State laws and regulations.

E. All blasting shall be supervised and performed by qualified personnel and shall be monitored to ensure compliance with the particle velocity requirements. The Contractor shall submit a monitoring plan to the Engineer prior to beginning blasting activities.

F. A pre-blast survey shall be performed by the Contractor. The pre-blast survey shall be accurate and up to date at the time of the blast event. The survey shall be a compilation of the condition, type, and general appearance of all nearby structures. It shall also include a listing of any vibration-sensitive equipment or conditions which exist at adjacent facilities. The owners and occupants of these facilities shall be notified of the intent to blast and the blasting schedule. The survey shall be conducted by a competent engineering firm or other qualified firm and sufficiently documented by photographs, video, measurements, and diagrams. The survey shall include all structures within 200 feet of the project or any such structure the Contractor feels may be reasonably affected by ground and/or air vibrations from blasting. Pre-blast survey results shall be submitted to the Owner upon request.

G. Shot rock which is excavated shall be disposed of offsite by the Contractor. No rock larger than one-half cubic foot will be permitted in the backfill.

1.14 COMPLIANCE WITH SAFETY REGULATIONS

A. The equipment items furnished shall comply with all governing federal and state laws regarding safety, including all current requirements of the Occupational Safety and Health Act (OSHA). Contractor shall be solely responsible for job safety in accordance with all laws, regulations, methods, etc. of OSHA and the state.

1.15 MAINTENANCE AND OPERATIONS MANUAL

A. Every piece of equipment furnished and installed shall be provided with complete maintenance and operations manuals. These shall be detailed in instructions to the Owner's personnel. They shall be attractively bound for the Owner's records. See 013323 and Section 017823 for requirements. The manuals shall be submitted to the Engineer for review as to adequacy and completeness. Provide four copies each, unless otherwise noted.

1.16 OBSTRUCTIONS

A. In cases where storm sewers, sanitary sewers, gas lines, water lines, telephone lines, electric lines or other underground structures are encountered, they shall not be displaced or molested

unless necessary, in which case they shall be replaced in as good a condition as found and as quickly as possible.

B. The Contractor is responsible for notifying the appropriate utility companies and coordinating the protection of the utility. All such lines or underground structures damaged or molested in the construction shall be replaced at the Contractor's expense, unless in the opinion of the Engineer, such damage was caused through no fault of the Contractor.

1.17 STORAGE FACILITIES

A. The Contractor shall be responsible for proper and adequate storage of all materials and equipment used on the site. Any additional off-site space required for construction purposes shall be the Contractor’s responsibility to obtain.

B. Upon completion of the work, the Contractor shall remove all storage facilities, surplus materials and equipment and restore the site to its original condition, or to the finished condition as required by the Contract.

1.18 STANDARDS OF WORKMANSHIP

A. Work of all crafts and trades shall be laid out to lines and elevations as established by the Contractor from the Drawings or from instructions by the Engineer. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The work shall be accurately measured and fitted to tolerance as established by the best practices of the crafts and trades involved and shall be as required to fit all parts of the work carefully and neatly together.

1.19 PERFORMANCE AND PAYMENT BONDS

A. Performance and payment bonds, as specified in of the General Conditions, shall run for a period of one (1) year after final acceptance of the work by the Owner. These bonds shall be executed on the forms provided as a part of the Contract Documents.

1.20 INITIAL STARTUP AND OPERATION

A. The initial operation period provided for herein is to check and provide the satisfactory mechanical operation of the facilities. These requirements for startup and operation in no way relieve the Contractor of their responsibility with respect to guaranty of work as specified in the "General Conditions." The manufacturer's representatives shall be present during this period to instruct the operators in the care, operation and maintenance of the equipment. When the shakedown period is completed, the Owner will assume responsibility for maintenance and operation, provided that all major items of the Work are operating satisfactorily.

B. If any or all of the facilities are not operating satisfactorily at the end of the shakedown period, the Contractor shall continue to maintain those facilities that are incomplete or not operating satisfactorily until they are complete and acceptable to the Owner. Maintenance by the Contractor shall include all mechanical facilities such as pumps and like equipment. Prior to

startup, the Contractor will be required to prepare an operating schedule detailing the proposed startup and their plans for manpower and auxiliary facilities to be provided.

1.21 GUARANTY

A. Except as otherwise specified herein, the Contractor shall guarantee all work from latent defects in materials, equipment and workmanship for one year from the date of substantial completion of the Contract as defined in Section 017700 of the technical Specifications.

B. The Contractor agrees that they will obtain from the manufacturers of equipment and materials furnished under this Contract, guarantees against defective materials and workmanship, and if those guarantees furnished by the manufacturer do not extend for the term of one year from and after the date upon which the final estimate is formally approved by the Owner or other established date as set forth hereinbefore, they shall make the necessary arrangements and assume all cost for extending this guarantee for the required period.

C. The Contractor shall promptly make such repairs or replacement as may be required under the above specified guarantee, and, when the repairs or replacements involve one or more items of installed equipment, shall provide the services of qualified factory-trained servicemen in the employ of the equipment manufacturers to perform or supervise the repairs or replacements.

D. When the Engineer or the Owner deems it necessary, and so orders, such replacements or repairs under this section shall be undertaken by the Contractor within 24 hours after service of notice. If the Contractor unnecessarily delays or fails to make the ordered replacements or repairs within the time specified, or if any replacements or repairs are of such nature as not to admit of the delay incident to the service of a notice, then the Owner shall have the right to make such replacements or repairs, and the expense thereof shall be paid by the Contractor or deducted from any moneys due the Contractor.

E. The Performance Bond shall remain in full force and effect throughout the Guaranty period.

F. All warranties and guarantees remaining in effect at and beyond the Guaranty expiration date shall be relinquished and transferred to the Owner. Copies of such warranty/guaranty shall be submitted to the Engineer prior to date of the start of the guaranty period.

1.22 TRAFFIC CONTROL AND MAINTENANCE

A. Traffic shall be maintained on all highways and streets at all times during construction of pipelines across or alongside said highways and streets. Access to all existing subdivisions and private residences shall also be kept open. Work shall be performed in accordance with applicable City, County, and state Department of Transportation guidelines. Traffic control shall include proper signing and flagging per these guidelines.

B. Traffic shall be maintained in accordance with the Manual on Uniform Traffic Control Devices. Work shall include all labor and materials necessary for construction and maintenance of traffic control devices and markings.

C. Traffic control shall also include all flag persons and traffic control devices such as, but not limited to, flashers, signs, barricades and vertical panels, plastic drums (steel drums will not be

permitted) and cones necessary for the control and protection of vehicular and pedestrian traffic as specified by the Manual on Uniform Traffic Control Devices.

D. Any temporary traffic control items, devices, materials, and incidentals shall remain the property of the Contractor when no longer needed.

E. The Contractor shall maintain a two-lane traveled way with a minimum lane width of 10 feet; however, during working hours, one-way traffic may be allowed at the discretion of the Engineer, provided adequate signing and flagpersons are at the location.

F. The Contractor shall fully cover with plywood any signs, either existing, permanent or temporary, which do not properly apply to the current traffic phasing and shall maintain the covering until the signs are applicable or are removed.

G. In general, all traffic control devices shall be placed starting and proceeding in the direction of the flow of traffic and removed starting and proceeding in the direction opposite to the flow of traffic.

H. The Engineer and Contractor shall review the signing before traffic is allowed to use lane closures, crossovers, or detours, and all signing shall be approved by the Engineer before work can be started by the Contractor.

I. If traffic should be stopped due to construction operations and an emergency vehicle on an official emergency run arrives on the scene, the Contractor shall make provisions for the passage of that vehicle immediately.

1.23 FLOOD INSURANCE

A. Contractor is required to carry flood insurance for projects which are located in designated flood hazard areas unless Federal Flood Insurance is not available.

1.24 UTILITY LINE ACTIVITIES COVERED UNDER NATIONWIDE PERMIT # 12

A. All activities involving utility line construction covered under the US Army Corps of Engineers NATIONWIDE PERMIT # 12 shall meet the following conditions:

1. 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 the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity.
2. 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. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

3. Notification: The permittee must submit a pre-construction notification to the US Army Corps District Engineer prior to commencing the activity if any of the following criteria are met:
   a. The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;
   b. A section 10 permit is required;
   c. The utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;
   d. 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;
   e. Discharges that result in the loss of greater than 1⁄10-acre of waters of the United States;
   f. Permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or
   g. Permanent access roads are constructed in waters of the United States with impervious materials.

B. All activities involving utility line construction covered under KENTUCKY GENERAL CERTIFICATION of Nationwide Permit # 12 shall meet the following conditions:

The general Water Quality Certification applies to surface waters of the Commonwealth as defined in 401KAR10:001 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.

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.
3. This general water quality certification does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.
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 nationwide permits issued for individual crossings which are part of a larger utility line project where the total cumulative impacts from a single and complete linear project exceed 1/2-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 the utility line crossing and roads, only one bank length is used in calculation of the totals.
7. 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).

8. 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.
9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
10. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
11. 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.
12. 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.
13. 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.
14. 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.
15. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

    a. 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.
    b. 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.
    c. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
    d. Removal of riparian vegetation shall be limited to that necessary for equipment access.
    e. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
    f. 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 be performed

in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

g. 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.

h. 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.

i. 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.

16. Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

1.25 PROTECTION OF VEGETATION

A. Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

1.26 PIPE AND MANHOLE REPLACEMENT

A. Where indicated in the Contract Documents, pipe and manholes to be replaced shall be removed from the site and disposed of by the Contractor. Material shall not be placed back in the trench or buried on the site.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 011400

SECTION 012213 – BASIS OF MEASUREMENT AND PAYMENT - WATER

PART 1 – GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. The Contractor shall furnish all necessary labor, machinery, tools, apparatus, equipment, materials, service and other necessary supplies and perform all Work shown on the Drawings and/or described in the Specifications and Contract Documents at the unit prices as indicated by the Bidder in the Bid.

B. The Bidder declares that they have examined the site of the Work and informed themselves fully in regard to all conditions pertaining to the place where the Work is to be done; that they have examined the Plans, Specification and Contract Documents for the Work, and have read all special provisions furnished prior to the opening of bids; and that they have further satisfied themselves relative to the Work to be performed. The Bidder further declares that they understand that unit quantities shown in the Proposal are approximates only, are subject to increase or decrease, and that, should the quantities of any of the items be decreased, the Bidder will make no claim for the anticipated profits. In addition, the Owner also reserves the right to adjust quantities, either by addition or deletion and as-BID unit price shall remain in effect for these quantity adjustments.

C. All excavation required of the work shall be done as part of the total price for the complete project. All excavation shall be unclassified.

1.2 PAY ITEMS

A. The items listed hereinafter refer to and are the same items listed in the PROPOSAL hereinbefore and constitute all of the pay items in this Contract. Any other items of Work listed in the Specifications or shown on the Drawings shall be considered incidental to the above items.

1.3 WATER MAIN (OPEN CUT)

A. Payment for furnishing and installing the water main will be made at the contract unit price per linear foot, complete in place, which price shall include compensation for furnishing, hauling, excavation (including rock), bedding, poly-wrapping where required, laying, installation of pipe location tape, installation of tracer wire and locator boxes, jointing, testing, backfilling, surface restoration (except pavement replacement), disinfection and cleanup. The quantity of water main to be paid for shall be the length of the complete water main measured along the centerline without any deduction for lengths of fittings, valves or other appurtenances.

B. Installation and maintenance of any and all temporary erosion and sedimentation control devices and methods as described in the Contract Documents and as required by Local, State and Federal requirements are included under this pay item.

C. Installation of concrete cradles, anchors, thrust blocks, or encasement shall be included as part of this pay item and considered incidental to the installation of the water main.

1.4 HIGHWAY ROAD BORES

A. The steel cover pipe required to be bored and/or jacked in place will be measured from end to end of the completed cover pipe in place, and will be paid for per bore at the contract unit price per linear foot complete in place, which price shall include the cover pipe, water main laid therein, material and work for blocking the ends, and all other items necessary for its construction as shown on the Drawings and/or described in the Specifications.

1.5 CONNECTION TO EXISTING WATER MAINS (WET CONNECTION)

A. Payment for connection to existing water mains will be made at the contract unit price each, complete in place, which price shall include compensation for furnishing and installing the tapping sleeve and valve, hauling, excavating (including rock), labor, backfilling, and all other installation requirements for connection to existing mains. Valve boxes and valve markers, where applicable, shall be furnished and installed with each tapping valve.

1.6 CONNECTION TO EXISTING WATER MAINS (DRY CONNECTION)

A. Payment for connection to existing water mains will be made at the contract unit price each, complete in place, which price shall include compensation for cutting and capping existing mains, removing existing caps or fittings, closing valves to isolate connection, furnishing and installing new water main to the existing water main, hauling, excavating (including rock), labor backfilling, and all other installation requirements for connection to existing mains. Valve boxes shall be furnished and installed with each valve.

1.7 GATE VALVES AND BOXES

A. Payment for furnishing and installing gate valves, and boxes will be made at the contract unit price each, complete in place, which price shall include compensation for furnishing, hauling, excavation, installation, blocking and backfilling.

1.8 FIRE HYDRANT AND VALVE

A. Payment for furnishing and installing 6-inch pipe hydrant lead (excluding wet tap and/or ductile iron water main tee), 6-inch hydrant lead gate valve and box, and the fire hydrant, including thrust blocks, hydrant extension (as required), crushed stone drain, and anchorage will be made at the contract unit price each, complete in place. Type of hydrant lead pipe shall be as noted on the Drawings. Tapping an existing main (where noted on the Drawings) is a separate pay item.

1.9 AIR RELEASE VALVE AND MANHOLE

A. Payment for air release valves will be made at the contract unit price each, complete in place, which price shall include compensation for tapping the water main, furnishing and installing corporation stop, connection piping, air release valve, and precast manhole.

1.10 STREAM CROSSINGS

A. Payment for creek crossings will be made at the contract unit price per lump sum, complete in place. Included in the cost of this pay item are the additional expenses associated with installing the creek crossing, which include compaction of native fill along the trench width, dense grade aggregate above and below the sewer main, as well as rip-rap from toe of slope to top of bank (both sides of creek) along the trench width. Creek crossing shall be measured along the centerline of the trench from top of bank to top of bank where indicated on the plans. The carrier pipe, trenching, and the installation of the carrier pipe are not considered a part of this pay item.

1.11 ASPHALT PAVEMENT REPLACEMENT FOR HIGHWAYS, STREETS, AND DRIVEWAYS

A. Paving replacement for bituminous concrete or Portland cement highway, street, and driveway will be paid for at the Contract unit price per linear foot of trench paved, which price will include compensation for furnishing and placing crushed stone trench backfill in accordance with Method "C", furnishing and placing base course for paving, placing the concrete sub-slab (for State Highways or where required by the Contract Documents), and furnishing and laying bituminous concrete surface.

1.12 PORTLAND CEMENT CONCRETE DRIVEWAY REPLACEMENT

A. Payment for replacement of Portland cement concrete driveways shall be made at the contract unit price per linear foot, complete in place, which price shall include compensation for Method "C" backfill, furnishing and placing base course for paving, furnishing and placing wire mesh reinforced concrete paving.

1.13 UNPAVED SHOULDERS AND GRAVEL DRIVEWAY REPLACEMENT

A. Payment for replacing unpaved highways, roads, gravel driveways, and shoulders will be made at the contract unit price per linear foot, complete in place, which price shall include compensation for Method "C" backfill from the top of the pipe bedding to six inches below the grade line and then the 6 inches dense graded aggregate course to the top of the trench.

1.14 PERMEABLE PAVER DRIVEWAY REPLACEMENT

A. Payment for replacing permeable paver driveways will be made at the contract unit price per linear foot, complete in place, which price shall include compensation for Method "C" backfill from the top of the pipe bedding to six inches below the grade line and then permeable pavers.

1.15 CONCRETE SIDEWALK REPLACEMENT

A. Payment for removing and replacing concrete sidewalks will be made at the contract unit price per linear foot of sidewalk replaced, complete in place, which price shall include compensation for crushed stone base placed to a 3-inch compacted thickness (upper portion Method "B" trench backfill) and 3000 psi concrete placed to a minimum depth of 4 inches. Sidewalk width shall match existing. Payment will not be made outside the limits of construction caused by negligence of the Contractor.

1.16 LEAK DETECTION VAULT

A. Payment for leak detection vault will be made at the contract unit price each, complete in place, which price shall include compensation for tapping the water main, furnishing and installing corporation stop, connection piping, isolation valves, and meter vault.

1.17 MOBILIZATION/DEMOBILIATION

A. Payment for mobilization and demobilization will be made at the contract unit price per lump sum.

1.18 WATER MAIN (HDD)

A. Payment for furnishing and installing the water main will be made at the contract unit price per linear foot, complete in place, which price shall include compensation for furnishing, hauling, horizontal directional drill of pipe, installation of tracer wire and locator boxes, jointing, testing, disinfection and cleanup. The quantity of water main to be paid for shall be the length of the complete water main measured along the centerline without any deduction for lengths of fittings, valves or other appurtenances.

B. Installation and maintenance of any and all temporary erosion and sedimentation control devices and methods as described in the Contract Documents and as required by Local, State and Federal requirements are included under this pay item.

C. Installation of concrete cradles, anchors, thrust blocks, or encasement shall be included as part of this pay item and considered incidental to the installation of the water main.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012213

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Definition: An alternate is an amount proposed by Bidders and stated on the Bid Form which will be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in the Contract Documents.

B. Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into the project. The Contractor shall be responsible for all such costs.

C. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates, if any.

D. Schedule: A "Schedule of Alternates" has been incorporated into the Bid Form for preparation by the Bidders. Individual Specification sections contain requirements for materials and methods necessary to achieve the work described for each alternate. Include as part of each alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the alternate.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012300

SECTION 012500 – PRODUCTS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. General: Substitution of materials and/or equipment is defined in Paragraph 6.7.1 of the General Conditions and more fully hereinafter.

B. Definitions: Definitions used in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents including such terms as "specialties", "systems", "structure", "finishes", "accessories", "furnishings", "special construction" and similar terms. Such terms are self-explanatory and have recognized meanings in the construction industry.

1. "Products" are items purchased for incorporation in the Work, regardless of whether they were specifically purchased for the project or taken from the Contractor's previously purchased stock. The term "product" as used herein includes the terms "material", "equipment", "system" and other terms of similar intent.
2. "Named Products" are products identified by use of the manufacturer's name for a product, including such items as a make or model designation, as recorded in published product literature, of the latest issue as of the date of the Contract Documents.
3. "Materials" are products that must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form units of work.
4. "Equipment" is defined as a product with operational parts, regardless of whether motorized or manually operated, and in particular, a product that requires service connections such as wiring or piping.

C. Substitutions: The Contractor's requests for changes in the products, materials, equipment and methods of construction required by the Contract Documents are considered requests for "substitutions" and are subject to the requirements specified herein. The following are not considered as substitutions:

1. Revisions to the Contract Documents, where requested by the Owner, Engineer are considered as "changes" not substitutions.
2. Substitutions requested during the bidding period, which have been accepted prior to the Contract Date, are included in the Contract Documents and are not subject to the requirements for substitutions as herein specified.
3. Specified Contractor options on products and construction methods included in the Contract Documents are choices available to the Contractor and are not subject to the requirements for substitutions as herein specified.
4. Except as otherwise provided in the Contract Documents, the Contractor's determination of and compliance with governing regulations and orders as issued by governing authorities do not constitute "substitutions" and do not constitute a basis for change orders.

D. Standards: Refer to Division 01 section "Definitions and Standards" for applicability of industry standards to the products specified for the project, and for acronyms used in the text of the specification sections.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to Work of this Section.

1.3 SUBMITTALS

The information required to be furnished for evaluation of product substitution will be as follows:

A. Performance capabilities and materials and construction details will be evaluated based upon conformance with the Specifications. Products that do not conform with the Specification shall not be accepted.

B. Manufacturer's production and service capabilities, and evidence of proven reliability will be acceptable if the following is furnished.

1. Written evidence that the manufacturer has not less than three years of experience in the design and manufacture of the substitute product.
2. Written evidence of at least one application of a type and size similar to the proposed substitute product, in successful operation in a wastewater treatment plant for a period of at least one year.
3. In lieu of furnishing evidence of a manufacturer's experience and successful operation of an application of the product to be substituted, the Contractor has the option of furnishing a cash deposit or bond which will guarantee replacement if the product furnished does not satisfy the other requirements specified in this section. The amount of each deposit or bond will be subject to approval.

C. Specific reference to characteristics either superior or inferior to specified requirements will be evaluated based on their net effect on the project. Products with any characteristics inferior to those specified will not be acceptable unless offset by characteristics that, in the opinion of the Engineer, will cause the overall effect of the product on the project to be at least equal to that of those specified.

1.4 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work.

B. Compatibility of Options: Compatibility of products is a basic requirement of product selection. When the Contractor is given the option of selecting between two or more products for use on the project, the product selected must be compatible with other products previously selected, even if the products previously selected were also Contractor options. The complete compatibility between the various choices available to the Contractor is not assured by the various requirements of the Contract Documents but must be provided by the Contractor.

C. The detailed estimate of operating and maintenance costs will be evaluated based on comparison with similar data on the specified products. Proposed substitute products which have an operating and maintenance cost that, in the opinion of the Engineer, exceeds that of the specified products will not be considered equal and will not be acceptable.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

General: Deliver, store, and handle products in accordance with manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft. Control delivery schedules to minimize long-term storage at the site and to prevent overcrowding of construction spaces. In particular, coordinate delivery and installation to ensure minimum holding or storage times for items known or recognized to be flammable, hazardous, easily dam aged, or sensitive to deterioration, theft and other sources of loss.

A. Deliver products to the site in the manufacturer's sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

B. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

C. Store heavy materials away from the project structure in a manner that will not endanger the supporting construction.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT COMPLIANCE

A. General: Requirements for individual products are indicated in the Contract Documents; compliance with these requirements are in itself a Contract Requirement. These requirements may be specified in any one of several different specifying methods, or in any combination of these methods. These methods include the following:

1. Proprietary.
2. Descriptive.
3. Performance.
4. Compliance with Reference Standards.

Compliance with codes, compliance with graphic details, allowances, and similar provisions of the Contract Documents also have a bearing on the selection process.

B. Procedures for Selecting Products: Contractor's options in selecting products are limited by requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects.

2.2 SUBSTITUTIONS

A. Conditions: Contractor's request for substitution will be received and considered when extensive revisions to the Contract Documents are not required, when the proposed changes are in keeping with the general intent of the Contract Documents, when the request are timely, fully documented and properly submitted, and when one or more of the following conditions is satisfied, all as judged by the Engineer; otherwise the requests will be returned without action except to record non-compliance with these requirements.

1. The Engineer will consider a request for substitution where the request is directly related to an "or equal" clause or similar language in the Contract Documents.
2. The Engineer will consider a request for substitution where the specified product or method cannot be provided within the Contract Time. However, the request will not be considered if the product or method cannot be provided as a result of the Contractor's failure to pursue the work promptly or to coordinate the various activities properly.
3. The Engineer will consider a request for substitution where the specified product or method cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
4. The Engineer will consider a request for a substitution where a substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. These additional responsibilities may include such considerations as additional compensation to the Engineer for redesign and evaluation services, the increased cost of other work by the Owner or separate contractors, and similar considerations.
5. The Engineer will consider a request for substitution when the specified product or method cannot be provided in a manner which is compatible with other materials of the work, and where the Contractor certifies that the substitution will overcome the incompatibility.
6. The Engineer will consider a request for substitution when the specified product or method cannot be properly coordinated with other materials in the work, and where the Contractor certifies that the proposed substitution can be properly coordinated.
7. The Engineer will consider a request for substitution when the specified product or method cannot receive a warranty as required by the Contract Documents and where the Contractor certifies that the proposed substitution receive the required warranty.
8. The Contractor shall reimburse the Owner any costs for review by the Engineer of proposed product substitutions which require major design changes, as determined by the Owner, to related of adjacent work made necessary by the proposed substitutions.

B. Work-Related Submittals: Contractor's submittal of and the Engineer's acceptance of shop drawings, product data or samples which relate to work not complying with requirements of the Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

2.3 GENERAL PRODUCT REQUIREMENTS

A. General: Provide products that comply with the requirements of the Contract Documents and that are undamaged and, unless otherwise indicated, unused at the time of installation. Provide products that are complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

1. Standard Products: Where they are available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
2. Continued Availability: Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard, domestically produced products for which the manufacturer has published assurances that the products and its parts are likely to be available to the Owner at a later date.

B. Nameplates: Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed project.

1. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
2. Equipment Nameplates: Provide permanent nameplate on each item of service-connected or power operated equipment. Locate the nameplate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data.

a. Name of manufacturer
b. Name of product
c. Model number
d. Serial number
e. Capacity
f. Speed
g. Ratings

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. General: Except as otherwise indicated in individual sections of these Specifications, comply with the manufacturer's instructions and recommendations for installation of the products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect surfaces as necessary to ensure freedom from damage and deterioration at Time of Acceptance.

END OF SECTION 012500

SECTION 013113 – PROJECT COORDINATION

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

Minimum administrative and supervisory requirements necessary for coordination of work on the project include but are not necessarily limited to the following:

A. Coordination and meetings.

B. Limitations for use of site.

C. Coordination of crafts, trades and subcontractors.

D. General installation provisions.

E. Cleaning and protection.

F. Conservation and salvage.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to work of this section.

1.3 COORDINATION AND MEETINGS

A. Monthly general project coordination meetings will be held at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as regular project meetings and special pre-installation meetings. Representation at each meeting by every party currently involved in coordination or planning for the work of the entire project is requested. Meetings shall be conducted in a manner which will resolve coordination problems. Results of the meeting shall be recorded and copies distributed to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.4 LIMITATIONS ON USE OF THE SITE

A. Limitations on site usage as well as specific requirements that impact site utilization are indicated on the drawings and by other contract documents. In addition to these limitations and requirements, allocation of available space shall be administered equitably among entities needing both access and space so as to produce the best overall efficiency in performance of the total work of the project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.

1.5 COORDINATION OF CRAFTS, TRADES AND SUBCONTRACTORS

A. The Contractor shall coordinate the work of all the crafts, trades and subcontractors engaged on the work, and they shall have final responsibility in regard to the schedule, workmanship and completeness of each and all parts of the work.

B. All crafts, trades and subcontractors shall be made to cooperate with each other and with others as they may be involved in the installation of work which adjoins, incorporates, precedes or follows the work of another. It shall be the Contractor's responsibility to point out areas of cooperation prior to the execution of subcontractor agreements and the assignment of the parts of the work. Each craft, trade and subcontractor shall be made responsible to the Owner, for furnishing embedded items and giving directions, for doing all cutting and fitting and making all provisions for accommodating the work, and for protecting, patching, repairing and cleaning as required to satisfactorily perform the work.

C. The Contractor shall be responsible for all cutting, digging and other action of their subcontractors and workmen. Where such action impairs the safety or function of any structure or component of the project, the Contractor shall make such repairs, alterations and additions as will, in the opinion of the Engineer, bring said structure or component back to its original design condition at no additional cost to the Owner.

D. Each subcontractor is expected to be familiar with the General Requirements and all sections of the detailed Specifications for all other trades and to study all Drawings applicable to their work including Architectural and Structural Drawings, to the end that complete coordination between trades will be affected. Consult with the Engineer if conflicts exist on the Drawings.

E. Special attention shall be given to points where ducts or piping must cross other ducts or piping, where lighting fixtures must be recessed in ceilings and where ducts, piping and conduits must fit into walls and columns. It shall be the responsibility of such subcontractor to leave the necessary room for other trades.

F. No extra compensation will be allowed to cover the cost of removing piping, conduit, ducts, etc., or equipment found encroaching on space required by others.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013113

SECTION 013213 – CONTRACTORS SEQUENCE OF CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 CONTRACTOR'S CONSTRUCTION SEQUENCE, SCHEDULE & PROVISIONS

The Contractor shall be responsible for all planning, coordination and execution of the work. Cost or schedule adjustments shall be given for changes to the construction sequence not approved by the Owner and Engineer.

The Contractor's proposed construction sequence schedule must allow the Owner to coordinate with the Property Owner to maintain a safe environment during and after construction for the horses on the farm.

The Contractor shall take all necessary precautions to restrict all construction activities including but not limited to site access, equipment, material storage, and spoils to the existing right-of-way and OCWD easement. Any activities outside these limits are strictly prohibited. Fields designated on drawings are used for horses and damage to fields outside of right-of-way and easement boundary must be avoided. The Contractor shall be responsible for all damages brought about outside of these designated areas.

Contractor shall submit construction sequence plan to Engineer for review prior to mobilization.

Some general constraints to the Contractor's construction sequence are noted as follows. See Appendix A for field references.

A. Contractor shall provide Engineer/Owner with at least 30 days notice prior to mobilization. Engineer/Owner will notify Property Owner to relocate horses.

B. Woods Shed can be accessed at any time, once 30 days' notice has been provided by the Contractor. Property Owner will need to be provided notice to allow them to install electric fence.

C. Highway Shed and Field 6 can be under construction at the same time during the months of April, May, June, and July. If work is performed outside these months, construction activity will need to be completed separately.

D. Main Entrance can be accessed at any time. Contractor shall not block drive while work is being performed in this area.

E. Fields 1, 2, and 3 shall not be under construction at the same time.

F. Contractor shall complete clean-up and pressure testing of line as they progress through the fields and be completed with both prior to advancing to the next field. If Contractor's final construction sequence doesn't allow for this approach, Contractor shall request a deviation in their submittal for Engineer/Owner's review.

G. Contractor shall notify Engineer when they have completed construction activities within a field. Engineer will then coordinate with Owner to have proposed 4 board wooden fence installed.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013213

SECTION 013216 – PROGRESS SCHEDULES

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Scheduling Responsibilities:

1. In order to provide a definitive basis for determining job progress, a construction schedule of a type approved by the Owner will be used to monitor the project.
2. The Contractor shall be responsible for preparing the schedule and updating on a monthly basis. It shall at all times remain the Contractor's responsibility to schedule and direct his forces in a manner that will allow for the completion of the work within the contractual period.

B. Construction Hours:

1. No work shall be done between 6:00 p.m. and 7:00 a.m. nor on Saturdays, Sundays or legal holidays without the prior written permission of the Owner. However, emergency work may be done without prior written permission.
2. If the Contractor, for his convenience and at his own expense, should desire to carry on his work at night or outside the regular hours, he shall submit a written request to the Engineer and shall allow nine days for satisfactory arrangements to be made for inspecting the work in progress. If permission is granted, the Contractor shall light the different parts of the project as required to comply with all applicable federal, state, and local regulations. The Contractor shall also revise his schedule as appropriate at the next monthly schedule update meeting to reflect the changes in working hours.

C. Progress of the Work:

1. The work shall be started within 30 days following the Notice to Proceed and shall be executed with such progress as may be required to prevent delay to other Contractors or to the general completion of the project. The work shall be executed at such times and in or on such parts of the project, and with such forces, material and equipment, to assure completion of the work in the time established by the Contract.
2. The Contractor agrees that whenever it becomes apparent from the current monthly schedule update that delays have resulted and, hence, that the Contract completion date will not be met or when so directed by the Owner, he/she will take some or all of the following actions at no additional cost to the Owner:

    a. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.
    b. Increase the number of working hours per shift, shifts per working day or days per week, the amount of construction equipment, or any combination of the foregoing to substantially eliminate the backlog of work.
    c. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities and comply with the revised schedule.
    d. The Contractor shall submit to the Owner or the Owner's representative for review a written statement of the steps he intends to take to remove or arrest the delay to

the critical path in the accepted schedule. If the Contractor should fail to submit a written statement of the steps he intends to take or should fail to take such steps as required by the Contract, the Owner may direct the level of effort in manpower (trades), equipment, and work schedule (overtime, weekend and holiday work, etc.), to be employed by the Contractor in order to remove or arrest the delay to the critical path in the accepted schedule, and Contractor shall promptly provide such level of effort at no additional cost to the Owner.

1.2 CONSTRUCTION SCHEDULE

A. Within 10 calendar days of the Notice to Proceed, the Contractor shall submit to the Engineer five copies of his proposed schedule. The schedule will be the subject of a schedule review meeting with the Contractor, the Engineer and the Owner or the Owner's representative within one week of its submission. The Contractor will revise and resubmit the schedule until it is acceptable and accepted by the Owner or the Owner's representative.

1.3 SUBMITTAL SCHEDULE

A. In addition to the above scheduling requirements, the Contractor will be required to submit a complete and detailed listing of anticipated submittals during the course of the Contract. The Contractor will coordinate his submittals with those of his subcontractors and Suppliers and will identify each submittal by Contract drawing number and specification number. The anticipated submission date for each submittal must be indicated along with the date on which its return is anticipated. For planning purposes, the Engineer will usually return shop drawings 30 days after receipt. However, longer durations for review will not be considered a basis for a claim.

B. The Submittal Schedule must be submitted within 20 working days of the Notice to Proceed and will be the subject of a special meeting with the Engineer and the Owner or the Owner's representative within one week of the schedule's submission. At that meeting, the Submittal Schedule will be reviewed for comprehensiveness and feasibility. The Engineer will adjust the projected return dates based on the need for more or less time for each submittal's review. The Submittal Schedule will then be accepted or revised as required.

1.4 SCHEDULE UPDATES

A. Monthly Meetings:

1. A monthly Schedule Update Meeting will be held in conjunction with the applicable progress meeting at the construction site to review and update the Schedule. The Schedule Update Meetings will be chaired by the Owner or the Owner's representative and attended by the Contractor and the Engineer. Actual progress of the previous month will be recorded, and future activities will be reviewed. The duration of activities and their logical connections may be revised as needed. Decisions made at these meetings and agreed to by all parties are binding with the exception that no contractual completion dates will be modified without formal written requests and acceptance as specified herein.

B. Revisions to Schedule:

1. The Schedule shall be formally revised if any of the following conditions are encountered:

    a. When a delay in completion of any work item or sequence of work items results in an indicated extension of the project completion.
    b. When delays in submittals or deliveries or work stoppages are encountered, which make replanning or rescheduling of the work necessary.
    c. When the schedule does not represent the actual prosecution and progress of the project.

1.5 CONTRACT COMPLETION TIME

A. Causes for Extensions:

1. The Contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any Contract completion date, he/she shall furnish such justification and supporting evidence as the Owner or the Owner's representative may deem necessary for a determination as to whether the Contractor is entitled to an extension of time under the provisions of this Contract. The Owner, with the assistance of the Engineer, will, after receipt of such justification and supporting evidence, make findings of fact and will advise the Contractor in writing thereof.

B. Requests for Time Extension:

1. Each request for change in any Contract completion date shall be initially submitted to the Owner within the time frame stated in the General Conditions. All information known to the Contractor at that time concerning the nature and extent of the delay shall be transmitted to the Owner at that time. Within the time frame stated in the General Conditions but before the date of final payment under this Contract, all information as required above concerning the delay must be submitted to the Owner. No time extension will be granted for requests which are not submitted within the foregoing time limits.

1.6 WEATHER DELAYS

A. This provision specifies the procedures for the determination of time extensions for unusually severe weather in accordance with Article 6 - Contractor's Responsibilities and Article 12 - Change of Contract Price; Change of Contract Times of the EJCDC General Conditions, specification section 007200. In order for the Owner to award a time extension under this clause, the following conditions must be satisfied:

1. The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the average inclement weather anticipated for the project location during the given month.
2. The unusually severe weather must actually cause a delay to a project activity that is vital to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.
3. The Contractor must demonstrate that the weather caused a delay long enough to affect the project's scheduled critical path.
4. The following schedule of monthly anticipated inclement weather delay is based on historical data from the National Oceanic and Atmospheric Administration (NOAA) and will constitute the base line for monthly weather time evaluations. The Contractor's

progress schedule must reflect these potential weather days in all weather-dependent activities. The rainfall reading will be recorded from a location that is mutually agreeable to both the Owner and Contractor.

5. The baseline is defined as the normal number of calendar days for each month during which construction activity exposed to weather conditions is expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Baseline is included in the Work and is not eligible for extension of Contract Time.
6. Standard Baseline

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
17	11	9	8	8	7	7	6	5	5	8	9

7. Adverse weather is defined as the occurrence of one or more of the following conditions within a 24-hour day that prevents construction activity exposed to weather conditions or access to the site:

    a. Precipitation (rain, snow, or ice) in excess of 0.10 inches liquid measure.

8. Adverse weather may include, if appropriate determined by Owner, "dry-out" or "mud" days

    a. Resulting from precipitation days that occur beyond the standard baseline
    b. Only if there is a hindrance to site access or site work and Contractor has taken reasonable accommodations to avoid such hindrance.
    c. At a rate no greater than one "dry-out" or "mud" day for each day or consecutive days of precipitation beyond the standard baseline that total 1.0 inch or more, liquid measure, unless specifically recommended otherwise by Engineer.
    d. Contractor should allow for an appropriate number of "dry-out" or "mud" days that are included in the standard baseline days in which such applicable construction activities are expected to be prevented and suspended.

9. Calculation

    a. A weather delay day may be counted if adverse weather prevents work on the project for 50 percent or more of the Contractor's scheduled workday and critical path construction activities were included in the day's schedule.
    b. Make-up days

        1) Requests to work weekends, extended days, or holidays due to previous week's weather delay, when authorized and approved by Owner, should be considered in the overall monthly calculation. Worked weekends, extended hour days and holidays will count as workdays in the calculations.
        2) Weather delays on 'make-up days' should not be included as delay days. The original weather delay day that caused the make-up day may be included as a delay day.

    c. The number of actual adverse weather delay days shall be calculated chronologically from the first to the last day in each month.
    d. Delay days will be awarded on a one-for-one basis.

e. For projects that span longer than a single month, the calculation will be based on the duration of the project.
f. Delay Days = (weather delay days) - (the cumulative baseline weather days for all months worked) - (make-up days).

1) Example for Project under construction April through August:

(41 construction delay days) - (8+8+7+7+6; April-Aug baseline days) = 5 Delay Days

10. Upon acknowledgement of the Notice to Proceed and continuing throughout the Contract, the Contractor will maintain daily records in which the occurrence of adverse weather and resultant impact to normally scheduled work are identified. If the number of actual adverse weather days exceeds the number of days anticipated listed above, the Owner may consider granting a time extension.
11. The Contractor shall notify the Owner, Engineer, and Engineer's RPR at the time of any occurrence of any adverse weather resulting in a delay to the project's critical path.
12. The number of adverse weather days observed each month shall be documented and discussed at each progress meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013216

SECTION 013233 – PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
4. Preconstruction video recordings.
5. Periodic construction video recordings.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.3 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph or video recording. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit image files within 10 days of taking photographs.

1. Submit photos on thumb-drive or by uploading to web-based project software site. Include copy of key plan indicating each photograph's location and direction.
2. Identification: Provide the following information with each image description:

a. Name of Project.
b. Name and contact information for photographer.
c. Name of Project Manager
d. Name of Contractor.
e. Date photograph was taken.
f. Description of location, vantage point, and direction.
g. Unique sequential identifier keyed to accompanying key plan.

C. Video Recordings: Submit video recordings within 10 days of recording.

1. Submit video recordings on or thumb drive or by uploading to web-based project software site. Include copy of key plan indicating each video's location and direction.

2. Identification: With each submittal, provide the following information:

    a. Name of Project.
    b. Name and address of photographer.
    c. Name of Project Manager
    d. Name of Contractor.
    e. Date video recording was recorded.
    f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.4 QUALITY ASSURANCE

A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

B. Construction Webcam Service Provider: A firm specializing in providing photographic equipment, web-based software, and related services for construction projects, with record of providing satisfactory services similar to those required for Project.

1.5 FORMATS AND MEDIA

A. Digital Photographs: Provide color images in JPG format, produced by a digital camera with a minimum sensor size of **12** megapixels, and at an image resolution of not less than **3200 by 2400** pixels. Use flash in low light levels or backlit conditions.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of **12** megapixels and capable of recording in full high-definition mode. Provide supplemental lighting in low light levels or backlit conditions.

C. Digital Images: Submit digital media as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

D. Metadata: Record accurate date, time, and GPS location data from camera.

E. File Names: Name media files with date, Project area, and sequential numbering suffix.

1.6 CONSTRUCTION PHOTOGRAPHS

A. Photographer: Engage a qualified photographer to take construction photographs.

B. General: Take photographs with maximum depth of field and in focus.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

C. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Engineer.

1. Flag construction limits before taking construction photographs.
2. Take photographs to show existing conditions adjacent to property before starting the Work.
3. Take photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take photographs **weekly**. Select vantage points to show status of construction and progress since last photographs were taken.

E. Final Completion Construction Photographs: Take photographs after date of Substantial Completion for submission as Project Record Documents. Engineer will inform photographer of desired vantage points.

1.7 CONSTRUCTION VIDEO RECORDINGS

A. Video Recording Photographer: Engage a qualified videographer to record construction video recordings.

B. Narration: Describe scenes on video recording. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.

1. Confirm date and time at beginning and end of recording.
2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.

C. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.

D. Preconstruction Video Recording: Before starting construction, record video recording of Project site and surrounding properties from different vantage points, as directed by the Engineer.

1. Flag construction limits before recording construction video recordings.
2. Show existing conditions adjacent to Project site before starting the Work.
3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of construction.
4. Show protection efforts by Contractor.

E. Periodic Construction Video Recordings: Record video recording monthly. Select vantage points to show status of construction and progress since last video recordings were recorded.

PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013233

SECTION 013323 – SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND RFIs

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. General: This section specifies procedural requirements for non- administrative submittals including shop drawings, product data, samples (when samples are specifically requested) and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.

B. Refer to other Division 01 sections and other Contract Documents for Specifications on administrative, non-work-related submittals. Such submittals include, but are not limited to the following items:

1. Permits.
2. Payment applications.
3. Performance and payment bonds.
4. Insurance certificates.
5. Inspection and test reports.
6. Schedule of values.
7. Progress reports.
8. Listing of subcontractors.
9. Operating and Maintenance Manuals

C. Engineer prefers initial submittals be in electronic media along with one paper copy for review. Engineer utilizes Newforma software and will provide Contractor with the necessary links and instructions for submittal purposes. Upon completion of the review process, Contractor shall print two copies of complete submittal, including transmittal cover page and stamp page, and deliver to Engineer.

If Contractor does not have capability to submit electronic submittals, then Contractor shall submit a request to Engineer for waiver. In the event a waiver is granted, paper submittals shall be provided as directed by the Engineer.

D. Submittals shall be checked and reviewed by the Contractor and stamped with Contractor's review stamp before submission to the Engineer. The review of the submittals by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Review of such submittals will not relieve the Contractor of the responsibility for any errors which may exist as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work.

E. All Requests for Information (RFI) to Engineer shall be submitted electronically via Engineer's Newforma software.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-01 Specification sections, apply to work of this section.

B. Section 017823 - Operating and Maintenance Manuals.

1.3 DEFINITIONS

A. Shop drawings are technical drawings and data that have been specially prepared for this project, including but not limited to the following items:

1. Fabrication and installation drawings.
2. Setting diagrams.
3. Shopwork manufacturing instructions.
4. Templates.
5. Patterns.
6. Coordination drawings (for use on site).
7. Schedules.
8. Design mix formulas.
9. Contractor's engineering calculations.

Standard information prepared without specific reference to a project is not considered to be shop drawings.

B. Product data includes standard printed information on manufactured products that has not been specially-prepared for this project, including but not limited to the following items:

1. Manufacturer's product specifications and installation instructions.
2. Standard color charts.
3. Catalog cuts.
4. Roughing-in diagram and templates.
5. Standard wiring diagrams.
6. Printed performance curves.
7. Operational range diagrams.
8. Mill reports.
9. Standard product operating and maintenance manuals.

C. Samples, where specifically required, are physical examples of work, including but not limited to the following items:

1. Partial sections of manufactured or fabricated work.
2. Small cuts or containers of materials.
3. Complete units of repetitively used materials.
4. Swatches showing color, texture and pattern.
5. Color range sets.
6. Units of work to be used for independent inspection and testing.

D. Miscellaneous submittals are work-related, non-administrative submittals that do not fit in the three previous categories, including, but not limited to the following:

1. Specially prepared and standard printed warranties.
2. Maintenance agreements.
3. Workmanship bonds.
4. Survey data and reports.
5. Testing and certification reports.
6. Record drawings.
7. Field measurement data.

1.4 SUBMITTAL PROCEDURES

A. General: Refer to the General Conditions and Paragraph 1.1 hereinbefore for basic requirements for submittal handling.

B. Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities such as testing, purchasing, fabrication, delivery and similar activities that require sequential activity.

1. It is the Contractor's responsibility to make such field measurements as are needed to base submittals on actual field conditions to assure proper connection, fit, function and performance of all work and equipment in the execution of the contract work.
2. Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the Architect/Engineer's need to review a related submittal. The Architect/Engineer reserves the right to withhold action on any submittal requiring coordination with other submittals until related submittals are forthcoming.

C. Coordination of Submittal Times: Prepare and transmit each submittal to the Architect/Engineer sufficiently in advance of the scheduled performance of related work and other applicable activities. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Architect/Engineer's need to review submittals concurrently for coordination.

D. Review Time: Allow sufficient time so that the installation will not be delayed as a result of the time required to properly process submittals, including time for resubmittal, if necessary. Advise the Architect/Engineer on each submittal, as to whether processing time is critical to the progress of the work and if the work would be expedited if processing time could be shortened.

1. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The Architect/Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination.
2. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect/Engineer sufficiently in advance of the work.

E. Submittal Preparation: Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.

1. Project name.
2. Date.
3. Name and address of Architect/Engineer.
4. Name and address of Contractor.
5. Name and address of subcontractor.
6. Name and address of supplier.
7. Name of manufacturer.
8. Number and title of appropriate specification section.
9. Drawing number and detail references, as appropriate.
10. Similar definitive information as necessary.

F. All submittals shall be referenced to the applicable item, section and division of the Specifications, and to the applicable drawing(s) or drawing schedule(s). Include only one item in a submittal.

G. The Contractor shall review and check submittals and shall indicate their review by initials and date. Any submittal received without this evidence of review shall be returned to the Contractor without review.

H. If the submittals deviate from the Contract Drawings and/or Specifications, the Contractor shall advise the Engineer in writing of the deviation and the reasons therefore.

I. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect/Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals received from sources other than the Contractor will be returned to the sender "without action".

J. Electronic Submittals: If the electronic method of submittals is agreed to by Contractor, Engineer, and Owner, the format and procedures will be determined and implemented prior to any submittals. Submittals will be processed through "Newforma" software. Each item of the submittal documents shall be in .pdf format and shall be oriented so that they are read from upper left corner to lower right corner, with no rotation of said document being required after receiving it. The .pdf file shall be named so that it describes the item being submitted. All other requirements herein are part of the electronic submittal process with the exception of the duplicate copies. Contractor stamp indicating review and any comments or notes must be on the .pdf submittal.

1.5 SPECIFIC SUBMITTAL REQUIREMENTS

A. Shop drawings shall be prepared by a qualified detailer. Details shall be identified by reference to sheet and detail numbers shown on Contract Drawings. Where applicable, show fabrication, layout, setting and erection details.

Shop drawings are defined as original drawings prepared by the Contractor, subcontractors, suppliers, or distributors performing work under this Contract. Shop drawings illustrate some portion of the work and show fabrication, layout, setting or erection details of equipment, materials and components. The Contractor shall, except as otherwise noted, have prepared the number of reviewed copies required for their distribution plus four which will be retained by the Engineer. Shop drawings shall be folded to an approximate size of 8.5 inches by 11 inches and

in such manner that the title block will be located in the lower right-hand corner of the exposed surface.

B. Project data shall include manufacturer's standard schematic drawings modified to delete information which is not applicable to the project, and shall be supplemented to provide additional information applicable to the project. Each copy of descriptive literature shall be clearly marked to identify pertinent information as it applies to the project.

C. Where samples are required, they shall be adequate to illustrate materials, equipment or workmanship, and to establish standards by which completed work is judged. Provide sufficient size and quantity to clearly illustrate functional characteristics of product and material, with integrally related parts and attachment devices, along with a full range of color samples.

D. In the event the Engineer does not specifically reject the use of material or equipment at variance to that which is shown on the Drawings or specified, the Contractor shall, at no additional expense to the Owner, and using methods reviewed by the Engineer, make any changes to structures, piping, controls, electrical work, mechanical work, etc., that may be necessary to accommodate this equipment or material. Should equipment other than that on which design drawings are based be accepted by the Engineer, shop drawings shall be submitted detailing all modification work and equipment changes made necessary by the substituted item.

E. Additional information on particular items, such as special drawings, schedules, calculations, performance curves, and material details, shall be provided when specifically requested in the technical Specifications.

F. Submittals for all electrically operated items (including instrumentation and controls) shall include complete size, color coding, all terminations and connections, and coordination with related equipment.

G. Equipment shop drawings shall indicate all factory or shop paint coatings applied by suppliers, manufacturers and fabricators; the Contractor shall be responsible for ensuring the compatibility of such coatings with the field-applied paint products and systems.

H. Fastener specifications of manufacturer shall be indicated on equipment shop drawings.

I. Where manufacturers brand names are given in the Specifications for building and construction materials and products, such as grout, bonding compounds, curing compounds, masonry cleaners, waterproofing solutions and similar products, the Contractor shall submit names and descriptive literature of such materials and products he proposes to use in this Contract.

J. No material shall be fabricated or shipped unless the applicable drawings or submittals have been reviewed by the Engineer and returned to the Contractor.

K. All bulletins, brochures, instructions, parts lists, and warranties package with and accompanying materials and products delivered to and installed in the project shall be saved and transmitted to the Owner through the Engineer.

1.6 REVIEW STATUS

A. Submittals will be returned, stamped with the following classifications: "Reviewed", "Furnish as Corrected", "Revise and Resubmit", "Rejected", or "Submit Specified Item".

B. In some instances, corrections to dimensions or clarification notations will be required, in which case the drawings will be marked "Furnish as Corrected." These shop drawings will not be required to be resubmitted for further approval. If the supplier makes additional modifications after receiving a "Furnish as Corrected" disposition, the drawings must then be resubmitted for review.

C. If the shop drawing is returned with the notation "Revise and Resubmit", the Contractor shall promptly make the revisions indicated and repeat the submittal approval procedure.

D. If the shop drawing is returned with the notation "Submit Specified Item", this indicates that the submittal does not meet the specification, will not be reviewed, and is unacceptable. Upon return of a drawing so marked, the Contractor shall repeat the initial approval procedure, submitting acceptable materials or equipment.

E. The "Rejected" notation is used to indicate materials or equipment that are not acceptable and are not included in the project.

1.7 REMINDER OF CONTRACTOR RESPONSIBILITIES

A. Verify field measurements, field construction criteria, catalog numbers, and similar data.

B. Coordinate each submittal with requirements of work and of Contract Documents.

C. Notify Engineer, in writing at time of submission, of deviations in submittals from requirements of Contract Documents.

D. Begin no work, and have no material or products fabricated or shipped which requires submittals until return of submittals with Engineer's stamp and initials or signature indicating review.

E. Upon review and closeout of a submittal, Contractor shall print two copies of complete submittal, including transmittal cover page and stamp page, and deliver to Engineer.

F. It is emphasized that the review of shop drawings by the Engineer is for general conformance to the Contract Drawings and Specifications, but subject to the detailed requirements of the Contract Drawings and Specifications. Although the Engineer may check submitted data in more or less detail, such checking is an effort to discover errors and omissions in the Contractor's drawings and to assist the Contractor in coordinating and expediting their work, but shall in no way relieve the Contractor of their obligation and responsibility to properly coordinate the work, and to Engineer the details of the work in such a manner, that the purpose and intent of the Contract will be achieved nor shall any such detailed checking by the Engineer be construed as placing on him or on the Owner, any responsibility for the accuracy, proper fit, functioning or performance of any phase of the work included in this Contract. The Contractor is responsible for confirmation and correlation of dimensions at the job site; for information that pertains solely to the fabrication processes or to the techniques of construction; for the

coordination of the work of all trades; and for performance of their work in a safe and satisfactory manner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013323

SECTION 014216 – DEFINITIONS AND STANDARDS - SHORT FORM

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. This section specifies procedural and administrative requirements for compliance with governing regulations and codes and standards imposed upon the Work. These requirements include obtaining permits, licenses, inspections, releases and similar documentation, as well as payments, statements and similar requirements associated with regulations, codes and standards.

B. The term, "Regulations", is defined to include laws, statutes, ordinances and lawful orders issued by governing authorities, as well as those rules, conventions and agreements within the construction industry which effectively control the performance of the Work regardless of whether they are lawfully imposed by governing authority or not.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to Work of this Section.

1.3 DEFINITIONS

A substantial amount of specification language consists of definitions of terms found in other Contract Documents, including Drawings. (Drawings are recognized as being diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in Contract Documents are defined in this article. Definitions and explanations contained in this section are not necessarily either complete or exclusive but are general for the Work to the extent that they are not stated more explicitly in another element of the Contract Documents.

The provisions or requirements wof other Division 01 sections apply to entire Work of the Contract and, where so indicated, to other elements which are included in the Project.

A. Indicated: The term, "indicated", is a cross-reference to graphic representations, notes or schedules on the Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in Contract Documents. Where terms such as "shown", "noted", "scheduled", and "specified" are used in lieu of "indicated", it is for the purpose of helping the reader locate the cross-reference, and no limitation of location is intended except as specifically noted.

B. Directed, Requested, Etc.: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "approved", "required", "accepted", and "permitted" mean "directed by the Architect/Engineer", "requested by the Architect/Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend the Architect's/ Engineer's responsibility into the Contractor's area of construction supervision.

C. Approve: Where used in conjunction with the Architect's/Engineer's response to submittals, requests, applications, inquiries, reports and claims by the Contractor, the meaning of the term "approved" will be held to limitations of the Architect's/Engineer's responsibilities and duties as specified in General and Supplementary Conditions. In no case will the Architect's/Engineer's approval be interpreted as a release of the Contractor from responsibilities to fulfill requirements of Contract Documents.

D. Project Site: The term, "project site", is defined as the space available to the Contractor for performance of the Work, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land upon which the Project is to be built.

E. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean "supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations" as applicable in each instance.

F. Install: Except as otherwise defined in greater detail, the term "install" is used to describe operations at project site including the actual "unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing protecting, cleaning and similar operations", as applicable in each instance.

G. Provide: Except as otherwise defined in greater detail, the term "provide" means "to furnish and install, complete and ready for intended use", as applicable in each instance.

H. Installer: The term "installer" is defined as "the entity" (person or firm) engaged by the Contractor, its subcontractor or sub-subcontractor for performance of a particular unit of work at the project site, including installation, erection, application and similar required operations. It is a requirement that installers are experienced in the operations they are engaged to perform.

I. Testing Laboratories: The term "testing laboratory" is defined as an independent entity engaged to perform specific inspections or tests of the Work, either at the project site or elsewhere, and to report, and (if required) interpret results of those inspections or tests.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Except where more explicit or more stringent requirements are written into the Contract Documents, applicable construction industry standards have the same force and effect as if bound into or copied directly into the Contract Documents. Such industry standards are made a part of the Contract Documents by reference. Individual specification sections indicate which codes and standards the Contractor must keep available at the project site for reference.

1. Referenced standards (standards referenced directly in the Contract Documents) take precedence over non-referenced standards that are recognized in the industry for applicability to the Work.
2. Non-referenced standards are defined as not being applicable to the Work, except as a general requirement of whether the Work complies with recognized construction industry standards.

B. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents specifically indicate a less stringent requirement. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Architect/Engineer for a decision before proceeding.

1. Minimum Quantities or Quality Levels: In every instance the quantity or quality level shown or specified is intended to be the minimum for the work to be provided or performed. Unless otherwise indicated, the actual work may either comply exactly, within specified tolerances, with the minimum quantity or quality specified, or may exceed that minimum within reasonable limits. In complying with these requirements, the indicated numeric values are either minimum or maximum values, as notes, or as appropriate for the context of the requirements. Refer instances of uncertainty to the Architect/Engineer for decision before proceeding.

D. Copies of Standards: The Contract Documents require that each entity performing work be experienced in that part of the Work being performed. Each entity is also required to be familiar with industry standards applicable to that part of the work. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.
2. Although certain copies of standards needed for enforcement of the requirements may be required submittals, the Architect/ Engineer reserves the right to require the Contractor to submit additional copies of these standards as necessary for enforcement of the requirements.

1.5 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 014216

SECTION 014500 – QUALITY CONTROL SERVICES - LINE PROJECT

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Required inspection and testing services are intended to assist in the determination of probable compliance of the Work with requirements specified or indicated. These required services do not relieve the Contractor of responsibility for compliance with these requirements or for compliance with requirements of the Contract Documents.

B. Tests, inspections and certifications of materials, equipment, subcontractors or completed Work, as required by the various sections of the Specifications shall be obtained by the Contractor and all costs shall be included in the Contract Price.

C. The Contractor shall submit to the Engineer the name of any testing laboratory to be used.

D. Contractor shall deliver written notice to the Engineer at least 24 hours in advance of any inspections or tests to be made at the project site. All inspections or tests to be conducted at the field shall be done in the presence of the Engineer or the Engineer's representative.

E. Certifications by independent testing laboratories may be by copy of the attest and shall give scientific procedures and results of tests. Certifications by persons having interest in the matter shall be by original attest properly sworn to and notarized.

F. Inspections, tests and related actions specified in this section and elsewhere in the Contract Documents are not intended to limit the Contractor's own quality control procedures which facilitate overall compliance with requirements of the Contract Documents.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to Work of this Section.

1.3 SUBMITTALS

A. General: Refer to Section 013323 for the general requirements on submittals. Submit a certified written report of each inspection, test or similar service, directly to the Architect/Engineer.

B. Report Data: Written reports of each inspection, test or similar service shall include, but not be limited to the following:

1. Name of testing agency or test laboratory.
2. Dates and locations of samples and tests or inspections.
3. Names of individuals making the inspection or test.
4. Designation of the work and test method.
5. Complete inspection or test data.

6. Test results.
7. Interpretations of test results.
8. Notation of significant ambient conditions at the time of sample-taking and testing.
9. Comments or professional opinion as to whether inspected or tested work complies with requirements of the Contract Documents.
10. Recommendations on retesting, if applicable.

1.4 RESPONSIBILITIES

A. Contractor Responsibilities: Except where they are specifically indicated as being the Owner's responsibility, or where they are to be provided by another identified entity, inspections, tests and similar quality control services are the Contractor's responsibility; these services also include those specified to be performed by an independent agency and not directly by the Contractor. Costs for these services shall be included in the Contract Sum. The Contractor shall employ and pay an independent agency, testing laboratory or other qualified firm to perform quality control services specified.

B. Retest Responsibility: Where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance of related Work with the requirements of the Contract Documents, then retests are the responsibility of the Contractor, regardless of whether the original test was the Contractor's responsibility. Retesting of work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original Work.

C. Responsibility for Associated Services: The Contractor is required to cooperate with the independent performing required inspections, tests and similar services. Provide such auxiliary services as are reasonably requested. Notify the testing agency sufficiently in advance of operations to permit assignment of personnel. These auxiliary services include but are not necessarily limited to the following:

1. Providing access to the work.
2. Taking samples or assistance with taking samples.
3. Delivery of Samples to test laboratories.
4. Delivery and protection of samples and test equipment at the project site.

D. Coordination: The Contractor and each independent agency engaged to perform inspections, tests and similar services for the project shall coordinate the sequence of their activities so as to accommodate required services with a minimum of delay in the progress of the Work. In addition, the Contractor and each independent testing agency shall coordinate their Work so as to avoid the necessity of removing and replacing Work to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections, tests, taking of samples and similar activities.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. Upon completion of inspection, testing, sample taking, and similar services performed on the Work, repair damaged work and restore substrates and finishes to eliminate deficiencies, including deficiencies in the visual qualities of exposed finishes. Comply with the Contract Document requirements for "Cutting and Patching". Protect Work exposed by or for quality control service activities and protect repaired work. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 014500

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

This section specifies administrative and procedural requirements for temporary services and facilities, including such items as temporary utility services, temporary construction and support facilities, and project security and protection.

A. Use Charges: No cost or usage charges for temporary services or facilities are chargeable to the Owner or Engineer. Cost or use charges for temporary services or facilities will not be accepted as a basis of claims for a change-order extra.

B. Temporary utility services required for use at the project site include but are not limited to the following:

1. Water service and distribution.
2. Temporary electric power and light.
3. Telephone service.
4. Storm and sanitary sewer.
5. Provide adequate utility capacity at each stage of construction. Prior to availability of temporary utilities at the site, provide trucked-in services for start-up of construction operations.
6. Obtain and pay for temporary easements required to bring temporary utilities to the project site, where the Owner's permanent easement cannot be utilized for that purpose.
7. High speed internet service.

C. Temporary construction and support facilities required for the project include but are not limited to the following:

1. Temporary heat.
2. Field offices and storage sheds.
3. Temporary roads and paving.
4. Sanitary facilities, including drinking water.
5. Dewatering facilities and drains.
6. Temporary enclosures.
7. Project identification, bulletin boards and signs.
8. Waste disposal services.
9. Construction aids and miscellaneous general services and facilities.
10. Alternate temporary services and facilities, equivalent to those specified, may be used, subject to acceptance by the Engineer.

D. Security and protection facilities and services required for the project include but are not limited to the following:

1. Environmental protection.
2. Alternate security and protection methods or facilities, equivalent to those specified, may be used, subject to acceptance by the Engineer.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-01 Specification sections, apply to the Work of this Section.

1.3 PROPERTY PROTECTION

A. Care is to be exercised by the Contractor in all phases of construction, to prevent damage and/or injury to the Owner's and/or other property. Payments for the repair and restoration are limited as set forth in the "Conflict with or Damage to Existing Utilities Facilities" of the Supplementary General Conditions.

B. All exposed existing piping must be immediately supported to prevent damage. Prior to completion of each day's work, such piping must be adequately covered by the Contractor and approved by the Owner's representative.

C. The Contractor shall avoid unnecessary injury to trees and shall remove only those authorized to be removed by written consent of the Owner. Fences, gates, and terrain damaged or disarranged by the Contractor's forces shall be immediately restored in their original condition or better.

1.4 CONSTRUCTION WARNING SIGNS

A. The Contractor shall provide construction warning signs for each location where he is working in the state highway right-of-way or in City or County streets. He will further provide flagmen as required and shall abide by all Department of Highways safety rules, including size, type and placement of construction signs. All signs shall be of professional quality.

1.5 ACCESS ROADWAYS

A. The Contractor shall construct all access roadways needed during construction, and the planned access roadways for the completed project. The Contractor shall maintain access roadways continuously during the construction period.

B. The Contractor shall maintain all existing roadways within the project site which are used for any purpose by his construction operations. The degree and frequency of maintenance shall be adequate to keep existing roadways in a condition at least equal to their condition prior to construction. Road maintenance shall include daily dust control and grading as necessary on all roads and sweeping of paved roads every other day.

1.6 RESPONSIBILITY FOR TRENCH SETTLEMENT

A. The Contractor shall be responsible for any settlement caused by the construction, that occurs within one year after the final acceptance of this Contract by the Owner. Repair of any damage caused by settlement shall meet the approval of the Owner.

1.7 WASTE DISPOSAL

A. The Contractor shall dispose of waste, including hazardous waste, off-site in accordance with all applicable laws and regulations.

1.8 CONTRACTOR'S TRAILERS AND MATERIAL STORAGE

A. The location of the Contractor's and Subcontractor's office and work trailers and parking areas on the project site shall be subject to the Owner's approval.

B. The location of the Contractor's and Subcontractor's material storage yards on the project site shall be subject to the Owner's approval.

1.9 QUALITY ASSURANCE

A. Regulations: Comply with requirements of local laws and regulations governing construction and local industry standards, in the installation and maintenance of temporary services and facilities, including but not limited to the following:

1. Obtain all permits as required by governing authorities.
2. Obtain and pay for temporary easements required across property other than that of Owner.
3. Comply with applicable codes.

    a. In addition, comply with "Environmental Impact" commitments the Owner or previous Owners of the site may have made to secure approval to proceed with construction of the project.

B. Inspections: Inspect and test each service before placing temporary utilities in use. Arrange for required inspections and tests by governing authorities and obtain required certifications and permits for use.

1.10 JOB CONDITIONS

A. General: Provide each temporary service and facility ready for use at each location when the service or facility is first needed to avoid delay in performance of the Work. Maintain, expand as required, and modify temporary services and facilities as needed throughout the progress of the Work. Do not remove until services or facilities are no longer needed or are replaced by the authorized use of completed permanent facilities.

With the establishment of the job progress schedule, establish a schedule for the implementation and termination of service for each temporary utility. At the earliest feasible time, and when acceptable to the Owner and Engineer, change over from the use of temporary utility service to the use of the permanent service, to enable removal of the temporary utility and to eliminate possible interference with completion of the Work.

B. Conditions of Use: Operate temporary services and facilities in a safe and efficient manner. Do not overload temporary services or facilities, and do not permit them to interfere with the

progress of the Work. Do not allow unsanitary conditions, public nuisances or hazardous conditions to develop or persist on the site.

1. Temporary Utilities: Do not permit the freezing of pipes, flooding or the contamination of water sources.
2. Temporary Construction and Support Facilities: Maintain temporary facilities in such a manner as to prevent discomfort to users. Take necessary fire prevention measures. Maintain temporary support facilities in a sanitary manner so as to avoid health problems and other deleterious effects.
3. Security and Protection: Maintain site security and protection facilities in a safe, lawful and publicly acceptable manner. Take necessary measures to prevent erosion of the site.

PART 2 - PRODUCTS

2.1 MATERIALS, EQUIPMENT AND SERVICES

A. General: Provide new materials and equipment for temporary services and facilities; used materials and equipment that are undamaged and in serviceable condition may be used, if acceptable to the Engineer. Provide only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards.

B. Temporary Electricity:

1. Provide temporary electrical service for construction needs, power to all construction trailers, and for lighting and heating facilities, throughout construction period.
2. Service shall be adequate for construction use by all trades during construction period.
3. Contractor shall make all necessary arrangements with the power company to obtain this service. He shall furnish, erect, and maintain the service pole, wires, main switch, panelboards, outlets, lights and metering facilities as required by the power company and as necessary to provide electrical service throughout the construction site.
4. Contractor shall be responsible for payment of all monthly billing charges for temporary electric power. Contractor shall pay costs of equipment, materials, furnishing, installing, maintenance and removal of temporary electric service facilities.
5. Contractor shall pay costs of equipment, furnishing, installing, maintenance and removal of temporary service facilities.
6. Maintenance of temporary electric service shall be the sole responsibility of the General Contractor.

C. Temporary Lighting:

1. Furnish and install temporary lighting required for:

    a. Construction needs.
    b. Safe and adequate working conditions.
    c. Public Safety.
    d. Security lighting.
    e. Temporary office and storage area lighting.

2. As each building is enclosed, temporary lighting shall be furnished to provide not less than ten (10) foot-candles in all areas.
3. Service Periods:

    a. Security lighting: All hours of darkness.
    b. Safety lighting:
    c. Within construction area: All times that authorized personnel are present.
    d. Public areas: At all times.

4. Costs of installation and operation: Contractor shall pay all installation, maintenance and removal costs of temporary lighting.
5. Maintenance of temporary lighting service (replacement of bulbs, etc.) shall be the sole responsibility of the General Contractor.

D. Temporary Heating and Ventilating

1. Furnish and install temporary heat and ventilation in enclosed areas throughout construction period required to:

    a. Facilitate progress of work.
    b. Protect work and products against dampness and cold.
    c. Prevent moisture condensation on surfaces.
    d. Provide suitable ambient temperatures and humidity levels for installation and curing of materials.
    e. Provide adequate ventilation to meet health regulations for safe working environment.
    f. Heat and ventilate temporary field offices for Contractor and for Engineer, and other storage and construction buildings.
    g. Allow beneficial occupancy of project, or portion of project, prior to final completion, including air conditioning.

2. Temperatures required in buildings:

    a. Generally, 24 hours a day: Minimum 40 degrees F (4.5 degrees C.).
    b. 24 hours a day during placing, setting and curing of cementitious materials: As required by specification section for each product.
    c. 24 hours a day, 7 days prior to, and during, placing of interior finishes; woodwork, flooring, painting and finishing: As required by specification section for each product.
    d. 24 hours a day after application of finishes, and until Substantial Completion: Minimum 70 degrees F (21 degrees C.).
    e. Storage areas: As required by Specification Section for each product.

3. Ventilation Required:

    a. General: Prevent hazardous accumulations of dusts, fumes, mists, vapors or gases in areas occupied during construction.
    b. Provide local exhaust ventilation to prevent harmful dispersal of hazardous substances into atmosphere of occupied areas.

c. Dispose of exhaust materials in a manner that will not result in harmful exposure to persons.
d. Ventilate storage spaces containing hazardous or volatile materials.
e. Provide adequate ventilation for:

1) Curing installed materials.
2) Dispersal of humidity.
3) Ventilation of temporary sanitary facilities.

f. Duration of operation:

1) At all times personnel occupies an area subject to hazardous accumulations of harmful elements.
2) Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful elements.
3) For curing installed materials: As required by specification section for respective materials.
4) For humidity dispersal: As needed to provide suitable ambient conditions for work.

4. Contractor shall pay costs of installation, operation, maintenance and removal of temporary heat and ventilation.

E. Temporary Telephone and Fax Service:

1. Furnish and install temporary telephone service for construction needs throughout construction periods.
2. Pay costs for temporary telephone service including installation, maintenance, and removal.
3. Pay service costs for all local telephone service.
4. Pay costs of toll charges related to construction of the Project.
5. Do not use Owner's existing telephone system.

F. Temporary Water:

1. Contractor shall make his own arrangements at his own expense for obtaining the water supply necessary for construction purposes.
2. Contractor shall pay costs of the furnishing, maintaining and removing all temporary water service equipment, fixtures, hose, piping, etc.

G. Protection and Security:

1. Provide barricades, lanterns and other such signs and signals as may be necessary to warn of the dangers in connection with open excavation and obstructions.
2. Provide an adequate and approved system to secure the project area at all times, especially during non-construction periods; General Contractor shall be solely responsible for taking proper security measures.
3. Contractor shall pay all costs for protection and security systems.

H. Sanitary Facilities:

1. The Contractor shall furnish, install and maintain ample sanitary facilities for the workmen. As the needs arise, enclosed temporary toilets, in sufficient number, shall be placed as directed by the Engineer. Permanent toilets installed under this Contract shall not be used during construction. Drinking water shall be provided from a proven safe source so piped or transported as to be kept clean and fresh and served from single service containers of satisfactory types.

I. Temporary Protection:

1. Temporary Enclosures:

a. Furnish and install temporary enclosures at doorways, windows and other openings in exterior walls, as necessitated by weather and other conditions, and when required for the progress of the Work. Temporary doors shall be substantially built and hung, equipped with proper hinges, locks and other necessary hardware and shall be removed and reset whenever required to accommodate the work of other trades requiring their removal. All enclosures shall be maintained in good repair and removed when no longer needed. Door and window frames and sills shall be protected as necessary to prevent damage to items during construction.

2. Temporary Covering:

a. Provide substantial temporary wood covering over all floor openings for ducts, shafts, equipment, etc., using rough planking at least 2 inches thick, cleated together and made sufficiently strong and put in place wherever required.

3. Temporary Railing:

a. Temporary railing shall be provided on stairs and around wells, pits and other locations where needed, to prevent accidents or injury to persons.

J. Project Sign:

1. The Contractor shall provide sign(s), as detailed hereinafter, near the site of the work. The sign(s) shall set forth the description of the work and the names of the Owner, Engineer, and Contractor, and other information as required.
2. The sign shall be constructed of 3/4-inch-thick APA A-B Exterior grade or marine plywood. Posts shall be 4 inches by 4 inches of fencing type material. Prime all wood with white primer.
3. The sign shall be maintained in good condition until completion of the project.

K. Contractor's Field Office:

1. Each Contractor shall establish and maintain a field office on their project and have available at the office a responsible representative who can officially receive instructions from the Engineer. The Contractor's Field Office shall be provided in accordance with Section 015213.

L. Resident Project Representative's Field Office:

1. The Contractor shall furnish and maintain a field office for the exclusive use of the Resident Project Representative at a location designated by the Engineer and shall be in accordance with the requirements of Section 015213.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Use qualified tradesmen for installation of temporary services and facilities. Locate temporary services and facilities where they will serve the entire project adequately and result in minimum interference with the performance of the Work.

B. Relocate, modify and extend services and facilities as required during the course of work so as to accommodate the entire work of the Project.

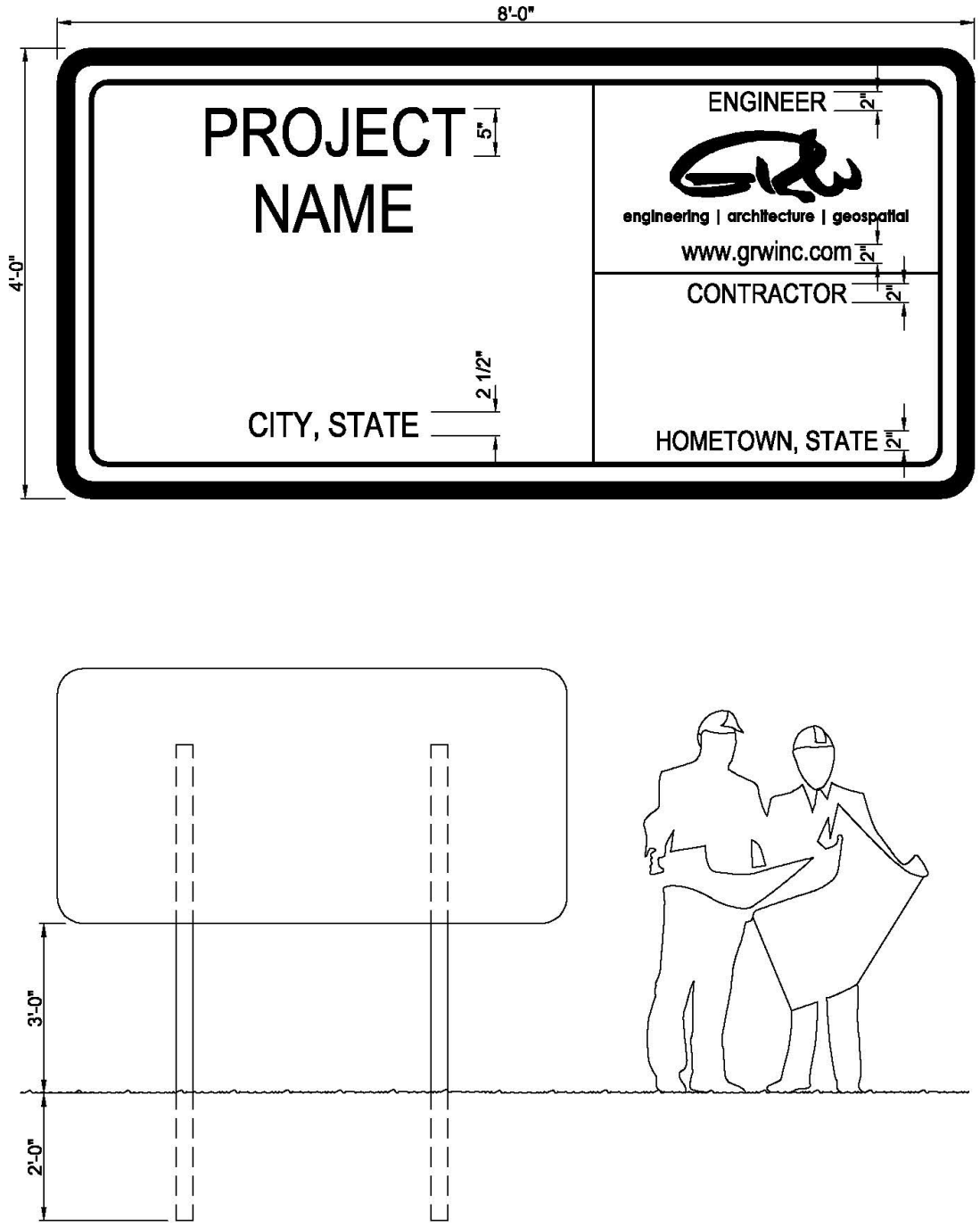
3.2 REMOVAL

A. Completely remove temporary materials, equipment, and offices upon completion of construction.

B. Repair damage caused by installation and restore to specified or original condition.

END OF SECTION 015000

Figure 1: Typical Project Sign



SECTION 017329 – CUTTING AND PATCHING

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Definition: Cutting and patching includes cutting into existing construction to provide for the installation or performance of other Work and subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting and patching is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes upon written instructions of the Engineer.

C. Cutting and patching is performed during the manufacture of products, or during the initial fabrication. Erection or installation processes are not considered to be cutting and patching under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be cutting and patching.

D. Cutting and Patching includes removal and replacement of Work not conforming to requirements of the Contract Documents, removal and replacement of defective Work, and uncovering Work to provide for installation of ill-timed Work.

E. No Work shall be endangered by cutting or altering Work or any part of it.

1.2 RELATED DOCUMENTS

A. Drawing and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specification sections, apply to Work of this Section.

1.3 SUBMITTALS

A. Prior to cutting which affects structural safety of Project, submit written notice to the Engineer, requesting consent to proceed with cutting, including:

1. Identification of Project.
2. Description of affected work.
3. Necessity for cutting.
4. Effect on structural integrity of Project.
5. Description of proposed work. Designate:

    a. Scope of cutting and patching.
    b. Trades to execute work.
    c. Products proposed to be used.
    d. Extent of refinishing.

6. Alternatives to cutting and patching.

B. Should conditions of work, or schedule, indicate change of materials or methods, submit written recommendation to the Engineer, including:

1. Conditions indicating change.
2. Recommendations for alternative materials or methods.
3. Submittals as required for Substitutions.

C. Submit written notice to the Engineer, designating time Work will be uncovered, to provide for observation.

1.4 QUALITY ASSURANCE

A. Requirements for Structural Work: Do not cut and patch structural Work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratio.

B. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased energy.

PART 2 - PRODUCTS

2.1 MATERIALS

A. For replacement of work removed, comply with Specifications for type of work to be done.

PART 3 - EXECUTION

3.1 INSPECTION

A. Before cutting, examine the surfaces to be cut and patched and the conditions under which the Work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the Work.

3.2 PREPARATION

A. Temporary Support: To prevent failure, provide temporary support of Work to be cut. Provide shoring, bracing and support as required to maintain structural integrity of project.

B. Protection: Protect other Work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas. Take precautions not to cut existing pipe, conduit or duct serving the building but scheduled to be relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

A. General: Employ skilled workmen to perform cutting and patching Work. Except as otherwise indicated or as approved by the Engineer, proceed with cutting and patching at the earliest feasible time and complete Work without delay.

B. Cutting: Cut the Work using methods that are least likely to damage work to be retained or adjoining Work. Where possible, review proposed procedures with the original installer; comply with original installer's recommendations.

1. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
2. Comply with requirements of applicable sections of Division 02 where cutting and patching requires excavating and backfilling.
3. Bypass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned. Cut-off conduit and pipe in wall or partitions to be removed. After by-pass and cutting, cap, valve or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.

C. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the Work.

1. Where feasible, inspect and test patched areas to demonstrate integrity of work.
2. Restore exposed finishes of patched areas and where necessary, extend finish restoration into retained adjoining Work in a manner which will eliminate evidence of patching and refinishing.
3. Execute fittings and adjustment of products to provide finished installations to comply with specified tolerances.
4. Restore work which has been cut or removed; install new products to provide completed work in accord with requirements of Contract Documents.
5. Refinish entire surfaces as necessary to provide an even finish.

    a. Continuous Surfaces: To nearest intersection.
    b. Assembly: Entire refinishing.

3.4 CLEANING

A. Thoroughly clean areas and spaces where Work is performed or used as access to work. Remove completely point, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 017329

SECTION 017400 – CLEANING

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Maintain premises free from accumulations of waste, debris, and rubbish.

B. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces. Leave project clean and ready for occupancy.

1.2 RELATED DOCUMENTS

A.	Cutting and Patching	Section 017329.
B.	Project Closeout:	Section 017700.
C.	Cleaning for Specific Products of Work:	Specification Section for that work.

1.3 SAFETY REQUIREMENTS

A. Hazards Control:

1. Store volatile wastes in covered metal containers and remove from premises daily.
2. Prevent accumulation of wastes which create hazardous conditions.
3. Provide adequate ventilation during use of violative noxious substances.

B. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on project site.
2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
3. Do not dispose of wastes into streams or waterways.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

A. Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish.

B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

C. At reasonable intervals during progress of work, clean site and public properties, and dispose of waste materials, debris and rubbish.

D. Provide on-site containers for collection of waste materials, debris and rubbish.

E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.2 FINAL CLEANING

A. Employ experienced workmen, or professional cleaners, for final cleaning.

B. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.

C. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials, from sight-exposed interior or exterior finished surfaces; polish surfaces so designated to shine finish.

D. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

E. Broom clean paved surfaces; rake clean other surfaces of grounds.

F. Maintain cleaning until project, or portion thereof, is occupied by Owner.

END OF SECTION 017400

SECTION 017700 – PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

A. Liquidated Damages: Supplemental General Conditions

B. Cleaning: Section 017400.

C. Project Record Documents: Section 017839.

1.2 SUBSTANTIAL COMPLETION

A. In order to initiate project closeout procedures, the Contractor shall submit the following:

1. Written certification to Engineer that project is Substantially Complete.
2. List of major items to be completed or corrected.

B. Engineer will make an inspection within 7 days after receipt of certification, together with Owner's Representative.

C. Should Engineer consider that work is Substantially Complete:

1. Contractor shall prepare, and submit to Engineer, a list of items to be completed or corrected, as determined by the inspection.
2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:

a. Date of Substantial Completion.
b. Contractor's list of items to be completed or corrected, verified and amended by Engineer.
c. The time within which Contractor shall complete or correct work of listed items.
d. Time and date Owner will assume possession of work or designated portion thereof.
e. Responsibilities of Owner and Contractor for:

1) Insurance
2) Utilities
3) Operation of Mechanical, Electrical, and Other Systems.
4) Maintenance and Cleaning.
5) Security.

f. Signatures of:

1) Engineer
2) Contractor
3) Owner

3. Owner occupancy of Project or Designated Portion of Project:

   a. Contractor shall:

      1) Obtain certificate of occupancy.
      2) Perform final cleaning in accordance with Section 017400.

   b. Owner will occupy Project, under provisions stated in Certificates of Substantial Completion.

4. Contractor: Complete work listed for completion or correction, within designated time.

D. Should Engineer consider that work is not Substantially Complete:

1. He shall immediately notify Contractor, in writing, stating reasons.
2. Contractor: Complete work, and send second written Engineer, certifying that Project, or designated portion of Project is substantially complete.
3. Engineer will reinspect work.

E. Should Engineer consider that work is still not finally complete:

1. He shall notify Contractor, in writing, stating reasons.
2. Contractor shall take immediate steps to remedy the stated deficiencies and send third written notice to the Engineer certifying that the work is complete.
3. Engineer and Owner will reinspect work at Contractor's expense.

1.3 FINAL INSPECTION

A. Contractor shall submit written certification that:

1. Contract Documents have been reviewed.
2. Project has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
5. Project is completed, and ready for final inspection.

B. Engineer will make final inspection within seven days after receipt of certification.

C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, Engineer shall request Contractor to make Project Closeout submittals.

D. Should Engineer consider that work is not finally complete:

1. He shall notify Contractor in writing, stating reasons.
2. Contractor shall take immediate steps to remedy the stated deficiencies and send second written notice to Engineer certifying that work is complete.
3. Engineer will reinspect work.

1.4 CLOSEOUT SUBMITTALS

A. Project Record Documents: To requirements of Section 017839.

B. Guarantees, Warranties and Bonds: To requirements of particular technical Specifications and Section 017834.

1.5 INSTRUCTION

A. Instruct Owner's personnel in operation of all systems, mechanical, electrical, and other equipment.

1.6 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit final applications in accordance with requirements of General Conditions.

1.7 FINAL CERTIFICATE FOR PAYMENT

A. Engineer will issue final certificate in accordance with provisions of general conditions.

B. Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Semi-Final Certificate for Payment.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017700

SECTION 017823 – OPERATIONS AND MAINTENANCE MANUALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Compile product data and related information appropriate for Owner's maintenance and operation of equipment furnished under the Contract. Prepare operating and maintenance data as specified.

B. In addition to maintenance and operations data, the manufacturer's printed recommended installation practice shall also be included. If not part of the operations and maintenance manual, separate written installation instructions shall be provided, serving to assist the Contractor in equipment installation.

C. Related requirements specified elsewhere:

1.	Shop Drawings, Product Data and Samples:	Section 013323
2.	Project Closeout:	Section 017700
3.	Project Record Documents:	Section 017839
4.	Warranties and Bonds:	Section 017834

1.2 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of the described products.
2. Completely familiar with requirements of this Section.
3. Skilled as a technical writer to the extent required to communicate essential data.
4. Skilled as a draftsman competent to prepare required drawings.

1.3 SUBMITTAL SCHEDULE

A. Submit one printed copy of operation and maintenance data for each item of equipment prior to 80 percent completion of the Contract. Binder is not required for Preliminary submittals. Digital submittal is **NOT** required for preliminary review.

B. Upon approval of **ALL** O&M submittal items, the complete manual shall be assembled as described in the following sections.

C. The complete, assembled Operation and Maintenance Manual shall be submitted 10 days prior to final inspection or acceptance to the Owner. Provide a total of two hard copies and one digital copy of the complete manual. Do not submit individual equipment items as final O&M manuals. The final submittal shall be the COMPLETE assembled manual, with a master table of contents included.

1.4 FORM OF SUBMITTALS

A. Format: Preliminary submittals may be made of each individual item of equipment. The final O & M Manual shall be assembled by combining the individual equipment submittals in one or more 3-ring binder(s). Large equipment operating and maintenance instructions may be contained in their individual binder(s). Smaller O&M instructions shall be assembled in a binder, with the sections separated by a tabbed divider page, and a table of contents.

1. Size: 8.5 inches by 11 inches.
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten.
4. Photocopies must be clear and legible.
5. Drawings:

    a. Provide reinforced punched binder tab, bind in with text.
    b. Fold large drawings to the size of the text pages where feasible.
    c. For flow or piping diagrams that cannot be detailed on the standard size drawings, a larger, appropriate size drawing may be submitted and supplied in a properly marked map packet.

6. Provide fly-leaf for each separate product, or each piece of operating equipment.

    a. Provide typed description of product, and major component parts of equipment.
    b. Provide indexed tabs.

7. Cover: Identify each volume with types or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:

    a. Title of Project.
    b. Identity of separate structure as applicable.
    c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality, durable and cleanable, three-ring binders, with oil and moisture resistant hard covers.
3. Imprinted on the front cover and side of each binder shall be the name of the treatment plant or project, the Contract Number and the title of equipment.
4. Binders shall be new and not recycled from a prior data manual.

1.5 CONTENTS OF MANUAL

A. Table of Contents: Each item shall be placed in a logical sequential order, according to the operating process of the facility as shown on the Hydraulic Profile in the Contract Drawings.

B. Content, for each unit of equipment and system, as appropriate:

1. Process Description: Detailed description of the process and operation functions as applicable.

2. Component Instructions: Instructions for all components of the equipment whether manufactured by the supplier or not, including valves, controllers and other miscellaneous components.

3. Component Data: Description of unit and component parts.

    a. Function, normal operating characteristics, and limiting conditions.
    b. Performance curves, engineering data and tests.
    c. Complete nomenclature and commercial number of all replaceable parts.
    d. Exploded and/or sectional drawing views.
    e. Piping diagrams numbered to correspond to the installation.
    f. Equipment model number and serial number.

4. Control and Wiring Diagrams:

    a. Internal and external wiring diagrams numbered to correspond to the installation.
    b. Control circuit diagrams
    c. One-line diagrams
    d. P&ID drawings
    e. As-installed control diagrams by controls supplier.

5. Operating procedures:

    a. Startup, break-in, routine and normal operating instructions.
    b. Regulation, control, stopping, shutdown and emergency instructions.
    c. Summer and winter operating instructions.
    d. Special operating instructions.
    e. Description of sequence of operation by control supplier.

6. Maintenance Procedures:

    a. Routine operations.
    b. Guide to "trouble-shooting".
    c. Disassembly, repair and reassembly.
    d. Alignment, adjusting and checking.
    e. Equipment parts list.
    f. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.

        1) Predicted life of parts subject to wear.

    g. Local service center.

7. Lubrication and Service schedule.

    a. Preventative maintenance schedule.
    b. Component lubrication and servicing interval schedule.
    c. List of lubricants and/or filters required.
    d. Lubrication and servicing procedures.

8. Recommended spare parts list and quantities.

9. Guide to "trouble-shooting".
10. Plant specific instructions:

    a. Each Contractor's coordination drawings.
    b. As-installed color-coded piping diagrams.
    c. Detailed specific "Sequence of Operation" for the constructed plant or project.
    d. Charts of valve tag numbers, if appropriate, with the location and function of each valve.

11. Plant specific startup and shut-down procedures.
12. Detailed instructions for emergency operation
13. Other data as required under pertinent sections of Specifications.

C. Content, for each electrical system, as appropriate:

1. Description of system and component parts.

    a. Function, normal operating characteristics, and limiting conditions.
    b. Performance curves, engineering data and tests.
    c. Complete nomenclature and commercial number of replacement parts.

2. Circuit directories of panel boards.

    a. Electrical service.
    b. Controls.
    c. Communications.

3. As-installed color-coded wiring diagrams.
4. Operating procedures:

    a. Routine and normal operating instructions.
    b. Sequences required.
    c. Special operating instructions.

5. Maintenance procedures:

    a. Routine operations.
    b. Guide to "trouble-shooting".
    c. Disassembly, repair and reassembly.
    d. Adjustment and checking.

6. Manufacturer's printed operating and maintenance instructions.
7. List of original manufacturer's recommended spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.

D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.

E. Additional requirements for operating and maintenance data: The respective section of Specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017823

Manufacturer Submittals / Operation and Maintenance Manual Review Guide

Project Name:
Project Number:

Spec Section	Equipment Items	Initial Submittal Date	Format/Binder/TOC	Manufacturer Date	Process Description	Component Instructions	Operating Procedures	Maintenance	Lubrication Schedule	Plant Specific	Parts List	Spare Parts List	Troubleshooting Guide	Startup/Shutdown	Emergency Operation	Control Diagrams	Model/Serial Number	Notes

SECTION 017834 – WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Compile specified warranties and bonds.

B. Compile specified service and maintenance contracts.

C. Co-execute submittals when so specified.

D. Review submittals to verify compliance with Contract Documents.

E. Submit to Engineer for review and transmittal to Owner. **Comply with provisions of Section 013323.**

1.2 RELATED DOCUMENTS

A. Bid Bond: Instructions to Bidders.

B. Performance and Payment Bonds: General Conditions and Supplemental General Conditions.

C. Guaranty: General Conditions and Supplemental General Conditions.

D. General Warranty of Construction: General Conditions.

E. Project Closeout: Section 017700.

F. Warranties and Bonds required for specific products: As listed in technical specifications in these Contract Documents herein.

G. Provisions of Warranties and Bonds, Duration: Respective specification sections for particular products.

1.3 SUBMITTALS REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.

B. Furnish two original signed copies.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product, equipment or work item.
2. Firm name, address and telephone number.

3. Scope
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service and maintenance contract.
6. Provide information for Owner's personnel:

    a. Proper procedure in case of failure.
    b. Instances which might affect the validity of warranty or bond.

7. Contractor name, address and telephone number.

1.4 FORM OF SUBMITTALS

A. Prepare in duplicate packets.

B. Format:

1. Size 8.5 inches by 11 inches, punch sheets for three-ring binder.

    a. Fold larger sheets to fit into binders.

2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS." List:

    a. Title of Project
    b. Name of Contractor

C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.

1.5 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put into service during progress of construction:

1. Submit documents within 10 days after inspection and acceptance.

B. Otherwise make submittals within 10 days after date of substantial completion, prior to final request for payment.

C. For items of work, where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within 10 days after acceptance, listing the date of acceptance as the start of the warranty period.

1.6 SUBMITTALS REQUIRED

A. Submit warranties, bonds, service and maintenance contracts as specified in the respective sections of the Specifications.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017834

SECTION 017839 – PROJECT RECORD DOCUMENTS - WATER

PART 1 – GENERAL

1.1 MAINTENANCE OF DOCUMENTS

A. Maintain at job site, one copy of:

1. Contract Drawings
2. Specifications
3. Addenda
4. Reviewed Shop Drawings
5. Change Orders
6. Other Modifications to Contract

B. Store documents in approved location, apart from documents used for construction.

C. Provide files and racks for storage of documents.

D. Maintain documents in clean, dry, legible condition.

E. Do not use record documents for construction purposes.

F. Make documents available at all times for inspection by Engineer and Owner.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Shop Drawings, Product Data, and Samples: Section 013323.

1.3 MARKING DEVICES

A. Provide colored pencil or felt-tip marking pen for all marking.

1.4 RECORDING

A. Label each document "PROJECT RECORD" in 2-inch high printed letters.

B. Keep record documents current.

C. Do not permanently conceal any work until required information has been recorded.

D. Contract Drawings: Legibly mark to record actual construction:

1. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.

2. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
3. Field changes of dimension and detail.
4. Changes made by Change Order or Field Order.
5. Details not on original Contract Drawings.

E. Specifications and Addenda: Legibly mark up each section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
2. Changes made by Change Order or Field Order.
3. Other matters not originally specified.

F. Shop Drawings: Maintain as record documents; legibly annotate shop drawings to record changes made after review. Coordinate and confirm with Engineer that electronic versions of all shop drawings have been provided to Engineer.

1.5 SUBMITTALS

A. At completion of project, deliver record documents to Engineer.

B. Accompany submittal with transmittal letter, in duplicate, containing:

1. Date.
2. Project Title and Number.
3. Contractor's Name and Address.
4. Title and Number of each Record Document.
5. Certification that each Document as Submitted is Complete and Accurate.
6. Signature of Contractor, or Their Authorized Representative.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 017839

DIVISION 03

CONCRETE

SECTION 034000 – PRECAST CONCRETE STRUCTURES

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to furnish and install all precast concrete structures and accessories appurtenances as shown on the Drawings and specified herein.

B. Delegated Design: Design precast concrete structures, including comprehensive engineering analysis by a qualified Professional Engineer, licensed in the state in which the project using performance requirements and design criteria indicated.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Cast-in-Place Concrete: Section 033100

B. Access Hatches: Section 083110

1.3 SUBMITTALS

The Contractor shall submit the following data for Engineer's review in accordance with Section 013323.

A. Delegated Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data, calculations, and erection drawings signed and sealed by the qualified Professional Engineer responsible for their preparation.

B. Product Data: For each type of product indicated included but not limited to standard precast units, proprietary precast units, embedded items, and accessories.

C. Design Data: Submit calculations prepared under the direct supervision of a Professional Engineer supporting the structural design, including resistance to buoyancy with groundwater table to the top of the structure, resistance to uplift and resistance to wheel loads in accordance with requirements and references indicated. The calculations shall be sealed by a Professional Engineer licensed in the state in which the project is located.

D. Test Reports: Submit test reports for the following:

1. Material certifications and/or laboratory test reports, including mill tests and all other test data, for Portland cement, blended cement, pozzolans, ground granulated blast furnace slag, silica fume, aggregate, admixtures, and curing compound proposed for use on this Project.
2. Test reports showing that the mix has been successfully tested to produce concrete with the properties specified and will be suitable for the job conditions. Such tests may include compressive strength, flexural strength, plastic or hardened air content, freeze thaw

durability, abrasion and absorption. Clearly detail in the specifications special tests for precast concrete or cast-in items.

3. Sufficient documentation, when the use of self-consolidating concrete (SCC) is proposed, showing a minimum of 30-days production track records demonstrating that SCC is appropriate for casting of the product.
4. In-plant QA/QC inspection reports, upon the request of the Project Representative.

E. Shop Drawings: Submit shop drawings for standard precast units and custom-made precast units prepared under direct supervision of a Professional Engineer licensed in the state in which the project is located. Shop drawings shall include:

1. The criteria and loads used in the design of the precast components.
2. All materials used, their specifications and their design strengths.
3. Layout, piece mark, dimensions, reinforcing, and connection details of each precast member, including openings.
4. Details and instructions for lifting, rigging, erection, and installation of each precast component.
5. Lists and descriptions of all loose accessory materials supplied.
6. Instructions on secondary pours (in the field) when required.
7. Professional Engineer's seal.

F. Quality Control Procedures: Submit certificate from the NPCA QC Manual that the precast concrete structure manufacturer participates in their QA/QC program.

G. Manufacturer's Instructions.

1.4 QUALITY ASSURANCE

A. Manufacturer of precast concrete structures shall be quality certified by NCPA. Inspect manufacture of structures in accordance with ASTM C1037.

B. Installer of precast concrete structures shall have a record of at least three years of successful installation of similar products on similar projects.

C. Inspection of earthwork, compaction and backfill shall be in accordance with the earthwork specifications in Division 31.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver precast units to the site in accordance with the delivery schedule to avoid excessive build-up of units in storage at the site. Upon delivery to the jobsite, all precast concrete units will be inspected by the Project Representative for quality and final acceptance.

B. Store units off the ground or in a manner that will minimize potential damage.

C. Handle, transport, and store products in a manner to minimize damage. Lifting devices or holes shall be consistent with industry standards. Perform lifting with methods or devices intended for this purpose as indicated on Shop Drawings.

PART 2 - PRODUCTS

2.1 PRECAST CONCRETE STRUCTURES

A. Circular precast vaults and structures shall conform to ASTM C478. Non-circular vaults and structures shall conform to ASTM C857. Access hatch and pipe penetrations shall be cast in the top slab and/or sides as indicated on the drawings.

B. Manhole frames and covers shall have a clear opening of 22 inches and shall be made of cast iron conforming to ASTM A48/A48M Class 30. Casting shall be smooth, clean and free from blisters, blowholes and shrinkage. Castings shall be dipped twice in a preparation of asphalt or coal tar and oil applied at a temperature of not less than 144 degrees F and not more than 155 degrees F so as to form a tenacious coating.

C. Structural design of precast concrete structures is hereby delegated.

D. All precast concrete structures shall be designed to resist the lateral soil pressures and fluid pressures in accordance with ASTM C857.

E. All precast concrete structures have integral flanges at the base to engage enough soil resistance to resist the buoyant force from full submergence.

F. All precast concrete structures shall be designed to support HL-93 or HS25-44 wheel loads in accordance with the AASTHO HB-17 anywhere on the top surface of the structure.

G. Joints: Joints shall be watertight and shall be sealed with one of the following:

1. Rubber gaskets conforming to ASTM C443.
2. Pre-formed flexible butyl type joint sealant conforming to AASHTO M198.

    a. Hamilton Kent "Kent Seal No. 2"
    b. K.T. Snyder Company "Rub'r Nek"
    c. Press Seal Gasket "E Z Stik"
    d. Concrete Sealants, Inc. "ConSeal"

H. Corrosion Control: Follow recommendations outlined in ACPA 01-110 when hydrogen sulfide is indicated as a potential problem.

I. External Rubber Wrap:

1. Each precast concrete structure joint shall be sealed with an external rubber wrap as manufactured by Sealing Systems, Inc., or equal. The wrap shall be made of a Stretchable, Self-Shrinking, IntraCuring Halogenated Based Rubber with a minimum thickness of 30 mils. The back side of each unit shall be coated with a cross-linked re-enforced butyl adhesive. The butyl adhesive shall be non-hardening sealant, with a minimum thickness of 30 mils. The wrap shall be designed to stretch around the substrate then overlapped creating a cross-link and fused bond between the rubber and butyl adhesive. The application shall form a continuous rubber seal that applies inward pressure on the protected area for the life of the application. The butyl adhesive and the

inward pressure exerted on the substrate will prevent the intrusion of water and soil through the joint sections of a manhole.

External Rubber Wrap Specifications

Height	9 inches
Length	16 or 50 foot rolls
Thickness	60 mils
Height tolerances	9 inches +/- .188"
Length tolerances	+/- 3"
Rubber Thickness tolerances	30 mils
Butyl Adhesive Thickness	30 mils

Stretchable, Self-Shrinking, Intra-Curing Halogenated Based Rubber

Physical Properties	ASTM Test Method	Typical Value
Sheer Strength	D816	20 lb. PSI min
Tensile, PSI	D412	50 PSI
Elongation %	D412	500%
Penetration	D217	60/140 MM
Low Temperature	D746	Minus 49º F flexibility
Heat Aging	D573 7 days @ 90 degrees C	
Tensile Strength	minimum, PSI (MPa) > 100 PSI	Pass
Fusion	5/64" (0.2) max	Pass
Elongation %	minimum 300% at break	Pass
Ozone Resistance	no visible signs of cracking	Pass
Aging and Storage	300% elongation applied (10 Years)	Pass
UV Resistance	No visible signs of cracking	Pass

PART 3 - EXECUTION

3.1 FABRICATION

A. Fabricate precast concrete structures in accordance with NPCA QC Manual.

3.2 INSTALLATION

A. Install precast concrete structures in accordance with ASTM C891 and the manufacturer's instructions.

B. Lift precast components at designated lifting points in accordance with the manufacturer's instructions and other applicable safety standards.

C. Precast concrete structures shall bear on a minimum 4-inches-thick bedding / base / drainage course of free-draining granular material. See Division 31 for bedding / base / drainage course materials.

D. Do not bear precast concrete structures on uneven subgrade or grade with high points from rock pinnacles or boulders or rock ledges.

E. Install precast concrete structures in proper location, with the proper alignment and level.

F. Backfill around the precast concrete structures in accordance with Division 31 specifications.

3.3 JOINTS

A. Joints shall be sealed with an approved sealant as specified in Part 2 and shall be mortared or grouted.

B. When making joints with mastic compound prime and seal all joints with primer supplied with the joint compound.

C. Joints shall be watertight.

D. Pipe Connections into Precast Structures:

1. Precast Openings:

   a. Pipe shall be sealed in the precast section pipe opening with a resilient connector meeting the requirements of ASTM C923. Resilient connector shall be "Dura-Seal III" by Dura-Tech, Dayton, Ohio; "A-Lok" by A-LOK Products, Inc.; or approved equal.
   b. Resilient connector shall be cast integrally into the wall of the precast section at the time of manufacture. There shall be no mortar placed around the connector on the outside of the manhole and no mortar shall be placed around the top half of the connector on the inside of the manhole when completing the invert work.

2. Cored Openings:

   a. Pipe shall be sealed in cored precast section pipe opening with a resilient mechanical connector meeting the requirements of ASTM C923. Resilient connector shall be "NPC Kor-N-Seal I" (with stainless steel wedge) by Trelleborg Pipe Seals Milford, Inc.; "PSX: Direct Drive" by Press-Seal Gasket Corporations; interlocking link pipe seal; or approved equal. All fasteners and hardware shall be Type 304 stainless steel.
   b. There shall be no mortar placed around the connector on the outside of the structure and no mortar shall be placed around the top half of the connector on the inside of the structure when completing the invert work.

3.4 LEAKAGE TESTING

A. Leakage tests shall be made and observed by the Project Representative's representative for all precast structures. The test shall be the watertightness (exfiltration) test as described herein.

B. After each structure has been assembled in place, including wall piping, all lifting holds shall be filled with an approved non-shrink, non-metallic grout. Upon completion, each precast structure shall be tested to determine watertightness. The leakage test shall be made prior to placing any fill material and prior to application of interior/exterior wall coatings if specified. If the groundwater table has been allowed to rise above the bottom of the structure, it shall be lowered for the duration of the test. All pipes and other openings into the structures shall be suitably plugged and the plugs braced to prevent blow out.

C. The tank shall be filled with potable water to the maximum level. The test shall consist of measuring the liquid level over the next 24 hours to determine if any change has occurred. If a change is observed and exceeds the maximum allowance, the test shall be extended to a total of five days. If at the end of five days the average daily change has not exceeded the maximum allowance, the test shall be considered satisfactory.

D. The liquid volume loss for a period of 24 hours shall not exceed one-twentieth of one percent of the tank capacity, 0.0005 x tank volume. If the liquid volume loss exceeds this amount, it shall be considered excessive, and the tank shall be repaired and retested.

E. Damp spots will not be permitted at any location on the structure wall. Damp spots are defined as spots where moisture can be picked up on a dry hand. All such areas shall be repaired as necessary.

F. Damp spots or standing water on the footing may occur upon tank filling and are permissible within the allowable volume loss. Measurable flow in this area is not permissible and must be corrected.

G. It shall be the Contractor's responsibility to uncover the structure as necessary and to disassemble, reconstruct, or replace it as directed by the Project Representative. The structure shall then be retested.

H. No adjustment in the leakage allowance will be made for unknown causes such as leaking plugs, absorptions, etc. It will be assumed that all loss of water during the test is a result of leaks through the joints or through the concrete. Furthermore, the Contractor shall take any steps necessary to assure the Project Representative that the water table is below the bottom of the structure throughout the test.

3.5 CLEAN UP

A. Upon completion of installation of the precast structures and appurtenances, the Contactor shall remove all debris and surplus construction materials resulting from the Work. The Contractor shall grade the ground around and adjacent to the construction area in a uniform and neat manner to the final grade lines.

END OF SECTION 034000

DIVISION 31

EARTHWORK

SECTION 312000 – EARTHWORK

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all materials, labor, equipment and services necessary to do all clearing and grubbing, excavation, backfilling, additional fill material and topsoil, control of surface drainage and ground water, finished site grading and erosion control required to construct the work as shown.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. State and local code requirements shall control the disposal of trees and shrubs.

B. All burning shall be controlled by applicable local regulations.

C. Excavation Support and Protection: Section 315000

D. Erosion and Sedimentation Control: Section 312502

1.3 JOB CONDITIONS

A. Weather: Earthwork operations shall be suspended at any time when satisfactory results cannot be obtained on account of rain, snow, ice, drought or other adverse weather conditions.

B. Existing Utilities: Prior to commencement of work, the Contractor shall locate existing underground utilities in areas of the work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

C. Use of Explosives: The Contractor (or any of their subcontractors) shall not bring explosives onto site or use in work without prior written permission from the Owner. All activities involving explosives shall be in compliance with the rules and regulations of the State Department of Mines and Minerals, Division of Explosives and Blasting. Contractor is solely responsible for handling, storage, and use of explosive materials when their use is permitted.

D. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work and post with warning lights.

a. Operate warning lights as recommended by authorities having jurisdiction.
b. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

E. Dust Control: Use all means necessary to control dust on or near the project site where such dust is caused by the Contractor's operations or directly results from conditions left by the Contractor.

1.4 UTILITY LINE ACTIVITIES COVERED UNDER NATIONWIDE PERMIT # 12

All activities involving utility line construction covered under NATIONWIDE PERMIT # 12 shall meet the following conditions:

A. The general Water Quality Certification is limited to the crossing of intermittent and perennial streams by utility lines.

B. The construction of permanent or temporary access roads will impact less than 300 linear feet of intermittent and perennial streams and less than one acre of jurisdictional wetlands.

C. Utility lines shall be located at least 50 feet away from a stream which appears as a blue line on a USGA 7-1/2-minute topographic map except where the utility line alignment crosses the stream. Utility lines that cross streams shall be constructed by methods that maintain normal stream 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 utility line excavation shall not be allowed to enter the flowing portion of the stream.

D. The activities shall not result in any permanent changes in preconstruction elevation contours in waters or wetlands or stream dimension, pattern or profile.

E. Utility line construction projects through jurisdictional wetlands shall not result in conversion of the area to non-wetland status.

F. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction form entering the watercourse.

G. Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access. Effective erosion and sedimentation control measures must be employed at all times during the project to prevent degradation of waters of the Commonwealth. Site regarding and reseeding will be accomplished with 14 days after disturbance.

H. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.

I. 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 where such in stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.

J. 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 riprap is utilized, it is to be of such weight and size that bank stress or slump conditions will not be created because of its placement.

K. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.

L. 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.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Definitions:

1. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, GC, SC, ML, and CL.
2. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups MH, CH, OL, OH and PT. The Contractor shall notify the Engineer if these soil materials are encountered.
3. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand.
4. Drainage Fill: Washed, evenly graded mixture of crushed stone, or uncrushed gravel, with 100 percent passing a 1/2-inch sieve and not more than 5 percent passing a No. 4 sieve.
5. Backfill and Fill Materials: Satisfactory soil materials free of debris, waste, frozen materials, vegetable, and other deleterious matter.

PART 3 - EXECUTION

3.1 CLEARING AND GRUBBING

A. Work shall consist of cutting and removing designated trees, stumps, brush, logs, removal of fences, or other loose and projecting material. Unless otherwise specified, it shall also include the grubbing of stumps, roots, and other natural obstructions which, in the opinion of the Engineer, must be removed to execute properly the construction work and operate properly the facility upon the completion of construction.

B. Trees, bushes, and all-natural vegetation shall only be removed with the approval of the Engineer. No cleared or grubbed materials shall be used in backfills or embankment fills. All stumps, roots, and other objectionable material shall be grubbed up so that no roots larger than 3 inches in diameter remain less than 18 inches below the ground surface. All holes and depressions left by grubbing operations shall be filled with suitable material and compacted to grade, as recommended in Paragraph 3.6.

C. Disposal shall be by burning or other methods satisfactory to the Engineer; however, burning will be permitted only when the Contractor has obtained written permission from the local regulatory agency.

D. The Contractor shall also remove from the site and satisfactorily dispose of all miscellaneous rubbish including, but not limited to, masonry, scrap metal, rock, pavement, etc., that is under

the fill or to be removed as shown on the Drawings, specified herein, or directed by the Engineer.

E. Existing improvements, adjacent property, utility and other facilities, and trees, plants, and brush that are not to be removed shall be protected from injury or damage resulting from the Contractor's operations.

F. Trees and shrubs, designated to remain or that are beyond the clearing and grubbing limit, which are injured or damaged during construction operations shall be treated or replaced at the Contractor's expense by experienced tree surgery personnel.

3.2 EROSION CONTROL

A. Temporary measures shall be applied throughout the construction period to control and to minimize siltation to adjacent properties and waterways. Such measures shall include, but not be limited to, the use of berms, silt barriers, gravel or crushed stone, mulch, slope drains and other methods.

B. These temporary measures shall be applied to erodible material exposed by any activity associated with the construction of this project.

C. Refer to Section 312500 - Erosion and Sedimentation Control for requirements.

3.3 EXCAVATION

A. Excavation of every description and of whatever substances encountered within the grading limits of the project shall be performed to the lines and grades indicated on the Drawings. All excavation shall be performed in the manner and sequence as required for the work.

B. All excavated materials that meet the requirements for fill, subgrades or backfill shall be stockpiled within the site for use as fill or backfill, or for providing the final site grades. Where practicable, suitable excavated material shall be transported directly to any place in the fill areas within the limits of the work. All excavated materials that are not suitable for fill, and any surplus of excavated material that is not required for fill shall be disposed of by the Contractor.

C. The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches, dikes and shall perform all pumping and other work necessary to divert or remove rainfall and all other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent flooding and/or damage to other locations within the construction area where it may be detrimental. The Contractor shall provide, install and operate sufficient trenches, sumps, pumps, hose piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least 2 feet below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of 2 feet below the lowest excavation subgrade made until the excavation is backfilled or the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures from natural ground water.

D. Excavations for concrete structural slabs on grade shall extend 2 feet below the indicated bottom of slabs. The over-excavation shall be backfilled with 18 inches, compacted thickness, of over lot fill material or suitable material as herein specified. The remaining 6 inches of over-excavation shall be backfilled with porous fill material. The porous fill layer shall extend beyond the limits of the concrete slab a minimum of 2 feet on all sides as indicated on the Drawings. The porous fill shall be crushed stone or gravel and shall have the following U.S. Standard Sieve gradation:

Sieve	1-1/2	1	3/4	1/2	3/8
% Passing	Min 100	95±5	58±17	Max 15	Max 5

E. Excavations for the construction shall be carefully made to the depths required. Bottoms for footings and grade beams shall be level, clean and clear of loose material, the lower sections true to size. Bottoms of footings and grade beams, in all locations, shall be at a minimum depth of 30 inches below adjacent exterior finished grade or 30 inches below adjacent existing grade, whichever is lower, whether so indicated or not. Footings and grade beam bottoms shall be inspected by the Engineer before any concrete is placed thereon.

F. In excavations for structures where, in the opinion of the Engineer, the ground is spongy or otherwise unsuitable for the contemplated foundation, the Contractor shall remove such unsuitable material and replace it with suitable material properly compacted.

G. Sheeting and shoring shall be provided as necessary for the protection of the work and for the safety of the personnel. The clearances and types of the temporary structures, insofar as they affect the character of the finished work, will be subject to the review of the Engineer, but the Contractor shall be responsible for the adequacy of all sheeting, bracing and cofferdamming. All shoring, bracing and sheeting shall be removed as the excavations are backfilled in a manner such as to prevent injurious caving, or if directed by the Engineer, shall be left in place. Sheeting left in place shall be cut off 18 inches below the surface.

H. Excavation for structures which have been carried below the depths indicated without specific instructions shall be refilled to the proper grade with suitable material properly compacted, except that in excavation for columns, walls or footings, the concrete footings shall extend to this lower depth. All work of this nature shall be at the Contractor's expense.

3.4 FILL

A. All existing fill below structures and paved areas must be stripped. The upper 6 inches of the natural subgrade below shall be scarified and recompacted at optimum moisture to at least 95 percent of Standard Proctor Density ASTM D 698 (latest revision).

B. All vegetation, such as roots, brush, heavy sods, heavy growth of grass and all decayed vegetable matter, rubbish and other unsuitable material within the area upon which fill is to be placed shall be stripped or otherwise removed before the fill is started. In no case will such objectionable material be allowed to remain in or under the fill area. Existing fill from excavated areas on site shall be used as fill for open and/or planted areas. Additional fill stockpiled at the site can be used for structural fill if approved by the Engineer. Any additional material necessary for establishing the indicated grades shall be furnished by the Contractor and approved by the Engineer. All fill material shall be free from trash, roots and other organic material. The best material to be used in fills shall be reserved for backfilling pipelines and for

finishing and dressing the surface. Material larger than 3 inches maximum dimension shall not be permitted in the upper 6 inches of the fill area. Fill material shall be placed in successive layers and thoroughly tamped or rolled in a manner approved by the Engineer, each layer being moistened or dried such that the specified degree of compaction shall be obtained. No fill shall be placed or compacted in a frozen condition or on top of frozen material. No fill material shall be placed when free water is standing on the surface of the area where the fill is to be placed and no compaction of fill will be permitted with free water on any point of the surface of the fill to be compacted.

C. Where concrete slabs are placed on earth, all loam and organic or other unsuitable material shall be removed. Where fill is required to raise the subgrade for concrete slabs to the elevations as indicated on the Drawings or as required by the Engineer, such fill shall consist of suitable material and shall be placed in layers. Each layer shall be moistened or dried such that the specified degree of compaction shall be obtained. All compaction shall be accomplished in a manner and with equipment as approved by the Engineer. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for adjacent fill.

3.5 BACKFILLING

A. After completion of footings, grade beams and other construction below the elevation of the final grades and prior to backfilling, all forms shall be removed, and the excavation shall be cleaned of all trash and debris. Material for backfilling shall be as specified for suitable material, placed and compacted as specified hereinafter. Backfill shall be placed in horizontal layers of the thickness specified and shall have a moisture content such that the required degree of compaction is obtained. Each layer shall be compacted by mechanical tampers or by other suitable equipment approved by the Engineer to the specified density. Special care shall be taken to prevent wedging action or eccentric loading upon or against the structure. Trucks and machinery used for grading shall not be allowed within 45 degrees above the bottom of the footings or grade beams.

B. The trenches shall be backfilled following visual inspection by the Engineer and prior to pressure testing. The trenches shall be carefully backfilled with the excavated materials approved for backfilling, or other suitable materials, free from large clods of earth or stones. Each layer shall be compacted to a density at least equal to that of the surrounding earth and in such a manner as to permit the rolling and compaction of the filled trench with the adjoining earth to provide the required bearing value, so that paving, if required, can proceed immediately after backfilling is completed.

3.6 COMPACTION

A. Suitable material as hereinbefore specified shall be placed in maximum 8-inch horizontal layers. Compaction shall be performed by rolling with approved tamping rollers, pneumatic-tired rollers, three-wheel power rollers or other approved equipment. The degree of compaction required is expressed as a percentage of the maximum dry density obtained by the test procedure presented in ASTM D-698. Laboratory moisture density tests shall be performed on all fill material. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction. Compaction requirements shall be as specified below:

Fill Utilized For	Required Density (%)	Maximum Permissible Lift Thickness As Compacted, Inches
Backfill & Utility Trenches Under Foundations & Pavement	95-100	8
Backfill Around Structures	95-100	8
Field and Utility Trench Backfill Under Sidewalk and Open Areas	90-100	8

B. Field density tests shall be performed in sufficient number to ensure the specified density is being obtained. Tests shall be in accordance with ASTM Standards D 1556 or D 2922/D 3017 and shall be performed as authorized by the Engineer. Payment for field density tests shall be by the Contractor. Contractor shall provide suitable notification for coordination of testing. Delays due to the lack of adequate advance notification shall be the responsibility of the Contractor.

3.7 SITE GRADING

A. Where indicated or directed, topsoil shall be removed without contamination with subsoil and spread on areas already graded and prepared for topsoil or transported and stockpiled convenient to areas for later application, or at locations specified. Topsoil shall be stripped to full depth and, when stored, shall be kept separate from other excavated materials and piled free of roots, stones, and other undesirable materials.

B. Following stripping, fill areas shall be scarified to a minimum depth of 6 inches to provide bond between existing ground and the fill material. Material should be placed in successive horizontal layers not exceeding 12 inches uncompacted thickness. In general, layers shall be placed approximately parallel to the finished grade line.

C. In general, and unless otherwise specified, the Contractor may use any type of earth moving equipment they have at their disposal, provided such equipment is in satisfactory condition and of such type and capacity that the work may be accomplished properly and the grading schedule maintained. During construction, the Contractor shall route equipment at all times, both when loaded and empty, over the layers as they are placed, and shall distribute the travel evenly over the entire area.

D. The material in the layers shall be of the proper moisture content before rolling or tamping to obtain the prescribed compaction. Wetting or drying throughout the layer shall be required. Should the material be too wet to permit proper compaction or rolling, all work on the fill thus affected shall be delayed until the material has dried to the required moisture content. If the material is too dry, it shall be sprinkled with water and manipulated to obtain the uniform moisture content required throughout a layer before it is compacted.

E. Each layer of the fill shall be compacted by rolling or tamping to the standard specified in Paragraph 3.6 and not less than 90 percent maximum density at optimum moisture content as determined by field density tests made by the Standard Proctor method. In general, and unless otherwise specified, the Contractor may use any type of compaction equipment such as

sheepsfoot rollers, pneumatic rollers, smooth rollers and other such equipment they have at their disposal, provided such equipment is in satisfactory condition and is of such design, type, size, weight, and quantity to obtain the required density in the embankment. If at any time the required density is not being obtained with the equipment then in use by the Contractor, the Engineer may require that different and/or additional compaction equipment be obtained and placed in use at once to obtain the required compaction.

F. The Contractor shall be responsible for the stability of all embankments and shall replace any portion which, in the opinion of the Engineer, has become displaced due to carelessness or negligence on the part of the Contractor.

3.8 TOPSOIL

A. Provide all labor, materials, equipment and services required for furnishing and placing topsoil. Samples of topsoil shall be submitted to the Engineer for review before topsoil is placed. The material shall be good quality loam and shall be fertile, friable, mellow; free from stones larger than 1 inch, excessive gravel, junk metal, glass, wood, plastic articles, roots and shall have a liberal amount of organic matter. Light sand loam or heavy clay loam will not be acceptable.

B. The topsoil shall be 3 inches thick in all areas to be seeded. No topsoil shall be placed until the area to be covered is excavated or filled to the required grade. Imported backfill material will be stockpiled on site for structure backfilling and top soiling.

END OF SECTION 312000

SECTION 312319 – DEWATERING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Furnish all labor and equipment required to dewater all excavations.

B. Dewatering of all excavations shall be the responsibility of the Contractor, and no additional compensation will be allowed for same unless specifically included as a bid item.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork is included in Section 312000.

B. Erosion and Sedimentation Control is included in Section 312502.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

A. Dewatering equipment shall be of adequate size and quantity to assure maintaining proper conditions for installing pipe, concrete, backfill or other material or structure in the excavation.

B. Dewatering shall include proper removal of any and all liquid, regardless of its source, from the excavation and the use of all practical means available to prevent surface runoff from entering any excavation.

C. The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches, dikes and shall perform all pumping and other work necessary to divert or remove rainfall and all other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent flooding and/or damage to other locations within the construction area where it may be detrimental. The Contractor shall provide, install and operate sufficient trenches, sumps, pumps, hose piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least 2 feet below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of 2 feet below the lowest excavation subgrade made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures from natural ground water.

D. Dewatering operations should not discharge into the sanitary sewer system, or into any ditch, pipe or other conveyance that leads to a regulated water body, except as authorized by a KPDES permit.

END OF SECTION 312319

SECTION 312502 – EROSION AND SEDIMENTATION CONTROL - KPDES REQUIREMENTS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Furnish all labor, materials, and equipment required for erecting, maintaining and removing temporary erosion and sedimentation controls as shown on the Drawings and as specified herein and as recommended by state and local regulatory agencies.

B. The Contractor shall at all times minimize disturbance and the period of time that the disturbed area is exposed without stabilization practices. In "critical areas" (within 25 feet of a stream) erosion prevention measures such as erosion control mats/blankets, mulch, or straw blown in and stabilized with tackifiers or by treading, etc. shall be implemented on disturbed areas within 24 hours or "as soon as practical" after completion of disturbance/grading or following cessation of activities.

C. Temporary erosion controls include, but are not limited to grassing, mulching, seeding, providing erosion control and turf reinforcement mats on all disturbed surfaces including waste area surfaces and stockpile and borrow area surfaces; scheduling work to minimize erosion and providing interceptor ditches at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.

D. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, and appurtenances on sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.

E. Contractor is responsible for providing and maintaining effective temporary erosion and sediment control measures prior to and during construction or until final controls become effective.

F. The Contractor shall be responsible for placement of erosion and sedimentation controls. Prior to construction, the Contractor shall develop a Stormwater Pollution Prevention Plan per state regulations. Prior to excavation, fill or grade work, the Contractor shall place controls in locations required by the plan. If during the course of construction, the state and/or local regulatory agency determines additional controls are required, the Contractor shall furnish, install and maintain additional mulching, blankets and/or sediment barriers to control erosion and sedimentation to the satisfaction of the regulatory agency.

G. The Contractor shall inspect and repair all erosion and sedimentation controls every seven days and after each rainfall of 1/2 inch or greater.

H. Bare soil areas must be seeded, mulched, or covered after 14 days if no work will be done in the area within the next 7 days. If areas are to be left bare for more than 14 days, erosion controls and sediment barriers are required to be installed.

I. Erosion Control prevention measures shall be installed prior to removal of vegetation and/or stripping of topsoil.

J. The Contractor is responsible for preparing and submitting the Notice of Intent and attachments and obtaining permit approval prior to the beginning of any construction activities.

1.2 PERMIT AND NOTIFICATION REQUIREMENTS

A. The Contractor shall submit a Notice of Intent Specifically for Construction Activities (NOI-SWCA) before beginning any site disturbance, and shall implement erosion control measures as may be required by state, local and federal agencies. Contractor shall submit an electronic Notice of Intent form and required attachments to the Division of Water at least seven working seven days, prior to beginning of construction activity. See Paragraph 3.8 in this section for detailed requirements.

B. The Contractor shall comply with all additional requirements of the local regulatory agency.

1.3 RELATED WORK

A. Dewatering is included in this Division, Section 312319.

B. Final erosion protection measures where required are included in this Section.

C. Utility Line Stream Crossings - Division 33.

PART 2 - PRODUCTS

2.1 SEED

A. The seed mixture to be sown shall be in the following proportions:

Common Name	Proportion By Weight	% of Purity	% of Germination
Line Lawn Fescue	40	90	85
Chewings Fescue	25	90	85
Italian Rye Grass	20	90	85
Red Top	10	90	85
White Clover	5	95	90

B. All seed shall be fresh and clean and shall be delivered mixed, in unopened packages, bearing a guaranteed analysis of the seed mixture.

C. Seed for temporary stabilization shall be annual rye grass, oats or wheat.

2.2 FERTILIZER

A. Just prior to the planting of turf, evenly broadcast 15 lbs. per thousand square feet of fertilizer, 10-10-10 (nitrogen, phosphorus, potassium). Disc or harrow fertilizer 2 inches to 4 inches into the soil.

B. Fertilizer shall be delivered to the site in the original unopened container bearing the manufacturer's guarantee analysis. Any fertilizer that becomes caked or damaged making it unsuitable for use, will not be accepted.

2.3 SOD

A. Sod shall be at least 70 percent Bluegrass, strongly rooted and free of weeds.

B. It shall be mowed to a height not to exceed 3 inches before lifting and shall be of uniform thickness with 1/2 inch to 1-1/2 inches of soil.

2.4 MULCH

A. Mulch for seeded areas shall be Conwed Hydro Mulch, Silva-Fiber, or equal. It shall be suitable for use in a water slurry or for application with hydraulic equipment. The moisture content shall be 9 percent to 15 percent, and mulch shall have an organic matter content of minimum 98 percent.

B. Clean straw is acceptable as mulch. It shall be spread at the rate of one bale per 1,000 feet (approximately 2-inch loose depth).

C. Mulch on slopes at or greater than 3:1 shall be held in place with turf reinforcement mat.

D. Mulch on areas subject to surface water run-off or in drainage ditches shall be held in place with turf reinforcement mat.

2.5 EROSION CONTROL BLANKETS

A. Erosion Control Blanket shall be made up of biodegradable and/or photodegradable products such as jute, wood fiber, coconut fiber, straw and degradable plastic netting. They shall degrade at a rate of approximately 6 months to 24 months.

B. Erosion Control Blanket shall be installed on slopes less than 3:1.

2.6 TURF REINFORCEMENT MAT

A. Where indicated on the Contract Drawings or as described in the Specifications, in all ditches and drainage channels and on all slopes equal to or greater than 3:1, Turf Reinforcement Mat shall be installed for long-term erosion control.

B. Turf Reinforcement Mat shall consist of top- and bottom-heavy weight netting and biodegradable matrix such as coconut fiber or aspen curled wood excelsior, as manufactured by Western

Excelsior Excel PP5-8 Turf Reinforcement Mat or equal. Product shall degrade at a minimum rate of 36 months.

C. Where slope and hydraulic conditions are severe, a synthetic matrix may be used, based on manufacturer's recommendations.

2.7 SILT FENCE

A. Temporary Silt Fence shall consist of woven geotextile fabric attached to 2-inch x 2-inch x 48-inch-tall hardwood stakes.

1. Exposed Fabric shall be 36 inches and a minimum of 4 inches shall be buried in trench as shown on the Detail Drawings.
2. Stakes shall be at 6 feet centers unless stated otherwise on Contract Documents.

B. Temporary Reinforced Silt Fence

1. For areas of steep slopes and high flows, where indicated on the Contract Drawings, or as directed by state or local regulations, Reinforced Silt Fence shall be installed.
2. Fabric shall be woven monofilament geotextile attached to 11-gauge steel fencing of 2-inch x 4-inch grid.
3. Stakes shall be 5 feet tall steel and shall be installed on 4-foot centers.
4. Fabric and fencing shall be buried in trench as shown on the Detail Drawings.

C. Spacing of Silt Fences on slopes shall be according to the following table, or as directed by state or local regulatory agencies:

Slope Angle		Soil Type		
		Silty	Clays	Sandy
Very Steep	(1:1)	50 feet	75 feet	100 feet
Steep	(2:1)	75 feet	100 feet	125 feet
Moderate	(4:1)	100 feet	125 feet	150 feet
Slight	(10:1)	125 feet	150 feet	200 feet

D. If runoff flows along the uphill side of the silt fence, Contractor shall install "J-hooks" every 40 feet to 80 feet. These are curved sections of silt fence above the continuous fence that serve as small dams to stop and hold the flow to allow sediment to settle.

2.8 FIBER ROLLS

A. On long slopes less than 10:1, and where indicated on the Contract Drawings or recommended by the regulatory agency, Fiber Rolls shall be installed.

B. Fiber Rolls shall be made of wood shavings, coconut fiber or other similar material encased in heavy duty netting.

C. Wooden stakes at 4 feet o.c. shall be used to anchor the Fiber Rolls along the contours of the slope.

2.9 AGGREGATE SILT CHECKS

A. Where needed to slow flow velocity, to cause ponding or to protect storm water inlet structures, Aggregate Silt Checks shall be installed.

B. Aggregate Silt Checks shall consist of rock of various sizes ranging from 2 inches to 6 inches contained in or placed on geotextile filter fabric. Pea-stone or gravel-filled bags are acceptable for temporary silt checks in low-flow conditions.

2.10 RIP RAP

A. Rip Rap shall be installed at the outlets of storm drains and on channel banks as noted on the Contract Drawings and/or recommended by state and local regulatory agencies.

B. Rip Rap shall have no less than 80 percent, by volume, of individual stones that range in size from 0.0247 to 1.483 cf.

2.11 CONSTRUCTION ENTRANCE PAD

A. Contractor shall construct entrance pads at all locations where vehicles will enter or exit the site.

B. Pad shall be a minimum of 20 feet wide, 50 feet long and 6 inches thick, and consist of No. 2 stone laid on top of filter fabric.

PART 3 - EXECUTION

3.1 GENERAL

A. Erosion and sediment control practices shall be consistent with the requirements of the state and local regulatory agencies and in any case shall be adequate to prevent erosion of disturbed and/or regraded areas.

B. Contractor is responsible for notifying the state regulatory agency concerning inclusion under the KPDES General Permit for Storm Water Discharges From Construction Activities.

C. Gravity sewer lines, force mains and water lines that cross steams shall be constructed by methods that maintain normal stream flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to reentering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the line excavation shall not be allowed to enter the flowing portion of the stream. The provisions of this condition shall apply to all types of utility line stream crossings.

D. Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access. Effective erosion and sedimentation control measures must be employed at

all times during the project to prevent degradation of waters of the Commonwealth. Site regrading and reseeding will be accomplished with 14 days after disturbance.

3.2 TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS

A. Temporary Stabilization is required for all disturbed areas where active work is not being performed. Rough graded areas and topsoil piles that are not in active use must be seeded immediately. The Contractor shall follow the guidelines in the table below:

Temporary Stabilization Table

Area requiring temporary stabilization	**Time frame to apply erosion controls**
Any disturbed areas within 25 feet of a stream	Within 24 hours of the most recent disturbance if the area will remain idle for more than 21 days
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 25 feet of a stream	Within seven days of the most recent disturbance within the area
Disturbed areas that will be idle over winter	Prior to the onset of winter weather
All areas where activity has temporarily ceased	Within 14 days

B. Permanent control measures to minimize erosion and sedimentation shall be through the stabilization of soil as soon as possible with perennial vegetation. The contractor shall follow the guidelines for Permanent Stabilization as specified in the table below.

Permanent Stabilization Table

Area requiring permanent stabilization	**Time frame to apply erosion controls**
Any areas that will lie dormant for 180 days or more	Within 14 days of the most recent disturbance
Any areas within 25 feet of a stream and at final grade	Within 24 hours of reaching final grade
Any other areas at final grade	Within 7days of reaching final grade within that area

If permanent seeding is not practical due to the time of year, the disturbed area shall be seeded immediately with an annual rye grass at a rate of 3 lbs. per 1,000 square feet and mulched with straw at a rate of 2-1/2 tons per acre. Mulch shall be anchored at 6-inch to 12-inch intervals across the slope by crimping into soil.

3.3 SEEDING

A. The areas to be seeded shall be thoroughly tilled to a depth of at least 4 inches by discing, harrowing, or other approved methods until the condition of the soil is acceptable to the Engineer. After harrowing or discing, the seed bed shall be dragged and/or hand raked to finish grade.

B. The incorporation of the fertilizer and the agricultural lime may be a part of the tillage operation and shall be applied no less than 24 hours nor more than 48 hours before the seed is to be sown.

C. Seed shall be broadcast either by hand or approved sowing equipment at the rate of 90 lbs. per acre (2 lbs. per 1,000 square feet), uniformly distributed over the area. Broadcasting seeding during high winds will not be permitted. The seed shall be drilled or raked into a depth of approximately 2 inches and the seeded areas shall be lightly raked to cover the seed and rolled. Drilling seeding shall be done with approved equipment with drills not more than 3 inches apart. All ridges shall be smoothed out, and all furrows and wheel tracks likely to develop into washes, shall be removed.

D. After the seed has been sown, the areas so seeded shall be mulched with clean straw at the rate of one bale per 1,000 feet (approximately 2-inch loose depth). Mulch on slopes and in all ditches and drainage channels shall be held in place with erosion control blankets.

E. Areas seeded shall be watered and protected until a uniform stand develops, and then inspected periodically and maintained appropriately. Displaced mulch shall be replaced or any damage to the seeded area shall be repaired promptly, both in a manner to cause minimum disturbance to the existing stand of grass. If necessary to obtain a uniform stand, the Contractor shall refertilize, reseed and remulch as needed. Scattered bare spots up to one square yard in size will be allowed up to a maximum of 10 percent of any area.

F. The following table is a guide to schedule seeding and mulching:

Stabilization Practice	JAN	FEB	MAR	APR	MAY	JUN	JULY	AUG	SEPT	OCT	NOV	DEC
Permanent Seeding			A									
Dormant Seeding	B										B	
Temporary Seeding			G	F				D				
Sodding			F									
Mulching	G											

Seed and Mulch:

A = Fescue, Clover, Ryegrass Mixture:	160 lbs./acres or 4 lbs./1,000 sf plus 2 tons mulch per acre
B = Fescue, Clover, Ryegrass Mixture:	160 lbs./acres or 4 lbs./1,000 sf plus 2 tons mulch per acre
C = Oats:	120 lbs./acre
D = Wheat or Rye:	120 lbs./acre
E = Perennial Ryegrass:	40 lbs./acre or 1 lb./1,000 sf
F = Install Sod	
G= Mulch	2 tons per acre
Irrigation Needed:	May through August and October and two to three weeks after installing sod in March or April

3.4 SOD

A. To install, bring soil to final grade and clear of trash, wood, rock, and other debris. Apply topsoil, fertilizer at approximately 1000 lbs. per acre.

B. Use sod within 36 hours of cutting. Lay sod in straight lines. Butt joints tightly, but do not overlap joints or stretch sod. Stagger joints in adjacent rows in a brickwork type pattern. Use torn or uneven pieces on the end of the row.

C. Notch into existing grass. Anchor sod with pins or stakes if placed on slopes greater than 3:1. Roll or tamp sod after installation and water immediately. Soak to a depth of 4 inches to 6 inches. Replace sod that grows poorly. Do not cut or lay sod in extremely wet or cold weather. Do not mow regularly until sod is well established.

3.5 INSTALLATION OF EROSION AND SEDIMENT CONTROL DEVICES

A. All erosion and sediment control products and materials shall be installed per manufacturer's recommendations and in accordance with the Kentucky Erosion Prevention and Sediment Control Field Guide.

B. Contractor shall pay special attention to the trenching-in of the bottoms of silt fence, the staking of sediment barriers, and the stapling of erosion control blankets.

3.6 MAINTENANCE OF EROSION AND SEDIMENT CONTROL DEVICES

A. Erosion and sedimentation controls shall be inspected weekly and after rain events of 1/2-inch or greater. Replace silt fencing as needed, filter stone which is dislodged, erosion control blanket which is damaged, and make other necessary repairs.

B. Remove sediment from fences and barriers when it accumulates to half the height of the barrier, or more often as needed.

3.7 CLEAN UP

A. Upon completion of the project and/or establishment of satisfactory turf, vegetation or permanent erosion control structures, Contractor shall remove all temporary devices and properly dispose of such.

3.8 KPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

A. The Contractor is responsible for filing the electronic Notice of Intent (NOI-SWCA) form at least seven days prior to start of construction activity. The Notice of Intent (NOI) is a Kentucky Pollution Discharge Elimination System (KPDES) permit application as provided by the Kentucky Revised Statutes, Chapter 224. This application is required to be submitted for construction projects that disturb one or more acres of land.

B. The NOI requires the inclusion of the descriptions of (but is not limited to) the following items:

1. Names and designated uses of any receiving waters
2. Anticipated number and locations of discharge points
3. Identification of planned construction in or along a water body

A project map showing property boundaries, areas to be disturbed, locations of anticipated discharge points and receiving waters is also required to be submitted with the NOI.

C. If the construction site is near a designated "Impaired Water" or a "Cold Water Aquatic Habitat Waters, Exceptional Waters, Outstanding National/State Resource Waters", additional items and/or individual permits may be required.

D. The NOI form requires an SIC code. The link to the SIC codes is http://www.osha.gov/pls/imis/sicsearch.html. The following are the typical construction SIC codes utilized:

1542 - Building Construction, nonresidential, except industrial and warehouses
1623 - Water Main Construction, Sewer Construction
1629 - Water and Wastewater Treatment Plant Construction

1711 - Water Pump Installation
1781 - Drilling Water Wells

E. The Contractor is responsible for developing, implementing and continuously updating a Stormwater Pollution Prevention Plan (SWPPP) before commencement of site disturbance. The SWPPP should include erosion prevention measures and sediment control measures which are installed and maintained to minimize discharges of sediments and other pollutants from a two-year, 24-hour storm event. The SWPPP must be kept at the site and available for review by State officials, and must be updated as necessary through the course of the construction project.

F. The Contractor should receive notification from the Kentucky Division of Water of permit coverage within seven days of the electronic submittal. Until receipt of notification that NOI is acceptable, site disturbance is not permitted.

G. The permit, fact sheet, and links to permitting forms and more information can be found at http://water.ky.gov/permitting/Pages/WastewaterDischarge.aspx, General Permit KYR10.

H. Unless otherwise noted, the Contractor is responsible for completing and maintaining the required Self-Inspection Forms. A sample is included at the end of this specification section.

I. Upon completion of the project and establishment of all permanent erosion and sediment control structures and devices, the Contractor shall submit the Notice of Termination (NOT) form to the Division of Water.

J. All subcontractors are required to comply with the requirements of the Permit and the Stormwater Pollution Prevention Plan (SWPPP).

3.10 WHERE TO SUBMIT

A. Submit an Electronic Notice of Intent (NOI) Form to:
https://dep.gateway.ky.gov/eForms/default.aspx?FormID=48

3.11 REQUIRED FOR THIS CONTRACT

A. The Contractor shall submit the signed electronic NOI to the Kentucky Division of Water (address noted above) at least 7 days prior to the start of work activities for an electronic submittal, or 30 days for a paper submittal. Do not begin site work until receiving notice of permit approval from the Division of Water.

B. Submit the NOI and locally required documents to the local regulatory agency.

C. Develop, implement, and continuously update the Stormwater Pollution Prevention Plan (SWPPP).

D. Inspect and document the condition of runoff controls every seven days and after each rain event of one-half inch or more. Maintain inspection reports at the site.

E. The Contractor shall file an electronic Notice of Termination (NOT) when General Permit coverage is no longer needed (General Permits describe how this is done).

END OF SECTION 312502

KENTUCKY CONSTRUCTION SITE INSPECTION REPORT

UTILITY LINE PROJECTS

KENTUCKY EROSION AND SEDIMENT CONTROL
PERMIT COMPLIANCE INSPECTION REPORT

General Site Information:

Company:	**County:**
Site:	**Date:**

Permit Compliance Information:

	Yes	No
Copy of Permit kept on site		
Copy of Best Management Practices (BMP) Plan kept on site		
Site specific description of project timing/phasing and implementation		
Adequate Site Map Showing:		
• Drainage patterns indicated on plan		
• Receiving waters (stream, river, lake, wetland, etc.) named		
• Approximate slopes after major grading		
• Area of soil disturbance		
• Undisturbed areas and vegetative buffer zones		
• Location of structural and non-structural controls (BPMs)		
• Areas where stabilization practices are to be employed		
• Storm water discharge locations		

Specific Site Information:

Name of receiving stream:	
Total area of site:	
Area disturbed:	

Inspection Results:

Inspection Criteria **Satisfactory, Marginal, Unsatisfactory**	**S**	**M**	**U**
Condition of receiving stream is BMP Plan adequately implemented?			
Timely seedling and mulching			
• Revegetation on cut/fill/cleared areas			
• Condition of slope areas			
Structural Controls			
• Drainage ditch protection/liners installed			
• Inlet protection for curb drains, etc.			
• Outlet protection - no erosion or scour			
• Silt fences below bare soil areas			
• Rock check dams in ditches			
• Sediment traps/ponds maintained			
• Other controls			

Kentucky Best Management Practices Plan ● Construction Site Inspection Report			
Company:	Site:		County:
Site Operator:			Date:
Receiving Water:	Total Area (acres):		# Disturbed Acres:
Inspector Name:	Inspector Qualifications:		
Inspection Type: Weekly or 1/2 Inch Rain	Days Since Last Rainfall:		# Inches of Last Rainfall:

Field Inspection Observations

BMP Category	Compliance			Field Indicators for Compliance
	Yes	No	N/A	
Project Operations				Notice of Intent (KPDES permit) and other local/state permits on file CMP Plan on site and available for review Project timing/schedule and activities following BMP Plan Weekly inspection and rain-event reports on BMPs available for review Diversions, silt checks/traps/basins, and silt fences/barriers installed prior to cleaning Grading and clearing conducted in phases to minimize exposed soil areas No vegetation removal or operations in stream or sinkhole buffer area (25-50 ft. min) Rock pad in place on all construction site exits leading to paved roads No sediment, mud, or rock on paved public roads in project area Dust control if needed when working in residential areas during dry conditions
Drainage Management				Upland runoff diverted around bare soil areas with vegetated/lined ditches/berms Drainage channels existing the site are lined with grass/blanket/rock and stabilized Discharges from dewatering operations cleaned in silt fence enclosure or other filter No muddy runoff leaving site after rains up to 1-1/2 inches
Erosion Protection				Exposed soil seeded/mulched after 2 weeks if no work is planned for the next 7 days Soils on steep slopes seeded/mulched/blanketed as needed to prevent rutting
Sediment Barriers				Silt fence, rock filter, or other sediment barrier below all bare soil areas on slopes Barrier installed across slope on the contour, trenched in, posts on downhill side Multiple sediment barriers at least 125 ft apart on unseeded slopes steeper than 4:1 J-hook interceptors along silt fence where heavy muddy flows fund along fencing No visible undercutting or bypassing or blowout of sediment barrier
Slope Protection				Slopes tracked, disked, or conditioned after final grade is established Slopes seeded. Mulched, or blanketed within 21 days, no unmanaged rills or gullying Heavy downslope flows controlled by lined downdrain channels or slope drain pipes No muddy runoff from slopes into streams, rivers, lakes, or wetlands
Inlet Protection				Inlet dam/device or filtration unit placed at all inlets receiving muddy flows No visible undercutting, bypassing, or blowout of inlet protection dam or device Accumulated sediment is less than halfway to the top of the inlet protection dam/device
Outlet Protection				High flow discharges have rock or other flow dissipaters of adequate sizing of outlet Culvert outlets show no visible signs of erosion/scour, bank failure, or collapse
Ditch and Channel Stabilization				No unmanaged channel bank erosion or bottom scouring visible within or below site Ditches with slopes more than 4% have check dams spaced as needed, if not grassed Ditch check dams tied into banks, with center 4 inches lower than sides, and no bypassing Ditches with slopes of up to 5% are thickly seeded with grass (minimum requirement) Ditches 5% to 15% are lined with thick grass and erosion control blankets as needed Ditches 15% to 33% are lined with thick grass and matting or other approved product Ditches exceeding 33% are paved or lined with rock or other approved product

Sediment Traps And Basins				Storage volume is at least 134 cubic yards for each acre of bare soil area drained Trap or basin is seeded/mulched and stabilized; no collapsing sidewalls or banks Outlet structure is stable and consists of rock-lined notched overflow or outlet riser Rock overflow is 6: lower in center to control overflow discharge Outlet riser pipe has concrete and rock base, 1/2 inch holes every 3 to 6 inches, and trash rack Area near pipe outlet or overflow is stable, with no scour or erosion Sediment removed before trap or basin is halfway full; disposal is away from ditches
Maintenance of EPSC Management Practices				Sediment behind silt fence and other filters does not reach halfway to top Sediment traps and basins are less than half full of sediment Gullies repaired, silt fences and other controls inspected and repaired/replaced Written documentation of controls installed, inspection results, and repairs performed All controls removed and areas graded, seeded, and stabilized before leaving site
Materials Storage, Handling, and Cleanup				Materials that may leach pollutants stored under cover and out of the weather Fuel tanks located in protected area with double containment system Fuel and/or other spills cleaned up promptly; no evidence of unmanaged spills No evidence of paint, concrete, or other material washouts near drain inlets No storage of hazardous or toxic materials near ditches or water bodies
Waste Disposal				Trash, litter, and other debris in proper containers or properly managed No litter or trash scattered around on the construction site Provisions made for restroom facilities and/or other sanitary waste management Sanitary waste facilities clean and serviced according to schedule No disposal of any wastes into curb or other inlets, ditches, streams, or water bodies

Inspection Notes and Key Observations

List of Stabilized Areas: Vegetation is Established; Ditches are Stabilized; No Exposed Soil
Other Notes or Observations
Corrective Actions Taken and/or Proposed Revisions to BMP Plan

I certify under penalty of law that I understand the terms and conditions of the general Kentucky Pollutant Discharge Elimination System (KPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature of Inspector: _____

SECTION 315000 – EXCAVATION SUPPORT AND PROTECTION

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. This Section includes, but is not limited to, the following:

1. Shoring and bracing necessary to protect existing buildings, streets, walkways, utilities, and other improvements and excavation against loss of ground or caving embankments.
2. Maintenance of shoring and bracing.
3. Removal of shoring and bracing, as required.

B. Types of shoring and bracing systems include, but are not limited to, the following:

1. Steel H-section (soldier) piles.
2. Timber lagging.
3. Steel sheet piles.
4. Portable Steel Trench Box.

C. Building excavation is specified in another Section.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Section 013323.

Layout drawings for excavation support system and other data prepared by, or under the supervision of, a qualified Professional Engineer. System design and calculations must be acceptable to local authorities having jurisdiction. This submittal is for information only. Engineer's review is not for adequacy design, but to verify that it has been designed by a licensed professional. Design of shoring is part of means and methods of construction and remains solely the responsibility of the Contractor.

1.4 QUALITY ASSURANCE

A. Engineer Qualifications: A Professional Engineer legally authorized to practice in jurisdiction where Project is located and experienced in providing successful engineering services for excavation support systems similar in extent required for this Project.

B. Supervision: Engage and assign supervision of excavation support system to a qualified Professional Engineer foundation consultant.

C. Regulations: Comply with codes and ordinances of governing authorities having jurisdiction.

1.5 JOB CONDITIONS

A. Before starting work, verify governing dimensions and elevations. Verify condition of adjoining properties. Take photographs to record any existing settlement or cracking of structures, pavements, and other improvements. Prepare a list of such damages, verified by dated photographs, and signed by Contractor and others conducting investigation.

B. Survey adjacent structures and improvements, employing qualified Professional Engineer, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

C. During excavation, resurvey benchmarks weekly, maintaining accurate log of surveyed elevations for comparison with original elevations. Promptly notify Engineer if changes in elevations occur or if cracks, sags, or other damage is evident.

1.6 EXISTING UTILITIES

A. Protect existing active sewer, water, gas, electricity and other utility services and structures.

B. Notify municipal agencies and service utility companies having jurisdiction. Comply with requirements of governing authorities and agencies for protection, relocation, removal, and discontinuing of services.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide adequate shoring and bracing materials which will support loads imposed. Materials need not be new but should be in serviceable condition.

B. Structural Steel: ASTM A 36.

C. Steel Sheet Piles: ASTM A 328.

D. Timber Lagging: Any species, rough-cut, mixed hardwood, nominal 3 inches thick, unless otherwise indicated.

E. Portable Steel Trench Box shall be OSHA approved.

PART 3 - EXECUTION

3.1 SHORING

A. Wherever shoring is required, locate the system to clear permanent construction and to permit forming and finishing of concrete surfaces. Provide shoring system adequately anchored and braced to resist earth and hydrostatic pressures.

B. Shoring systems retaining earth on which the support or stability of existing structures is dependent must be left in place at completion of work.

3.2 BRACING

A. Locate bracing to clear columns, floor framing construction, and other permanent work. If necessary to move a brace, install new bracing prior to removal of original brace.

B. Do not place bracing where it will be cast into or included in permanent concrete work, except as otherwise acceptable to Engineer.

C. Install internal bracing, if required, to prevent spreading or distortion of braced frames.

D. Maintain bracing until structural elements are supported by other bracing or until permanent construction is able to withstand lateral earth and hydrostatic pressures.

E. Remove sheeting, shoring, and bracing in stages to avoid disturbance to underlying soils and damage to structures, pavements, facilities, and utilities.

F. Repair or replace, as acceptable to Engineer, adjacent work damaged or displaced through installation or removal of shoring and bracing work.

END OF SECTION 315000

DIVISION 32

EXTERIOR IMPROVEMENTS

SECTION 321216 – ASPHALT PAVING (KENTUCKY)

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. The hot-mix asphalt paving work includes the construction of an aggregate base course, asphalt base and wearing courses as specified herein. This work is to replace paving disturbed by the construction and any damages to paving by Contractor's operations, as well as new pavement and driveways, within the limits shown on the plans.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. The general provisions of the Contract, including General Conditions and General Requirements apply to the work specified in this section.

B. Earthwork: Section 312000

1.3 APPLICABLE STANDARDS

A. All references in this section to the Standard Specifications shall refer to the most recent Edition of Standard Specifications for Road and Bridge Construction with all amendments thereto as published by the Kentucky Transportation Cabinet (KYTC).

1.4 SUBMITTALS

A. Job-Mix Designs: For each job mix proposed for the Work.

B. Comply with the requirements of Section 013323.

1.5 QUALITY ASSURANCE

A. Hot Mix Asphalt Producer Qualifications: Engage a firm experienced in producing hot-mix asphalt similar to that indicated for this Project and with a record of successful in-service performance.

B. Producer firms shall be qualified through the Kentucky Transportation Cabinet as an approved Asphalt Mix Producing Firm.

C. Testing and inspection: The Contractor shall retain a qualified testing laboratory for testing and inspection.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp. Comply with the provisions of KYTC Standard Specifications Section 403.03.01 for temperature requirements.

B. Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Aggregate Base Course: Dense Graded Aggregate Base (DGA) complying with Section 302 and 805 of the Standard Specifications.

C. Coarse Aggregate: Sound, angular crushed stone, or crushed gravel, complying with Standard Specifications Section 805.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: AASHTO MP 1, Performance Graded Binder PG 64-22 for general applications.

B. Tack Coat: Comply with provisions in KYTC Standard Specifications Section 406.

2.3 MIXES

A. Hot-Mix Asphalt: Hot-laid, hot-mix asphalt plant mixes meeting the requirements of the Standard Specifications of the Kentucky Transportation Cabinet (KYTC) or Asphalt Institute (AI) MS-2 and complying with the following requirements:

1. Base Course: Produce KYTC mixture designation Class 2 Base. There shall be no restrictions on polish resistant aggregates (utilize KYTC Type "D" aggregates). Recycled Asphalt Pavement (RAP) may be utilized in accordance with Standard Specifications Section 409.
2. Surface Course: KYTC mixture designation Class 2 Surface. The mixture gradation may pass through the restricted zone and there shall be no restriction on polish resistant aggregates (utilize KYTC Type "D" aggregates). Recycled Asphalt Pavement (RAP) may be utilized in accordance with Standard Specifications Section 409.

B. Hot-Mix Asphalt: Hot-laid, hot-mix asphalt plant mixes designed according to procedures established by the Kentucky Transportation Cabinet (KYTC) and complying with the following requirements.

1. Provide mixes complying with composition, grading, and tolerance requirements Standard Specifications for the following nominal, maximum aggregate sizes:

    a. Base Course: Mixture with a nominal maximum aggregate size of 0.75 inch with a minimum Voids in the Mineral Aggregate (VMA) of 12 percent.
    b. Surface Course: Mixture with a nominal maximum aggregate size of 0.38 inch with a minimum VMA of 14 percent.

PART 3 - EXECUTION

3.1 INSPECTION

A. Pavement installer must examine the areas excavated and backfilled and conditions under which pavement is to be constructed. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until satisfactory embankments and subgrade have been established to a uniform line, properly shaped and compacted.

B. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.

C. Proof-roll subbase using loaded dump trucks or heavy rubber-tired construction equipment to locate areas that are unstable or that require further compaction.

D. Proceed with paving only after unsatisfactory conditions have been corrected.

E. Repairs to Base Course: Fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact flush with adjacent surface.

F. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.2 AGGREGATE BASE COURSES

A. Place aggregate base course on subgrades free of mud, frost, snow, or ice in accordance with Section 302 of the Standard Specifications.

B. On prepared subgrade, place base course as follows:

1. Shape base course to required crown elevations and cross-slope grades.
2. Place base course that exceeds 9 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
3. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 98 percent of maximum dry unit weight according to ASTM D698 or in accordance with Section 302.03.04 of the Standard Specifications.

3.3 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.

B. Tack Coat: Comply with provisions in Standard Specifications Section 406. Apply to the surface of concrete surfaces, existing asphalt surfaces and, when necessary, to newly constructed asphalt surfaces.

3.4 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Comply with applicable provisions of KYTC Standard Specifications Section 403 for delivery, placement, spreading and compaction of the mixture.

1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent.

3.5 FIELD QUALITY CONTROL

A. Thickness Tolerances: Compact each course to produce the thickness indicated within the following tolerances:

1. Aggregate and asphalt base Course: plus or minus 1/2 inch.
2. Asphalt surface course: plus or minus 1/4 inch.
3. Provide a minimum fall of 2 percent to facilitate drainage unless otherwise indicated on the Drawings.

B. Surface Smoothness: Compact each course to produce a surface smoothness with the following tolerances as determined using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Aggregate base course: 3/8 inch.
2. Asphalt base course: 1/4 inch.
3. Asphalt surface course: 1/8 inch.
4. Crowned surfaces: Test with crowned template centered and at a right angle to crown. Maximum allowable variance from template is 1/4 inch.

C. In-Place Density: Filed density test of in-place compacted aggregate base will be determined by nuclear method in accordance with ASTM D 2940. Field density of in-place compacted pavement will be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726. Test will be made for every 1,000 square yards or less of installed pavement.

D. Core Sampling: If required to confirm either thickness tolerances or compaction of asphalt courses, core samples shall be taken and tested according to ASTM D 3549 for thickness and ASTM D 1188 or ASTM D 2726 for compaction. Determination of need for core samples will be made by the Engineer.

END OF SECTION 321216

SECTION 321540 – CRUSHED STONE ACCESS DRIVE

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to construct the crushed stone access roads and gravel parking areas shown on the Drawings.

B. This work shall be scheduled near the end of the project to minimize construction traffic on finished surface.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork: Section 312000

1.3 APPLICABLE STANDARDS

A. All references in this section to the KYTC Standard Specifications shall refer to the most recent edition of Standard Specifications for Road and Bridge Construction with all amendments and supplements thereto as published by the Kentucky Transportation Cabinet, Department of Highways.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials required for work in this section shall be as specified in the KYTC Standard Specifications.

B. Crushed stone aggregate course for the access road and parking area shall consist of DGA as specified in KYTC Standard Specifications, Section 302.

C. Final compacted thickness shall be 8 inches.

PART 3 - EXECUTION

3.1 SUBGRADE

A. Subgrade shall be prepared in accordance with Section 207 of the KYTC Standard Specifications.

B. On all areas, the ground surface shall be stripped of all vegetative cover, and the top 3-inch layer of soil shall be scarified and compacted in place.

C. The subgrade shall be prepared to a smooth finish without indentation to the full width of the base course plus one foot of additional width beyond each edge, except where limited by structures.

D. The subgrade shall be shaped by mechanical means until a uniform line and grade are established.

E. Subgrade for the aggregate surface access road shall be shaped to a crown with slopes 1/2 inch to 3/4 inch per foot.

3.2 AGGREGATE COURSE

A. Aggregate base course for the crushed stone access roads and parking areas shall consist of DGA, with a compacted thickness of 8 inches over all areas.

B. Thickness on the access road shall be uniform over the shaped subgrade to maintain the crown.

C. Aggregate shall be machine compacted with an appropriate roller to the target density in accordance with Section 302 of the KYTC Standard Specifications.

END OF SECTION 321540

SECTION 321615 – SIDEWALKS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Furnish all labor, materials, equipment and services required for constructing concrete sidewalks where shown on the Drawings and as specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork: Section 312000

B. Concrete: Section 033100

PART 2 - PRODUCTS

2.1 CRUSHED STONE

A. Stone for sidewalk base shall be No. 57 aggregate or equal.

2.2 CONCRETE

A. Concrete for sidewalks shall be 3000 psi concrete.

2.3 REINFORCEMENT

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 A615. All bar reinforcement shall be deformed.

B. 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.

2.4 PREMOLDED EXPANSION JOINT FILLER

A. Premolded expansion joint filler shall be closed cell polyethylene foam type, Sonneborn Sonoflex F, Williams Products Expand-O-Foam, or equal. Seal joint with one-part self. leveling polyurethane sealant, Sonneborn Sonolastic SL 1, or equal, maximum 3/8-inch depth. Prepare and prime joints per manufacturer's instructions.

PART 3 - EXECUTION

3.1 BASE

A. Following finished grading, a base course of crushed stone shall be placed to a compacted thickness of 4 inches. Immediately prior to placing concrete, crushed stone base shall be thoroughly wetted, or the concrete placed on a layer of heavy building paper.

3.2 SURFACE

A. Concrete paving shall consist of 4 inches or 6 inches (as noted) of 3,000 psi reinforced concrete, struck off to accurately placed screens and worked with a float until mortar appears on the top. After surface has been thoroughly floated, it shall be brushed to leave markings of a uniform type, providing non-slip finish. No dusting or plastering will be allowed.

3.3 FINISHING

A. All joints and edges shall be finished with an edging tool. Dummy joints shall be formed about five (5) feet apart to form rectangular blocks. Expansion joints of 1/2-inch premolded expansion joint material shall be provided at the intersection of all vertical surfaces with the sidewalks slabs and at approximately 20-foot intervals along the walks.

3.4 QUALITY CONTROL

A. The allowable variation shall be 1/8-inch to 10 feet transversely and longitudinally.

END OF SECTION 321615

SECTION 329200 – LAWNS AND GRASSES

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Provide all labor, materials, equipment, and services required for seeding of all disturbed areas caused by construction activities and for installation of sod where indicated on the Contract Drawings or specified herein.

1.2 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to Work of this Section.

B. Earthwork: Section 312000

1.3 MAINTENANCE

A. Maintenance shall begin immediately following the last operation of installation for each portion of lawn.

B. Lawns shall be maintained by watering, mowing, and for resodding for a period of 45 days. At the end of this period an inspection will be made and any deficiencies, which may be attributable to the Contractor, will be noted in writing. At this time, the Owner will assume the maintenance. Another inspection will be made at the beginning of the next planting season, and any of the previously noted deficiencies still existing shall be repaired by the Contractor.

1.4 INSPECTION FOR ACCEPTANCE

A. The Inspection of the Work:

1. The inspection of the work of lawns to determine the completion of contract work exclusive of the possible replacement of plants, will be made by the Architect/Engineer upon written notice requesting such inspection submitted by the Contractor at least 10 days prior to the anticipated date.

B. Acceptance:

1. After inspection, the Contractor will be notified in writing by the Owner of acceptance of all work of this Section, exclusive of the possible replacement of plants subject to guaranty, or if there are any deficiencies of the requirements of completion of the Work.

PART 2 - PRODUCTS

2.1 WATER

A. Water used in this work shall be suitable for irrigation and free from ingredients harmful to plant life.

B. Hose and other watering equipment required for the Work shall be furnished by the Contractor.

2.2 TOPSOIL

A. The Contractor shall furnish and place sufficient topsoil for the seeding and installation of sod.

2.3 FERTILIZER

A. Commercial fertilizer for lawn areas shall be complete fertilizer, formula 10-10-10, for lawns and shall conform to the applicable state fertilizer laws. Fertilizer shall be uniform in composition, dry and free flowing and shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guarantee analysis. Any fertilizer which becomes caked or otherwise damaged making it unsuitable for use will not be accepted.

B. Fertilizer shall be applied at the rate of 25 pounds per 1,000 square feet.

2.4 GRASS SEED

A. The seed mixture to be sown shall be in the following proportions:

Common Name	Proportion By Weight	% of Purity	% of Germination
Fine Lawn Fescue	40	90	85
Chewings Fescue	25	90	85
Italian Rye Grass	20	90	85
Red Top	10	90	85
White Clover	5	95	90

B. All seed shall be fresh and clean and shall be delivered mixed, in unopened packages, bearing a guaranteed analysis of the seed mixture.

C. Germination must be certified to conform to the following minimums:

Purity	90%
Germination	85%

2.5 SOD

A. Sod shall be at least 70 percent Bluegrass, strongly rooted and free of pernicious weeds.

B. It shall be mowed to a height not to exceed 3 inches before lifting and shall be of uniform thickness with not over 1-1/2 inches or less than 1 inch of soil.

2.6 MULCH

A. Mulch for seeded areas shall be Conwed Hydro Mulch, Silva-Fiber, or equal. It shall be suitable for use in a water slurry or for application with hydraulic equipment.

B. Clean straw is acceptable as mulch. It shall be spread at the rate of one bale per 1,000 feet (approximately 2-inch loose depth).

C. Mulch on slopes greater than 1:3 shall be held in place with turf reinforcing mat.

D. Mulch on areas subject to surface water run-off or in drainage ditches shall be held in place with erosion control netting.

PART 3 - EXECUTION

3.1 TIME OF PLANTING

A. Planting operations shall be conducted under favorable weather conditions during seasons which are normal for such work as determined by accepted practice in the locality of the project. At the option and on full responsibility of the Contractor, planting operations may be conducted under unseasonable conditions without additional compensation.

3.2 LAWNS

A. Areas to be sodded are designated on the Drawings. All other lawn areas, including areas of cut and fill and where existing ground has been disturbed by construction operations shall be seeded.

B. Fertilizer:

1. Fertilizer shall be applied at the rate of 25 lbs. per 1,000 square feet to the lawn area being prepared for planting and mixed lightly into the top few inches of topsoil. Fertilizer may be mixed with and distributed with grass seed.

C. Planting of Lawns:

1. Sowing of Seed:

a. Immediately before any seed is to be sown, the ground shall be scarified as necessary, and shall be raked until the surface is smooth, friable and of uniformly

fine texture. Lawn areas shall be seeded evenly with a mechanical spreader at the rate of 4 lbs. per 1,000 square feet of area, lightly raked, rolled with a 200-lb. roller and watered with a fine spray. The method of seeding may be varied at the discretion of the Contractor on his own responsibility to establish a smooth, uniform turf composed of the grasses specified. The sowing of seed shall be done only within the season extending from March 1st to May 15th and from September 1st to October 15th, unless other seasons may be approved by the Owner.

2. Laying of Sod:

   a. Before any sod is laid, all soft spots and inequalities in grade shall be corrected. Fertilizer spread shall be raked in. Sod shall be laid so that no voids occur, tamped or rolled and then thoroughly watered. The complete sodded surface shall be true to finished grade, even and firm at all points. Sodding shall be done only within the seasons extending from March 1st to May 15th and from September 1st to October 15th, unless other seasons may be approved by the Owner.

3. Sod on Slopes:

   a. Sod on slopes 2 to 1 or steeper shall be held in place by wooden pins about 1-inch square and about 6 inches long driven through the sod into the soil until they are flush with the top of the sod, or by other approved methods for holding the sod in place.

4. Mulching:

   a. All seeded areas are to be mulched with Conwed Hydro Mulch, Silva-Fiber, or equal, or with clean straw as specified under PRODUCTS. Mulch shall be applied at the rate of 1,500 lbs. per acre. It may be applied with hydraulic equipment or may be added to the water slurry in a hydraulic seeder and the seeding and mulching combined in one operation. Clean straw may be spread by hand to cover the seeded areas at a depth of 2 inches. Erosion control netting shall be installed and anchored per manufacturer's instructions in areas of slopes, ditches, or surface water runoff.

3.3 CLEAN UP

A. All soil, peat or similar material which has been brought over paved areas by hauling operations or otherwise, shall be removed promptly, keeping these areas clean at all times. Upon completion of the planting all excess soil, stone and debris which have not previously been cleaned up shall be removed from the site or disposed of as directed by the Owner. All lawns shall be prepared for final inspection.

3.4 OTHER WORK

A. The Contractor also shall be responsible for the repair of any damage caused by his activities or those of his subcontractors, such as the storage of topsoil or other materials, operations or equipment, or other usages to all on-site areas outside the contract limits. Such repair operations shall include any regrading, seeding or other work necessary to restore such areas to an acceptable condition.

3.5 QUALITY CONTROL

A. Areas seeded shall be protected until a uniform stand develops, when it will be accepted, and the Contractor relieved of further responsibility for maintenance. Displaced mulch shall be replaced or any damage to the seeded area shall be repaired promptly, both in a manner to cause minimum disturbance to the existing stand of grass. If necessary to obtain a uniform stand, the Contractor shall refertilize, reseed and remulch as needed. Scattered bare spots up to 1 square foot in size will be allowed up to a maximum of 10 percent of any area.

END OF SECTION 329200

DIVISION 33

UTILITIES

SECTION 330523 – BORING AND JACKING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to furnish and install all bored and jacked carrier pipes in encasement pipes under railroad and highway crossings as shown on the Drawings and/or specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork Section 312000

B. Piping: Division 33

1.3 SUBMITTALS

A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering.

B. At the time of submission, the Contractor shall, in writing, call the Engineer's attention to any deviations that the submittals may have from the requirements of the Contract Drawings and Specifications.

C. Comply with all requirements of Section 013323.

D. In accordance with the requirements of the General and Special Conditions and this Section, the following table includes, but is not limited to, the items required to be submitted:

Item Description	**Shop Drawings**	**Product Data**	**Schedules**	**Installation Data**	**Parts Lists**	**Wiring Diagram**	**Samples**	**O & M Manual**	**Certificates**	**Warranty**	**Report**	Other
Carrier Pipe		X							X			
Casing Pipe		X										
Casing Spacers		X		X								
Casing End Seals		X		X								

1.4 EXISTING CONDITIONS

A. The existing piping & other utilities shown on the Contract Drawings is based on the best available information. The Engineer makes no guarantee as to the accuracy of the locations or type of piping or utility depicted. All new piping which ties into existing lines must be made compatible with that piping.

B. So that piping conflicts may be avoided, Contractor shall locate the utility (vertically & horizontally) well ahead of the pipe laying operation to confirm exact locations of existing piping before installing any new piping.

C. Contractor shall provide all fittings and adapters necessary to complete all connections to existing piping.

PART 2 - PRODUCTS

2.1 CARRIER PIPE

A. Carrier pipe shall be as specified in the applicable Division 33 section unless otherwise noted.

2.2 CASING PIPE

A. Casing pipe shall be steel, plain end, have a minimum yield point strength of 35,000 psi and conform to ASTM A 252 Grade 2 or ASTM A 139 Grade B without hydrostatic tests. The steel pipe shall have welded joints and be in at least 18-foot lengths.

B. The diameter of the casing pipe shall be as follows:

Carrier Pipe Nominal Diameter (Inches)															
4	6	8	10	12	14	15	16	18	20	21	24	27	30	33	36
Casing Pipe Nominal Diameter (Inches)															
10	12	16	18	20	24	24	30	30	30	36	36	42	48	50	50

For carrier pipe sizes greater than 36 inches nominal diameter, the casing pipe diameter size shall be determined by the Engineer or as shown on the Contract Drawings.

C. The wall thickness of the casing pipe shall be as follows:

Casing Pipe Nominal Diameter (Inches)								
Under 20	20 & 22	24	30	36	38	42	48	50
Casing Pipe Nominal Thickness (Inches) - Under Paved Roads Under CSX Right of Way if Coated or Cathodically Protected								
.250 (1/4")	.281 (9/32")	.312 (5/16")	.406 (13/32")	.469 (15/32")	.500 (1/2")	.562 (9/16")	.625 (10/16")	.656 (21/32")
Casing Pipe Nominal Thickness (Inches) - Under CSX Right of Way Uncoated and Cathodically Unprotected								
.312 (5/16")	.344 (11/32")	.375 (3/8")	.469 (15/32")	.532 (17/32")	.562 (9/16")	.625 (5/8")	.688 (11/16")	.719 (23/32")

However, should casing pipe thickness be specified or required on Highway or Railroad permit approval sheets, said permit thickness requirement shall govern. Permit approval sheets will be made available to the Contractor.

2.3 CASING SPACERS

A. Stainless Steel Casing Spacers: Stainless steel casing spacers shall be bolt-on style with a shell made in two sections of heavy T-304 stainless steel. Connecting flanges shall be ribbed for extra strength. The shell shall be lined with a PVC liner .090 inches thick with 85-90 durometer. All nuts and bolts are to be 18-8 stainless steel. Runners shall be made of ultra high molecular weight polymer with inherent high abrasion resistance and a low coefficient of friction. Runners shall be supported by risers made of heavy T-304 stainless steel. The supports shall be mig welded to the shell and all welds shall be fully passivated. Stainless steel casing spacers shall be made by Cascade Waterworks Mfg. Co., or equal.

B. Solid Polyethylene Casing Spacers (to be used with PVC pipe only): Solid polyethylene casing spacers shall be bolt-on style with a shell made in two sections. Carrier pipe shall be wrapped with rubber strap inside casing space to prevent slippage. All nuts and bolts are to be 18-8 stainless steel. Solid polyethylene casing spacers shall be made by Calpico Inc., Advance Products & Systems, Inc., or equal.

2.4 CASING END SEALS

A. The annual space between the steel casing pipe and the carrier pipe shall be sealed by use of interlocking link pipe seals. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and wall sleeve. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with pressure plate under each bolt head and nut. After the seal assembly is positioned in the sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the pipe and wall sleeve. Bolts and hardware shall be constructed of 316 stainless steel. Seals shall be “Link-Seal Model S-316 Modular Seal” as manufactured by PSI-Thunderline/Link-Seal, Houston, TX, or approved equal.

B. The Contractor shall determine the required diameter of each casing/carrier pipe installation according to the manufacturer's recommendations before ordering and installing the seal, Carrier pipe shall be accurately centered in the casing pipe and link seals shall be sized, installed and tightened in accordance with the manufacturer's instructions or per method approved by the Engineer.

PART 3 - EXECUTION

3.1 CROSSINGS - GENERAL

A. Where designated on the drawings, crossings beneath state maintained roads, not to be disturbed shall be accomplished by boring and jacking a casing pipe.

B. Steel casing pipe for crossings shall be bored and/or jacked (or open cut installed where indicated on the Drawings) into place to the elevations shown on the drawings. All joints between lengths shall be solidly butt-welded with a smooth non-obstructing joint inside. The casing pipe shall be installed without bends. The carrier pipe shall be installed after the casing pipe is in place, and shall extend a minimum of 2 feet beyond each end of the casing to facilitate making joint connections. The carrier shall be braced and centered with casing spacers within the casing pipe to preclude possible flotation. Casing spacers shall be installed a maximum of 8 feet apart along the length of the carrier pipe within the casing pipe, within 2 feet of each side of a pipe joint, and the rest evenly spaced. The height of the supports and runners combined shall be sufficient to keep the carrier pipe at least 3/4 inches from the casing pipe wall at all times. Manufacturer's recommendations may govern these requirements.

C. At each end of the casing pipe, the carrier pipe shall be sealed with casing end seals. The end seals shall extend a minimum of 12 inches in each direction from the end of the casing pipe.

D. Wood skids are not an acceptable method of supporting the carrier pipe.

3.2 CROSSING - RAILROAD

A. All water or sewer line crossings of railroads shall be prominently marked at railroad right-of-way lines, on both sides of the track crossing, by durable, weatherproof signs located over the center of the water line. When possible, signs shall be located so that when standing at one sign, the other marker is visible. Signs shall show the following:

1. Name and address of Owner.
2. Contents of pipe.
3. Pressure in pipe.
4. Pipe depth below grade at point of sign.
5. Emergency telephone number in event of pipe rupture.

B. Contractor must adhere to all safety requirements of the Railway line involved in the crossing.

1. All operations shall be conducted so as to not interfere with, interrupt, or endanger the operation of trains nor damage, destroy, or endanger the integrity of railroad facilities.

The Contractor shall provide written acknowledgment to the Railway line that the Contractor and its employees have received, read, and understood the safety rules. Operations will be subject to inspection at any and all time.

2. All cranes, lifts, or other equipment that will be operated in the vicinity of the railroad's electrification and power transmission facilities shall be electrically grounded in an approved manner.
3. At all times, while work is in progress, a field supervisor with no less than 12 months experience in the operation of the equipment being used shall be present. If boring equipment or similar machines are being used, the machine operator shall also have a minimum of 12 months experience in the operation of the equipment being used.
4. Whenever equipment or personnel are working closer than 15 feet from the centerline of an adjacent track, that track shall be considered as being obstructed. Operations closer than 15 feet from the centerline of the track shall be conducted only with the permission of, and as directed by, a duly qualified railroad employee present at the site of the work.
5. Crossing the tracks at grade by equipment and personnel is prohibited except by prior arrangement with, and as directed by, the railroad line. A separate permit must be obtained, by the Contractor, for any "at grade" crossing of the tracks.

C. All railroad costs incurred by the Railway line due to work associated with the crossing (inspection, flagging, track work, etc.) shall be paid by the Owner. However, it is the Contractor's responsibility to coordinate the work with the Railway.

D. Contractor shall notify the Railway line's area engineer a minimum of 14 working days prior to desired start of construction.

3.3 BORING AND JACKING

A. The Contractor shall excavate his own pits, as he may deem necessary, and will set his own line and grade stakes which shall be checked by the Engineer. Permits, as required, will be furnished or obtained by the Owner, but shall be in the Contractor's hands before any excavating is commenced.

B. The boring method shall consist of pushing the pipe into the earth with a boring auger rotating within the pipe to remove the spoil.

1. The front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger from leading the pipe so that there will be no unsupported excavation ahead of the pipe.
2. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. If the obstruction cannot be removed without excavation in advance of the pipe, the pipe shall be abandoned in place and immediately filled with grout.
3. The over-cut by the cutting head shall not exceed the outside diameter of the pipe by more than 2 inches. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe by more than approximately 1 inch, grouting or other approved methods must be used to fill such voids.
4. The face of the cutting head shall be arranged to provide a reasonable obstruction to the free flow of soft or poor material.

5. Any method which does not have this boring arrangement will not be permitted. Contractor's boring arrangement plans and methods must be submitted to, and approved by, the Engineer.

C. In the event an obstruction is encountered in boring which cannot be removed, and it becomes necessary to withdraw the casing and commence elsewhere, the hole from which the casing is withdrawn shall be completely backfilled with coarse sand rammed in.

D. Insurance to be furnished by the Contractor to cover this type of work shall be adequate to meet the requirements of the Railroad and/or State or County Highway Departments. Insurance shall consist of comprehensive general liability and automobile liability insurance.

E. Before award of the contract, the Contractor shall furnish a statement of his experience of such work, or if inexperienced, shall advise the Owner as to whom he will sublet the work and give a statement of the experience of the subcontractor, which shall be satisfactory to the Owner.

3.4 CONTRACTOR'S RESPONSIBILITIES

A. Obtain a copy of the Highway Encroachment and/or Railroad Permit before beginning construction.

B. Attend a preconstruction meeting at the construction site with the City Inspector, Railroad Inspector, Highway Inspector Engineer, and Contractor being present.

END OF SECTION 330523

SECTION 330524 – HORIZONTAL DIRECTIONAL DRILLING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to utilize the trenchless technology of horizontal directional drilling (HDD) for the installation of below grade piping and appurtenances as specified herein. Where open cut excavation is required, refer to Specification Section 331113. Work shall include, but not be limited to, proper installation, testing, and restoration of the site and damaged underground utilities. Installation procedures shall be in accordance with the approved North American Society for Trenchless Technology (NASTT) "HDD Good Practices Guideline".

B. The HDD piping shall be is HDPE DR11, AWWA C906 pipe. The HDPE shall be DRISCOPLEX PE 4710 HDPE (DR11) pipe as manufactured by Chevron Philips Chemical Coany, Inc. (formerly Philips Product Company), JM Eagle PE 4710 HDPE Water/Sewer (DR11) pipe as manufactured by J-M Manufacturing Company, Inc., ISCO PE 4710 HDPE (DR11) pipe as manufactured by ISCO Industries, LLC, or Engineer approved equal.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this Section.

B. Piping is specified in Division 33 Specification sections.

1.3 EXISTING CONDITIONS

A. The existing piping and other utilities shown on the Contract Drawings is based on the best available information. The Engineer makes no guarantee as to the accuracy of the locations or type of piping or utility depicted. All new piping which ties into existing lines must be made compatible with that piping.

B. So that piping conflicts may be avoided, Contractor shall locate the utility (vertically and horizontally) well ahead of the pipe laying operation to confirm exact locations of existing piping before installing any new piping.

C. Contractor shall provide all fittings and adapters necessary to complete all connections to existing piping.

1.4 SUBMITTALS

A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering. Comply with provisions of Section 013323.

B. At the time of submission, the Contractor shall, in writing, call Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications.

C. Work Plan - Prior to beginning work, the Contractor must submit to the Engineer an HDD Work Plan outlining the procedure and schedule to be used to execute the project. Work Plan should be realistic and document the thoughtful planning required to successfully complete the project, based on the actual working conditions anticipated for this project. The HDD Work Plan should include a description of:

1. All equipment to be used including drill rigs, down-hole tools, drilling heads, electronic guidance system, and fusing or coupling equipment.
2. Drilling materials and mud system, including drilling additives and drilling fluid mixtures.
3. A list of personnel and their qualifications and experience (including backup personnel in the event an individual is unavailable).
4. A list of subcontractors and identification of subcontractor work tasks.
5. A schedule of work activity including detailing work crews, scheduling of pull-ins, material deliveries and other required work tasks.
6. A safety plan (including MSDS of any potentially hazardous substances to be used).
7. An environmental protection plan.
8. The location of the drill rig setups at the entry and exit points.
9. Groundwater control and dewatering procedures.
10. Calculations showing the anticipated pull-in forces for each section to be installed, and verification that the pull-in forces and critical buckling forces are acceptable for the pipe material specified.
11. Material lay-down area plans.
12. Drilling mud disposal plan.
13. Contingency plans for possible problems including overstressing pipe during pull-in, pipe/coupling failure or damage during pull-in, unanticipated obstructions during drilling, pilot hole collapse, drilling mud blowouts, surface settlement and/or surface heaving, and drilling rig breakdowns.
14. The methodology to be used to connect pipe sections which are directionally drilled. The methodology shall include, at a minimum, discussions of:

    a. How, when and where the pipes will be fused (on grade).
    b. How the bore hole will be developed and how horizontal and vertical alignment control of the bore will be maintained.
    c. How the pipe will be installed in the bore hole.
    d. How any buried utility conflicts (if any) over the top of the bored pipe will be dealt with.

15. A plan for dealing with thermal expansion and contraction during and after construction. The anticipated operating range of the pipe and water within the pipe will be from 32 degrees F to 70 degrees F. The plan should include calculations showing the maximum expansion and contraction and a listing of anchors and restraints intended to be used and where they will to be installed.
16. A plan for disposal of excess excavated material and groundwater collected during drilling. Disposal methods shall comply with local, County, State and Federal requirements.

D. Equipment - The Contractor shall submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the project including but not limited to the following: drilling rig and drilling rods, drilling head and back-reamers, drilling materials and additive fluids, mud system (including mud motors and recovery systems, if applicable), downhole tools, electronic guidance system, pipe fusion or joining systems, and rig safety systems. Calibration records for guidance systems shall be included indicating that calibration has been performed within 6 months of start of drilling.

1.5 QUALITY ASSURANCE

A. The requirements set forth in this document specify a wide range of procedural precautions necessary to ensure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized under the Contract.

B. Use of horizontal directional drilling for installation piping specified in Division 33 hereinafter shall be in Division 33 hereinafter accordance with the latest revision of ASTM F-1962.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback the pipe, a mixing and delivery system for drilling fluid of sufficient capacity to successfully complete the installation, a guidance system to accurately guide boring operations, control and containment of drilling fluid, along with trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of the project.

2.2 DRILLING SYSTEM

A. Drilling Rig - The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the installation. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations. There shall be a system to detect electrical current from the drill string and have an audible alarm that automatically sounds when an electrical current is detected.

B. Drill Head - The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.

C. Mud Motors (if required) - Mud motors shall be of adequate power to turn the required drilling tools.

D. The drilling equipment shall be capable of providing continuous support to the drilled void through the application of pressure to the drilling fluid and the selection of appropriate drilling fluids to "bind" the soil.

2.3 GUIDANCE SYSTEM

A. The Contractor shall supply all components and materials to install, operate, and maintain the guidance system.

B. The entry angle for all HDD operations shall be 12 degrees from horizontal (0.21255 ft/ft).

C. A Magnetometer-accelerometer type Guidance System (MGS) probe or proven (non-experimental) gyroscopic probe and interface shall be used to provide a continuous and accurate determination of the location of the drill head during the drilling operation. The guidance system shall enable the driller to continuously guide the drill head by providing immediate information at the tool face, azimuth (horizontal) and inclination (vertical) directions. The guidance system shall be accurate and calibrated to manufacturer's specifications. The vertical location of the tool referenced to USGS elevations shall be capable of being continuously determined. The Contractor shall include the cost of additional survey and guidance systems necessary to achieve specified accuracy.

D. The MGS and wire line tracking system shall be set up and operated by personnel trained and experienced with the system. The Contractor shall be aware of any geo-magnetic anomalies and shall consider such influences in the operation if using a magnetic guidance system.

E. The accuracy of the bore path and resulting pipe profile centerline shall be within 4 feet left or right horizontally of the specified water main alignment and within 2 percent above or below the specified water main profile in any soil or rock condition. The exit point for the bore path and HDD water main shall be within a tolerance of 5 feet short of or 10 feet past the specified exit point.

F. The Contractor shall provide the Engineer with real-time readings from the wire line tracking system to verify the bore path is within the specified accuracy limits prior to pipe pull-back. Real-time readings will be read by the Contractor and Engineer from the tracking system during installation.

2.4 DRILLING FLUID (MUD) SYSTEM

A. Mixing System - A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be sized for adequate storage of the mud mixture. Mixing system shall continually agitate the drilling fluid during drilling operations.

B. Drilling Fluids - Drilling fluid shall be composed of clean water and bentonite clay, utilized as required for the drilling conditions encountered. Water shall be from a clean source with a pH of 8.5 - 10 and/or as per mixing requirements of the manufacturer. Water of a lower pH or with excessive calcium shall be treated by the Contractor with the appropriate amount of sodium carbonate or equal at no additional cost. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall. Additives shall be utilized as required for the drilling conditions encountered. No hazardous additives may be used.

C. Delivery System - The mud pumping system shall have a minimum capacity to supply mud in accordance with the drilling equipment pull-back rating at a constant required pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. A spill protection berm, minimum of 12 inches high and large enough to contain spills up to 1000 gallons, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits, and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage, recycling, or disposal facilities.

2.5 OTHER EQUIPMENT

A. Pipe Rollers and Supports - Pipe rollers and supports shall be used for pipe assembly and during final pipe pull-back whenever the pipe lengths of 10 feet or more occur. Rollers and supports shall be capable of supporting the pipe materials uniformly and shall be equipped with rollers or other low friction systems which do not materially increase pull-back forces. Rollers and supports shall be designed and installed to prevent the pipe from falling off the sides or lifting due to sharp bends either vertically or horizontally. Systems shall be designed to account for pipe twisting/rotation during pull-back.

B. Pipe Rammers - Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of Engineer.

C. Restrictions - Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the Engineer prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribed by the particular conditions of the project.

2.6 PERSONNEL REQUIREMENTS

A. All personnel shall be fully trained in their respective duties as part of the HDD crew and in safety. All drill rig and fluid mixing operators must have at least two years direction drilling experience with the equipment used for this project.

B. A competent and experienced Supervisor with a minimum of five years of experience in directional drilling shall be provided by the Contractor. The Supervisor shall be thoroughly

familiar with the equipment and type of the work to be performed and must be directly in charge and control of the operation at all times during the actual drilling operations.

C. The personnel operating the fusion equipment for HDPE pipe shall have at least five years of experience with fusion equipment and shall be certified by the pipe or fusion equipment manufacturer. Personnel who are unqualified, incompetent, or otherwise not suitable for the performance of this project shall be removed from the job site and replaced with suitable personnel.

2.7 COUPLINGS, FITTINGS AND PIPE JOINTS

A. All HDPE pipe and fittings shall be made of a high-density polyethylene pipe compound with extra high molecular weight that meets the requirements for Type III, Grade P34 polyethylene material as defined in ASTM D1248.

B. Pipes shall be joined to one another and to polyethylene fittings by thermal butt-fusion or by socket fusion in accordance with ASTM D3261. The tensile strength at yield of the butt-fusion joints shall not be less than the pipe. A specimen of pipe cut across the butt-fused joint shall be tested in accordance with ASTM D638.

C. Joining of pipe sections shall be performed in accordance with the procedures recommended by the pipe manufacturer. Joints between pipe sections shall be smooth on the inside and thermal projection beads shall not be greater than 3/16-inch.

PART 3 - EXECUTION

3.1 PREPARATION

A. The Engineer must be notified 48 hours in advance of starting work. The Engineer's approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate.

B. The Contractor shall be fully responsible for all damages resulting from their failure to comply with all applicable state, federal and local regulations, and requirements of these specifications.

C. The Contractor shall provide all material, equipment, and facilities required for directional drilling. Proper alignment and elevation of the borehole shall be consistently maintained throughout the directional drilling operation.

D. The entire drill path shall be accurately surveyed by the Contractor with entry, exit, and connection stakes placed prior to commencement of drilling the intended entry, exit, and connection points. The drill path shall be surveyed by the Contractor for any surface geo-magnetic variations or anomalies.

E. If obstructions to the drilling operations are encountered, the Contractor is responsible for investigating and resolving obstructions within requirements of these specifications, permits obtained for this project, and appropriate authority's regulations.

F. The Contractor shall place filter sock between all drilling operations and any surface drainage paths, wetlands, waterways, or other similar areas. Additional environmental protection necessary to contain hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains, and other measures.

G. The Contractor shall provide adequate supplies of pipe, drilling fluids, drilling rods, water, pipe supports and rollers, and fuel to allow continuous operations to be maintained once operations begin. Problems resulting from failure of the Contractor to maintain continuous operations shall not be cause for additional compensation or time.

3.2 GENERAL

A. Location readings shall be recorded after advancement of each successive drill pipe (no more than 20-foot intervals) and the readings plotted on the field copy of the plan and profile drawings. Vertical alignment shall be shown based on true elevation as determined by survey and not referenced from the surface grade. Access to all recorded readings and plan and profile information shall be made available to the Engineer and the Owner at all times.

B. All drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal at the Contractor's option. No fluids shall be allowed to enter any unapproved areas or natural waterways. During and following completion of directional drilling operations, the drilling mud and cuttings shall be disposed of by the Contractor at an approved dumpsite.

C. The deflection radius of the installed pipeline shall not exceed 70 percent of the minimum allowable bend radius allowed by the pipe manufacturer.

D. The Contractor shall take precautions to ensure settlement or heaving of surface or underground structures above directional drilling operations will not occur. For grade sensitive features such as railroad tracks, levee crossings, and sewers, an existing conditions survey shall be performed to document existing conditions. The existing conditions survey shall include detailed topographical survey of all features which may be affected by the proposed work such as ground surface, pavement surface, railroad ties, ballast and tracks, signals, or other cast in place structures, manholes, sewers, overhead utility poles, and other surface or subsurface features within 10 feet horizontally of the proposed alignment. Evidence that voids are being created, subsidence is occurring, or puncture/damage to underground utilities is occurring will be sufficient cause to require remedial action without additional compensation.

E. Protect all existing utilities, site objects, and new work, which are to remain in service.

F. Reroute around or excavate and remove obstacles and debris blocking progress of drilling, including but not limited to, cobbles, boulders, timbers, construction debris, concrete spillage from previous construction, abandoned utilities discovered during installation, and unused piling or caissons. The Contractor shall properly cap, plug, or bulkhead abandoned utilities which are discovered.

3.3 DRILLING PROCEDURE

A. Site Preparation - Prior to any alterations to work-site, Contractor shall photograph or video tape entire work area, including entry and exit points. One copy shall be given to the Engineer and one copy to remain with Contractor for a period of one year following the completion of the project. Work site as indicated on drawings, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.

B. Drill Path Survey - Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If Contractor is using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.

C. Environmental Protection - Contractor shall have in place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations. Also, all erosion control facilities shall be in accordance with Specification Section 312500, hereinafter, and the standard detail drawing for erosion control included in the contract drawings.

D. Safety - Contractor shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to Engineer.

3.4 PILOT HOLE INSTALLATION

A. The pilot hole shall be drilled on the bore path with no deviations at any point greater than the specified accuracy vertically and horizontally. The pilot hole on the bore path shall not deviate more than 2 percent of the depth or one foot horizontally over the length of the bore. If the pilot hole does deviate from the bore path more than specified, vertically or horizontally at any point, Contractor shall notify Engineer. Engineer may require Contractor to pull-back and re-drill from the location along the bore path before the deviation if design alterations are not possible. In the event of a drilling fluid fracture or blowout, inadvertent returns, or returns lost during pilot hole drilling operations, Contractor shall cease drilling and take immediate steps to resolve the problem. If Contractor is unable to resolve problem in existing pilot hole, redrilling may be required at no additional cost. Contractor shall discuss re-drilling options with Engineer and work shall proceed as agreed.

B. Upon completion of pilot hole phase of the operation, an initial set of "As-Built" Record Drawings in electronic format shall be submitted to the Engineer and Owner within 1 working day of pilot hole completion. These drawings shall include the pilot hole bore path plan and profile within 0.25 feet at 25-foot intervals, as well as locational survey reports as recorded during drilling operations.

C. Engineer and Owner will review pilot hole information and determine if the location and elevation of the pilot hole are suitably close to the designed alignment and will complete this review within 1 working day following receipt from Contractor. Should Contractor decide the

initiate the hole enlarging phase of the operation prior to approval of the pilot hole, Contractor shall bear all risk for incorporating alterations requested following review of the pilot hole information by Engineer or Owner.

3.5 PIPE INSTALLATION

A. Upon approval of the pilot hole alignment by the Engineer and Owner, the hole opening or enlarging phase of the installation shall begin. The bore hole diameter shall be increased to accommodate the pull-back operation of the required carrier pipe. The type of hole opener or back reamer to be utilized shall be determined by the Contractor based on the types of subsurface rock and soil conditions encountered during the pilot hole drilling operation. The Contractor shall select the proper reamer type with the final hole opening being a maximum of 1.5 times the largest outside diameter pipe system component to be installed in the bore hole.

B. The open bore hole shall be stabilized by means of bentonite drilling slurry pumped through the inside diameter of the drill rod and through openings in the reamer. The drilling slurry must be in a homogenous, flowable state serving as an agent to carry the loose cuttings to the surface through the annulus of the borehole. The volume of bentonite mud required for each pull-back shall be calculated based on soil/rock conditions, largest diameter of the pipe system component, capacity of the bentonite mud pump, and the speed of pull-back as recommended by the bentonite drilling mud manufacturer. The bentonite slurry shall be contained at the exit or entry site of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation or shall be hauled by the Contractor to a disposal site approved by the Engineer or Owner.

C. The pipe sections shall be joined together according to the pipe manufacturer's specifications. Butt fused joints shall be true alignment and shall have uniform roll-back beads resulting from proper temperature and pressure. Joints shall be allowed adequate cooling time before removal of pressure. Joints shall be watertight and have strength equal to that of the adjoining pipe sections.

D. A pulling eye shall be attached to a pipe pulling head on the lead section of pipe which in turn shall be attached to a swivel on the end of the drilling pipe.

E. Tracer wire shall not be required for HDD portions of the water main.

F. The pipe shall be elevated to the approximate angle of entry and supported by means of rollers and supports, to allow for the "free stress" situation as the pipe is pulled into the exit hole toward the drill rig. The pull-back phase of the HDD operation shall be carried out in a continuous manner until the pipe reaches the original entry side of the bore. The annular space between the pipe and the bore hole shall be filled with the bentonite mud to support and stabilize the pipe. The Contractor shall use caution to ensure that the pressure of the bentonite mud does not distort or collapse the pipe.

G. The pipe shall be ballasted during pull-back by completely filling the inside diameter of the pipe with water.

3.6 JOINING TO ADJACENT PIPE SECTIONS

A. When adjacent sections of HDD pipe are to be connected to each other, the Contractor shall excavate a sufficiently large area so that the adjoining sections of pipe can be installed without sags or humps so there are no high points created.

B. Excess pipe lengths from drilling operations shall be cut off accurately to connect to adjoining sections with a single coupling or butt fuse.

C. Trenching and backfilling operations shall comply with Specification Section 331113.

3.7 PIPE HANDLING

A. Care shall be taken during transportation of the pipe such that it will not be cut, kinked, or otherwise damaged.

B. Ropes, fabric, or rubber protected slings and straps shall be used when handling pipes. Chains, cables, and hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe and pipe fittings shall not be dropped onto the ground.

C. Pipes shall be stored in accordance with manufacturer's recommendations on level ground, free of sharp objects that could damage the pipe. Stacking pipe shall only occur when manufacturer's shipping system is utilized which will not cause deformation of the bottom layers of pipe under anticipated temperature conditions.

D. The handling of the assembled pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp or cutting objects. Slings for handling of the pipeline shall not be positioned at pipe joints. Sections of the pipe with cuts and gouges or excessive deformation shall be removed and replaced.

3.8 TESTING AND INSPECTION

A. Leakage inspection - Perform a preliminary leakage test after each HDD pipe has been fused together for its entire length. Each connected length shall be successfully tested prior to installation by air pressure to 5 psi. The test pressure shall be held for a minimum duration of 15 minutes. The Contractor shall expect and allow for some straightening of the pipe in the laydown area during pressure testing without damage occurring to the pipe.

B. The Contractor shall perform a secondary leakage test immediately after installing each entire HDD pipe into place. This test shall meet the requirements for leakage and deflection in accordance with Specification Section 331113.

C. The Contractor shall perform a final leakage test once all pipe sections have been connected to the pipe water mains prior to and following the HDD portion of the project. The Contractor shall repair all visible or detected leaks.

D. Hydrostatic testing of the HDD pipe shall be performed in accordance with Specification Section 331113.

3.9 SITE RESTORATION

A. Following HDD operations, the Contractor shall demobilize equipment and restore the work sites to their original conditions. All temporary fencing, berms, excess piping and other items used during the HDD operation shall be removed from the work sites.

B. All excavations shall be backfilled and compacted to not less than 95 percent of original density. All drilling mud shall be disposed of by the Contractor.

END OF SECTION 330524

SECTION 331113 – WATER DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required for furnishing and installing all piping and appurtenances specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Valves - Utility Services: Section 331216

B. Horizontal Directional Drilling: Section 330524

1.3 SUBMITTALS

A. A notarized certification shall be furnished for all pipe and fittings that verifies compliance with all applicable specifications.

B. The requirement for this certification does not eliminate the need for shop drawings submittals in compliance with Section 013323.

C. In accordance with the requirements of the General and Special Conditions and this Section, the following table includes, but is not limited to, the items required to be submitted:

Item Description	Shop Drawings	Product Data	Schedules	Installation Data	Parts Lists	Wiring Diagram	Samples	O & M Manual	Certificates	Warranty	Report	Other
Pipe and Fittings		X							X			
Couplings and Adapters		X										
Detectable UG Tape		X		X								
Tracer Wire		X		X								
Trench Baffles		X		X								
PE Tubing		X										
Corp. Stops and Fittings		X		X								

1.4 EXISTING CONDITIONS

A. The existing piping shown on the Contract Drawings is based on the best available information. The Engineer makes no guarantee as to the accuracy of the locations or type of piping depicted. All new piping which ties into existing lines must be made compatible with that piping.

B. So that piping conflicts may be avoided, Contractor shall open up his trench well ahead of the pipe laying operation to confirm exact locations of existing piping before installing any new piping.

C. Contractor shall provide all fittings and adapters necessary to complete all connections to existing piping.

1.5 UTILITY LINE ACTIVITIES COVERED UNDER NATIONWIDE PERMIT # 12

A. All activities involving utility line construction covered under the US Army Corps of Engineers NATIONWIDE PERMIT # 12 shall meet the following conditions:

1. 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 the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity.
2. 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. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.
3. Notification: The permittee must submit a pre-construction notification to the US Army Corps district engineer prior to commencing the activity if any of the following criteria are met:

    a) The activity involves mechanized land clearing in a forested wetland for the utility line right-of-way;
    b) A section 10 permit is required;
    c) The utility line in waters of the United States, excluding overhead lines, exceeds 500 feet;
    d) 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;
    e) Discharges that result in the loss of greater than 1⁄10-acre of waters of the United States;
    f) Permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or

g) Permanent access roads are constructed in waters of the United States with impervious materials.

B. All activities involving utility line construction covered under KENTUCKY GENERAL CERTIFICATION of Nationwide Permit #58 shall meet the following conditions:

The general Water Quality Certification applies to surface waters of the Commonwealth as defined in 401KAR10:001 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.

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.
3. This general water quality certification does not authorize the installation of utility lines in a linear manner within the stream channel or below the top of the stream bank.
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 nationwide permits issued for individual crossings which are part of a larger utility line project where the total cumulative impacts from a single and complete linear project 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 the utility line crossing and roads, only one bank length is used in calculation of the totals.
7 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).
8. 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.
9. Activities that do not meet the conditions of this General Water Quality Certification require an Individual Section 401 Water Quality Certification.
10. Blasting of stream channels, even under dry conditions, is not allowed under this general water quality certification.
11. 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.
12. 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.

13. 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.
14. 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.
15. Activities qualifying for coverage under this General Water Quality Certification are subject to the following conditions:

    a. 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.
    b. 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.
    c. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
    d. Removal of riparian vegetation shall be limited to that necessary for equipment access.
    e. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions.
    f. 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 be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
    g. 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.
    h. 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.
    i. 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.

16. Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

1.6 CONSTRUCTION IN A FLOODPLAIN

A. No material shall be placed in the stream or in the flood plain to form construction pads, coffer dams, access roads, etc. unless prior approval has been obtained from the Environmental and Public Protection Cabinet.

B. 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 the flood plain unless the applicant has received prior approval from the Cabinet to fill within the flood plain.

PART 2 - PRODUCTS

2.1 HIGH DENSITY POLYETHYLENE PIPE

A. General: High density polyethylene pipe shall be DRISCOPLEX PE 4710 HDPE (DR11) pipe as manufactured by Chevron Philips Chemical Company, Inc. (formerly Philips Product Company), JM Eagle PE 4710 HDPE Water/Sewer (DR11) pipe as manufactured by J-M Manufacturing Company, Inc., ISCO PE 4710 HDPE (DR11) pipe as manufactured by ISCO Industries, LLC, or Engineer approved equal.

B. Materials for Polyethylene Pipe:

1. The polyethylene pipe and fittings shall be made of premium, highly engineered PE4710 resin that provides maximum performance benefits to service today's municipal and industrial water needs. The PE4710 material conforms to ASTM D3350 with the cell classification of 445574C/E and is listed with the Plastic Pipe Institute's (PPI) TR4.
2. Pipe made from these resins must have a long-term strength rating of 1,600 psi or more.
3. The polyethylene resin shall contain antioxidants and shall be stabilized with carbon black against ultra-violet degradation to provide protection during processing and subsequent weather exposure.
4. The polyethylene resin compound shall have a resistance to environmental stress cracking as determined by the procedure detailed in ASTM D 1693, Condition B with sample preparation by procedure C of not less than 200 hours.

C. Polyethylene Pipe and Fittings:

1. The pipe shall be designed for a pressure rating of 200 psi (DR11).
2. Each length of pipe shall be marked, at no more than 10-foot intervals, with the following information:

    a. Nominal Pipe Size
    b. Type Plastic Material - PE3408
    c. Pipe Pressure Rating
    d. Manufacturer's Name, Trademark and Code

3. All pipes shall be made from virgin material. No rework compound.
4. Pipe shall be homogenous throughout, and be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.
5. Fittings for the polyethylene pipeline shall be molded or fabricated from the same

material as specified hereinbefore for the high-density polyethylene pipe.

6. Fittings for bends 22-1/2 degrees or greater shall be provided as shown on the Drawings. For alignment changes of less than 20 degrees deflection, the pipe may be laid in curves with a radius of 100 feet or greater.
7. All run-of-the-pipe fittings shall be fusion welded into the pipeline. Tee branches shall be of the size shown on the Drawings and shall be furnished with flanged ends per ANSI B-16.1. All fittings shall be factory-made.
8. Fittings shall be capable of withstanding the same pressure and loading conditions specified for the pipe.
9. Wye branches shall be true wyes.
10. The pipe shall be Iron Pipe Size (IPS).

D. Pipe Jointing:

1. Pipe to be joined by leakproof, thermal, butt fusion joints. All fusion must be done by personnel trained by the pipe supplier using tools approved by the pipe supplier.
2. The fusion machine shall have hydraulic pressure control for fusing 2 pipe ends together; it shall include pressure fusion indicating gauges to correctly monitor fusion pressures. The machines correctly monitor fusion pressures. The machines shall be equipped with an electric or gasoline engine powered facing unit to trim irregularities from the pipe ends. The heating plate on the fusion machine shall be electrically heated and thermostatically controlled and shall contain a temperature gauge for monitoring temperature.
3. Joint strength must be equal to that of adjacent pipe as demonstrated by tensile test. In addition, results of tensile impact testing of joint should indicate a ductile rather than a brittle fracture. The external appearance of fusion bead should be smooth without significant juncture groove.
4. Threaded or solvent cement joints and connections are not permitted.

E. Joining, Terminating or Adapting by Mechanical Means:

1. The polyethylene pipe shall be connected to systems or fittings of other materials by means of an assembly consisting of a polyethylene flange adapter butt-fused to the pipe, a backup ring of either cast iron, steel, or high silica aluminum alloy made to ANSI B-16.1 dimensional standards (with modified pressure ratings), bolts of compatible material (insulated from the fittings where necessary) and a gasket of reinforced black rubber, or other material approved by the Engineer, cut to fit the joint. In all cases, the bolts shall be drawing up evenly and in line.
2. Termination of valves, or fittings such as tees, bends, etc., made of other materials shall be by the flange assemblies specified hereinbefore. The pipe adjacent to these joints and to joints themselves must be rigidly supported for a distance of one pipe diameter or 1 foot, whichever is greater, beyond the flange assembly.
3. Appurtenances must be placed on their own foundations, unsupported by the pipe, in accordance with the detail plans.

F. Tools and Procedures:

1. Fusion jointing and other procedures necessary for correct assembly of the polyethylene pipe and fittings will be done only by personnel trained in those skills by the pipe supplier.

2. Only those tools designed for aforementioned procedures and approved by the pipe supplier shall be used for assembly of pipe and fittings to ensure proper installation.

2.2 MECHINCAL JOINT PIPE RESTRAINTS

A. Restrained Follower Glands for HDPE Pipe: Restraint for standard mechanical joint fittings on HDPE shall be incorporated in the design of the follower gland and shall utilize multiple wedge segments that act against the pipe, increasing their resistance as the line pressure increases. The assembled joint shall maintain the maximum flexibility and deflection of all nominal pipe sizes after burial. Restraining gland, wedge segments, and actuating bolts shall be manufactured of high strength ductile iron conforming to the requirements of ASTM A536, Grade 65-45-12. Wedge segments shall be heat treated to a hardness of 370 BHN minimum. Dimensions shall be compatible with standardized mechanical joints conforming to the requirements AWWA C111/ANSI A21.11 and AWWA C153/ANSI 21.53 (latest revision). Breakaway tops shall be incorporated in the design of the actuating bolts to visually ensure proper torque. The actuating bolts must ensure precise and consistent operating torque of the breakaway top. The design of the restraining device shall be such that the gland body evenly bears the stress of the restraining load. The mechanical joint restraining devices shall have a minimum working pressure rating of 350psi for sizes 3 inches to 12 inches and 250 psi for 14 inches and larger and provide no less than a safety factor of 2:1. Restraint shall be UL Listed and FM approved in applicable sizes. The restraints shall be One Lok Series SLCE as manufactured by SIGMA, Series 2000PV as manufactured by EBAA Iron, or Engineer approved equal.

2.3 COUPLING AND ADAPTORS

A. Flexible couplings shall be of the sleeve type with a middle ring, two wedge shaped resilient gaskets at each end, two follower rings, and a set of steel trackhead bolts. The middle ring shall be flared at each end to receive the wedge portion of the gaskets. The follower rings shall confine the outer ends of the gaskets, and tightening of the bolts shall cause the follower rings to compress the gaskets against the pipe surface, forming a leak-proof seal. Flexible couplings shall be steel with minimum wall thickness of the middle ring or sleeve installed on pipe being 5/16-inch for pipe smaller than 10 inches, 3/8-inch for pipe 10 inches or larger. The minimum length of the middle ring shall be 5-inches for pipe sizes up to 10 inches and 7 inches for pipe 10 inches to 30 inches. The pipe stop shall be removed. Gaskets shall be suitable for 250 psi pressure rating or at rated working pressure of the connecting pipe. Couplings shall be harnessed and be designed for 250 psi.

B. Flanged adapters shall have one end suitable for bolting to a pipe flange and the other end of flexible coupling similar to that described hereinbefore. All pressure piping with couplings or adapters shall be harnessed with full threaded rods spanning across the couplings or adapters. The adapters shall be furnished with bolts of an approved corrosion resistant steel alloy, extending to the adjacent pipe flanges. Flanges on flanged adapter (unless otherwise indicated or required) shall be faced and drilled ANSI B16.1 Class 125.

C. Flexible couplings and flanged adapters shall be as manufactured by Dresser, Smith-Blair, or equal, per the following, unless otherwise specified and/or noted on the Drawings:

D. Steel couplings for joining same size, plain-end, steel, cast iron, and PVC plastic pipe.

Dresser	Smith-Blair
Style 138	411

E. Transition couplings for joining pipe of different outside diameters.

Dresser	Smith-Blair
Style 162 (4" to 12")	413 steel (2" to 24")
Style 62 (2" to 24")	415 steel (6" to 48")

F. Flanged adapters for joining plain-end pipe to flanged pipe, fittings, valves and equipment.

Dresser	Smith-Blair
Style 127 cast (3" to 12")	912 cast (3" to 12")
Style 128 steel (3" to 48" C.I. Pipe)	913 steel (3" and larger)
Style 128 steel (2" to 96" steel pipe)	

2.4 DETECTABLE UNDERGROUND UTILITY WARNING TAPES

A. Detectable underground utility warning tapes which can be located from the surface by a pipe detector shall be installed directly above nonmetallic (PVC, polyethylene, concrete) pipe.

B. The tape shall consist of a minimum thickness 0.35 mils solid aluminum foil encased in a protective inert plastic jacket that is impervious to all know alkalis, acids, chemical reagents and solvents found in the soil.

C. The minimum overall thickness of the tape shall be 5.0 mils and the width shall not be less than 2 inches with a minimum unit weight of 2-1/2 pounds/1 inch x 1,000 feet. The tape shall be color coded and imprinted with the legend as follows:

Type of Utility	Color Code	Legend
Water	Blue	Caution Buried Waer Line Below

D. Detectable underground tape shall be "Detect Tape" as manufactured by Allen Systems, or equal.

E. Installation of detectable tapes shall be per manufacturer's recommendations and shall be as close to the grade as is practical for optimum protection and detectability. Allow a minimum of 18 inches between the tape and the line.

F. Payment for detectable tapes shall be included in the linear foot price bid of the appropriate bid item(s) unless it is listed as a separate payment item in the bid schedule.

2.5 TRACER WIRE

A. Tracer wire shall be 12-gauge copper wire with 30-mil polyethylene jacket. Tracer wire shall be installed with all buried piping, "duct" taped to top of pipe.

B. Split Bolt connectors are required when connecting two pieces of tracer wire. Wire and connector shall be wrapped with electrical tape.

C. Tracer wire shall be brought up into locator boxes with grounding devices. Locator boxes shall be valve boxes with a polystyrene donut that fits around the box to serve as a termination point for tracer wire. Locator boxes shall be installed at a maximum of 3000 linear feet apart, or where shown on the Drawings.

D. Payment for tracer wire and boxes shall be included in the linear foot price bid of the appropriate bid item(s) unless it is listed as a separate payment item in the bid schedule

2.6 CONCRETE PIPE ANCHORS, THRUST BLOCKS, CRADLE OR ENCASEMENT

A. Where indicated on the Drawings, required by the Specifications or as directed by the Engineer, concrete pipe anchors, thrust blocks, cradles or encasements shall be installed.

B. Concrete shall be 3000 psi, and reinforcing bars shall be installed as indicated on the details.

2.7 PREFABRICATED TRENCH BAFFLES

A. Where indicated on the Drawings, required by the Specifications, or as directed by the Engineer, Contractor shall install pre-fabricated trench baffles in the pipeline trench.

B. The baffle shall be self-supporting, made of ABS (Acryonitrile Butadiene Styrene) or comparable material, and shall provide a watertight seal around the pipe by use of an elastomeric PVC flexible coupling. The purpose of the baffle is to stop the flow of groundwater along the trench, and around the pipe. The trench baffle shall be "Ripley's Dam" as manufactured by EJP, or equal.

2.8 CONNECTION OF NEW WATER MAINS TO EXISTING SYSTEM

A. The Contractor shall connect the new water main to existing water main where shown on the Drawings or directed by the Engineer, and shall furnish all necessary equipment and materials required to complete the connection.

2.9 DUCTILE IRON FITTINGS

A. Fittings shall be pressure class 350 ductile iron and have mechanical-joints or push-on joints in accordance with ANSI/AWWA C110/A21.10, latest revision and shall conform to the details and dimensions shown therein. Fittings shall have interior cement-mortar lining as specified hereinbefore for the pipe. Compact ductile iron fittings meeting the requirements of ANSI/AWWA C153/A21.53, latest revision, will also be acceptable.

B. Joints for ductile iron pipe and fittings, as described hereinbefore, shall be rubber-gasket joints and be in accordance with ANSI/AWWA C111/A21.11, latest revision. Joints shall have the

same pressure rating as the pipe or fitting of which they are a part. Joints shall be installed per the manufacturer's recommendations.

2.10 POLYETHYLENE (PE) TUBING

A. Customer service tubing shall be Polyethylene (PE) and conform to AWWA C901, ASTM F 741 with a pipe designation of PE 3408 defined per STM D 3035 for IPS sizes and ASTM D 2737 for CTS sizes. Customer service tubing size 1 inch shall be CTS DR-9 (250 psi).

2.11 CORPORATION STOPS AND FITTINGS FOR LEAK DETECTION VAULTS

A. Corporation stops, of the size required, shall be tapped directly into the water main for Ductile Iron Pipe or by the use of a tapping saddle for PVC and HDPE pipe.

B. Corporation stops shall have AWWA C800-66 C.S. threaded inlet. Outlets shall be suitable for the type of service piping furnished and laid, and the Contractor shall verify compatibility with "iron pipe size" or "copper tubing size" service piping as required before ordering stops.

C. Corporation stops shall be Ford Meter Box Type F1000, F1001, F1002 (as required); Mueller H-15005, H-15006, H-15008, H-15009 (as required); Hayes Series 5200, or equal.

D. Fittings shall be brass.

2.12 SERVICE TAPPING SADDLES

A. Service tapping saddles shall consist of bronze outlet castings for OD controlled HDPE pipe. Saddles shall consist of two wide bronze casted straps that are permanently hinged together on one side and bolted on the other side. The outlet shall have a thick tapping boss with enough surface on the exterior to apply a pipe wrench when installing the corporation stop. Castings shall be sealed to pipeline with O-ring seals. Saddle outlets shall be threaded per AWWA C800.

B. Service tapping saddles shall by style FCDP202 as manufactured by Ford Meter Box Co. or approved equal.

2.13 COMPRESSION COUPLING FITTINGS FOR SERVICE RECONNECTIONS

A. Compression couplings shall comply with AWWA C800-NL. Outlets shall be suitable for the type of service piping furnished and laid, and the Contractor shall verify compatibility with "iron pipe size" or "copper tubing size" service piping as required before ordering stops.

B. Compression couplings shall be Ford Meter Box Type (as required); Mueller 110 Series, (as required); or approved equal.

2.14 COPPER SETTERS

A. Meter setter shall be a copper setter as shown on the standard detail drawing with 3/4-inch double purpose ends and be 7 inches high. It shall be all purpose, designed for 5/8-inch x 3/4-inch meters, and be of sufficient height to raise meters above the bottom of the meter box. Setter shall be Ford as manufactured by the Ford Meter Box Company, or approved equal, and shall have an inverted key inlet valve and dual check backflow preventer outlet valve. Setters shall be installed so that the meter is centered in the box.

B. Copper shall conform to STM B-575 copper alloy #122.

C. For new customer service meter setting, the water service line shall be extended a minimum of 5 feet beyond the meter box on the customer end. The end of the extension shall be capped or plugged to prevent entry of foreign material until the house connection is made.

PART 3 - EXECUTION

3.1 EXCAVATION FOR PIPELINE TRENCHES

A. Unless otherwise directed by the Engineer, trenches in which pipes are to be laid shall be excavated in open cut to the depths required by field conditions or as specified by the Engineer. In general, this shall be interpreted to mean that machine excavation in earth shall not extend below an elevation permitting the pipe to be properly bedded. Installation shall be in accordance with ANSI/AWWA C600 for ductile iron and Cast Iron O.D. (AWWA) PVC pipe or ASTM F-645 for Iron Pipe O.D. (ASTM) PVC pipe except as modified herein.

B. If the foundation is good firm earth and the machine excavation has been accomplished as set out hereinbefore, the remainder of the material shall be excavated by hand, then the earth pared or molded to give full support to the lower quadrant of the barrel of each pipe. Where bell and spigot are involved, bell holes shall be excavated during this latter operation to prevent the bells from being supported on undisturbed earth. If for any reason the machine excavation in earth is carried below an excavation that will permit the type of bedding specified above, then a layer of granular material shall be placed so that the lower quadrant of the pipe will be securely bedded in compact granular fill.

C. Excavation may be undercut to a depth below the required invert elevation that will permit laying the pipe in a bed of granular material to provide continuous support for the bottom quadrant of the pipe. When this method is used, the bedding shall be as set out in Paragraph 3.2 hereinafter.

D. Trenches shall be of sufficient width to provide free working space on each side of the pipe and to permit proper backfilling around the pipe, but unless specifically authorized by the Engineer, trenches shall in no case be excavated or permitted to become wider than 2 feet plus the nominal diameter of the pipe at the level of or below the top of the pipe. If the trench does become wider than 2 feet at the level of or below the top of the pipe, special precaution may be necessary, such as providing compacted, granular fill up to top of the pipe or providing pipe with additional crushing strength as determined by the Engineer after taking into account the actual trench loads that may result and the strength of the pipe being used. The Contractor shall bear the cost of such special precautions as are necessary.

E. All excavated materials shall be placed a minimum of 2 feet back from the edge of the trench.

F. Before laying the pipe, the trench shall be opened far enough ahead to reveal obstructions that may necessitate changing the line or grade of the pipeline.

G. The trench shall be straight and uniform so as to permit laying pipe to lines and grades given by the Engineer. It shall be kept free of water during the laying of the pipe and until the pipeline has been backfilled. Removal of trench water shall be at the Contractor's expense. Dry conditions shall be maintained in the excavations until the backfill has been placed. During the excavation, the grade shall be maintained so that it will freely drain and prevent surface water from entering the excavation at all times. When directed by Owner, temporary drainage ditches shall be installed to intercept or direct surface water which may affect work. All water shall be pumped or drained from the excavation and disposed of in a suitable manner without damage to adjacent property or to other work.

H. Minimum cover of 30 inches shall be provided for all pipelines, except those located in the State Highway Right of Way. Those shall have a minimum cover of 42 inches.

3.2 PIPE BEDDING

A. All pipe shall be supported on a bed of manufactured sand, derived from limestone, with gradation results similar to those shown in the table below. Contractor shall submit gradation test results to the Engineer for approval. Manufactured sand shall be washed and contain no fine particles and or dust. In no case shall pipe be supported directly on rock. Bedding shall be provided in earth bottom trenches, as well as rock bottom trenches. Bedding material shall be free from large rock, foreign material, frozen earth, and shall be acceptable to the Engineer. Bedding shall be a minimum of 6 inches below pipe barrel. Contractor shall be responsible for all dust control associated with the use of Manufactured Sand.

Sieve	% Retained	Cumulated % Retained	% Passing
3/8" (9.5mm)	0	0	100
#4 (4.76mm)	5	5	95
#18 (2.36mm)	43	48	52
#16 (1.18mm)	23	71	29
#30 (0.6mm)	8	79	21
#50 (0.3mm)	4	83	17
#100 (0.15mm)	3	86	14
#200 (75µm)	3.7	89.8	10.2
Pan (0µm)	1.1	100.0	0

B. In all cases the foundation for pipes shall be prepared so that the entire load of the backfill on top of the pipe will be carried on the barrel of the pipe so that none of the load will be carried on the bells.

C. Where flexible pipe is used, the bedding shall be placed up to at least the spring line (horizontal center line) of the pipe. The bedding material and procedures shall conform to ASTM D 2321 and any Technical Specifications set out hereinafter. If conditions warrant, the Engineer may require the bedding to be placed above the springline of the pipe.

D. Where undercutting and granular bedding is involved, it shall be of such depth that the bottom of the bells of the pipe will be at least three inches above the bottom of the trench as excavated. Undercutting is not a separate pay item.

E. In wet, yielding mucky locations where pipe is in danger of sinking below grade or floating out of line or grade, or where backfill materials are of such a fluid nature that such movements of the pipe might take place during the placing of the backfill, the pipe must be weighted or secured permanently in place by such means as will prove effective. When ordered by the Engineer, yielding and mucky materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe. Crushed stone or other such granular material, if necessary, as determined by the Engineer to replace poor subgrade material, shall be a separate pay item and classified as "Special Granular Fill". Removal of poor material is not a separate pay item.

F. Installation shall be in accordance with ASTM D 2321 except as modified hereinafter.

3.3 SPECIAL GRANULAR FILL

A. As noted in Paragraph 3.2 E, granular material for "Special Granular Fill" when directed by the Engineer shall be Department of Transportation crushed limestone, Size #57. Payment for "Special Granular Fill" must have approval from the Engineer prior to installation.

3.4 LAYING PIPE

A. The laying of pipe in finished trenches shall be commenced at the lowest point so the spigot ends point in the direction of flow.

B. All pipes shall be laid with ends abutting and true to line and grade as given by the Engineer. Supporting of pipes shall be as set out hereinbefore under "Pipe Bedding" and in no case shall the supporting of pipes on blocks be permitted.

C. Before each piece of pipe is lowered into the trench, it shall be thoroughly inspected to ensure that it is clean. Each piece of pipe shall be lowered separately unless special permission is given otherwise by the Engineer. No piece of pipe or fitting which is known to be defective shall be laid or placed in the lines. If any defective pipe or fitting shall be discovered after the pipe is laid, it shall be removed and replaced with a satisfactory pipe or fitting without additional charge. In case a length of pipe is cut to fit in a line it shall be so cut as to leave a smooth end at right angles to the longitudinal axis of the pipe.

D. Pipe shall not be laid on solid rock. A pad of granular material as specified in Paragraph 3.2 "Pipe Bedding", shall be used as a pipe bedding. Pipe bedding is not a separate pay item. Irregularities in subgrade in an earth trench shall be corrected by use of granular material.

E. When ordered by the Engineer, unsuitable materials in subgrades shall be removed below ordinary trench depth in order to prepare a proper bed for the pipe.

F. When laying of pipe is stopped for any reason, the exposed end of such pipe shall be closed with a plywood or fabricated plug fitted into the pipe bell, so as to exclude earth or other material, and precautions taken to prevent flotation of pipe by runoff into trench.

G. No backfilling (except for securing pipe in place) over pipe will be allowed until the Engineer has had an opportunity to make an inspection of the joints, alignment and grade, in the section laid.

3.5 BACKFILLING PIPELINE TRENCHES

A. Backfilling of pipeline trenches shall be accomplished as shown on the Drawings and with details set forth hereinafter. Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to grade. The Contractor shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction. In the event pavement is not placed immediately following trench backfilling in paved areas, the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times. Under pavement, all trench backfill shall be in accordance with Method C as shown on the Detail Drawings. All other trench backfill shall be in accordance with Method A or B.

B. Method "A" - Backfilling in Open Terrain.

Backfilling of pipeline trenches in open terrain shall be accomplished in the following manner:

1. The lower portion of the trench, from the pipe bedding to a point 12 inches above the top of the pipe, shall be backfilled with material free from rock and/or material acceptable to the Engineer. This material shall be placed in a manner approved by the Engineer and shall be carefully compacted to avoid displacement of the pipe. Compaction shall be accomplished by hand-tamping or by approved mechanical methods.
2. The upper portion of the trench above the compacted portion shall be backfilled with material which is free from large rock. Incorporation of rock having a volume exceeding one-half cubic foot is prohibited. Backfilling this portion of the trench may be accomplished by any means approved by the Engineer. The trench backfill shall be heaped over or leveled as directed by the Engineer.

C. Method "B" - Backfilling Under Sidewalks & Unpaved Driveways.

Backfilling of pipeline trenches under sidewalks and unpaved driveways shall be accomplished in the following manner:

1. The lower portion of the trench, from the pipe bedding to a point 12 inches above the top of the pipe, shall be backfilled with material free from rock and/or material acceptable to the Engineer. This material shall be placed in a manner to avoid displacement of the pipe. Compaction shall be accomplished by hand-tapping or by approved mechanical methods.
2. The middle portion of the trench, from a point 12 inches above the top of the pipe to a point 6 inches below the grade line, shall be backfilled with material free from rock and/or acceptable to the Engineer. This material shall be placed and compacted in layers of approximately 6 inches. Water (puddling) may be used as required to obtain maximum compaction.

a. Upon approval of the Engineer, the Contractor may backfill the middle portion of the trench with crushed stone, fine gravel, or sand in lieu of materials which require compaction.

3. The upper portion of the trench shall be temporarily backfilled and maintained with crushed stone or gravel until such time as the sidewalk is constructed or the driveway surface is restored.

D. Method "C" - Backfilling Under Streets, Roads, and Paved Driveways.

Backfilling of pipeline trenches under streets, roads and paved driveways shall be accomplished in the following manner:

1. The lower portion of the trench from the pipe bedding to a point 6 inches below the bottom of the pavement or concrete sub-slab, shall be backfilled with # 9 crushed stone.
2. The upper portion of the trench, from a point 6 inches below the bottom of the pavement or concrete sub-slab to grade, shall be backfilled with a base course of dense graded aggregate. At such time that pavement replacement is accomplished, the excess base course shall be removed as required.

E. Trenches outside existing sidewalks, driveways, streets, and highways shall be backfilled in accordance with Method "A". Trenches within the limits of sidewalk and unpaved driveways shall be backfilled in accordance with Method "B". Trenches within the paving limits of existing streets, highways and driveways shall be backfilled in accordance with Method "C". All methods are shown on the Detail Drawings. When directed by the Engineer, the Contractor shall wet backfill material to assure maximum compaction.

1. Before final acceptance, the Contractor will be required to level off all trenches or to bring the trench up to grade. The Contractor shall also remove from roadways, rights-of-way and/or private property all excess earth or other materials resulting from construction.
2. In the event pavement is not placed immediately following trench backfilling in streets and highways, the Contractor shall be responsible for maintaining the trench surface in a level condition at proper pavement grade at all times.

3.6 SETTLEMENT OF TRENCHES

A. Whenever lines are in, or cross, driveways and streets, the Contractor shall be responsible for any trench settlement which occurs within these rights-of-way within one year from the time of final acceptance of the work. If paving shall require replacement because of trench settlement within this time, it shall be replaced by the Contractor at no extra cost to the Owner. Repair of settlement damage shall meet the approval of the Owner.

3.7 CONCRETE THRUST BLOCKS, CRADLE, ANCHORS OR ENCASEMENT

A. Concrete thrust blocks, cradle, anchors or encasement shall be placed where shown on the Drawings, required by the Specifications, or as directed by the Engineer.

B. For cradle and encasement, concrete shall be 3000 psi and shall be mixed sufficiently wet to permit it to flow under the pipe to form a continuous bed.

C. For thrust blocks and anchors, concrete shall be 3000 psi and shall be formed or be sufficiently stiff to maintain the forms indicated on the Details.

D. In tamping concrete, care shall be taken not to disturb the grade or line of the pipe or injure the joints. Concrete placed outside the specified limits or without authorization from the Engineer will not be subject to payment.

E. Water mains shall have concrete thrust or "kicker" blocks at all pipe intersections and changes of direction to resist forces acting on the pipeline. All reducers (increasers) shall be anchored.

3.8 BITUMINOUS CONCRETE HIGHWAY, STREET AND DRIVEWAY REPLACEMENT

A. The Contractor shall replace those sections of existing roads, streets and driveways required to be removed to install the pipelines under this contract. He shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.

B. Prior to trenching, the pavement shall be scored or cut to straight edges at least 12 inches outside each edge of the proposed trench to avoid unnecessary damage to the remainder of the paving. Edges of the existing pavement shall be re-cut and trimmed to square, straight edges after the pipeline has been installed and prior to placing the new base and pavement.

C. Backfilling of the trench shall be in accordance with Method "C" as described hereinbefore. Base course for the paving shall be dense graded crushed limestone furnished and placed in accordance with the current requirements of the Standard Specifications for Road and Bridge Construction of the Department of Transportation, to a depth of 6 inches in roads and streets and 4 inches in driveways.

D. A subslab of reinforced concrete shall be placed for state-maintained highways as indicated on the Drawings. The subslab shall have a minimum thickness of 6 inches. Concrete for the subslab shall be 3000 psi, in accordance with the Details shown on the Drawings.

3.9 UNPAVED DRIVEWAY (CRUSHED STONE) SURFACE REPLACEMENT

A. The Contractor shall replace those sections of existing driveways and parking areas required to be removed to install the pipelines under this contract. He shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.

B. Material for backfilling of the pipeline trench shall be dense-graded aggregate in accordance with Method "B" as described hereinbefore.

3.10 REMOVING AND REPLACING CONCRETE CURB AND GUTTER OR SIDEWALK

A. The Contractor shall remove the curb and gutter or sidewalk when encountered when required for laying the pipe. Only that portion of the curb and gutter or sidewalk needed to lay the pipe shall be removed.

B. Where concrete curb and gutter or sidewalk is removed or disturbed during the construction work, it shall be replaced, using 3000 psi concrete, in fully as good or better condition than that which existed prior to the Contractor's operation.

3.11 REPLACEMENT OF EXISTING MAILBOXES, CULVERTS, CLOTHESLINE POSTS, FENCES AND OTHER SUCH FACILITIES

A. Existing mailboxes, drainage culverts, clothesline posts, fences and the like shall not be damaged or disturbed unless necessary, in which case, they shall be replaced in as good condition as found as quickly as possible. Existing materials shall be reused in replacing such facilities when materials have not been damaged by the Contractor's operations. Existing facilities damaged by Contractor's operation shall be replaced with new materials of the same type at the Contractor's expense. Work in this category is not a pay item.

B. Replacement of paved drainage ditches within highway right-of-way shall be accomplished in accordance with Department of Transportation specifications.

3.12 PORTLAND CEMENT CONCRETE DRIVEWAY REPLACEMENT

A. Wherever Portland cement concrete driveways are removed, they shall be reconstructed to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than existed prior to the operation.

B. The existing concrete paving shall be sawed or cut to straight edges 12 inches outside the edges of the trench or broken out to an existing joint, as directed by the Engineer. The concrete pavement shall be equal to the existing pavement thickness but not less than 6 inches in thickness for driveways.

C. Pavement shall be reinforced with 6 x 6 #10-10 wire mesh and shall be constructed with 3000 psi concrete.

3.13 RIP-RAP STREAM BANK SLOPE PROTECTION

A. The Contractor shall install rip-rap stream bank slope protection at locations directed by the Engineer. Rip-rap slope protection shall be 12 inches thick and shall meet State D.O.T. Standard Specifications.

3.14 TESTING

A. All pressure piping (lines not laid to grade) shall be given a hydrostatic test of at least 1-1/2 times the normal operating pressure of the pipe (at its lowest elevation), but not to exceed the rated working pressure of the pipe or valves. Note: Engineer shall verify test pressure.

B. Testing of HDPE pipe shall be as described in ASTM F2164 Standard Practice for Field Leak Testing of Polyethylene and Crosslinked Polyethylene Pressure Piping Systems Using Hydrostatic Pressure. The hydrostatic leak test procedure shall consist of filling, an initial expansion phase, a test phase and depressurizing. Pipe shall be pressurized to the test pressure and maintained for 4 hours, adding makeup water as needed to keep pressure constant. Then the test pressure shall be reduced by 10 psi and test liquid shall stop being added. The pressure shall be then monitored for one (1) hour. If no visual leakage is observed and the test pressure has not decreased more than 5% of the test pressure for one (1) hour, no leakage is indicated.

C. No water leakage in pipelines, when tested under the hydrostatic test described above, shall be allowed.

D. Contractor shall furnish a recording gauge and recording pressure charts during duration of test. Recording pressure charts shall be turned over to the Engineer at conclusion of tests. The pressure recording device shall be suitable for outside service, with a range from 0-200 psig, 24-hour clock, and shall be approved by the Engineer.

E. Pipelines shall be tested before backfilling at joints except where otherwise required by necessity or convenience.

F. Where leaks are visible at exposed joints, evident on the surface where joints are covered, and/or identified by isolating a section of pipe, the joints shall be repaired and leakage must be minimized, regardless of total leakage as shown by test.

G. All pipe, fittings, valves, and other materials found to be defective under test shall be removed and replaced at no additional expense to the Owner.

H. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with.

I. Where nonmetallic joint compounds are used, pipelines should be held under normal operating pressure for at least three days before testing.

J. The Owner will provide initial water for testing the pressure piping. Should the first test fail to pass, all additional water required for subsequent tests shall be furnished at the Contractor's expense.

K. The cost of testing of pressure piping is incidental and is to be included in the Contractor's unit Contract Price.

3.15 CLEAN UP

A. Upon completion of installation of the piping and appurtenances, the Contractor shall remove all debris and surplus construction materials resulting from the Work. The Contractor shall grade the ground along each side of pipe trenches in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

3.16 DISINFECTION OF POTABLE WATER LINES

A. The new potable waterlines shall not be placed in service–either temporarily or permanently–until they have been thoroughly disinfected in accordance with AWWA Standard C651 latest edition, and to the satisfaction of the Engineer.

B. After testing, a solution of hypochlorite using HTH or equal shall be introduced into the section of the line being disinfected sufficient to insure a chlorine dosage of at least 50 ppm in the main. While the solution is being applied, the water should be allowed to escape at the ends of the line until tests indicate that a dosage of at least 50 ppm has been obtained throughout the pipe. Open and close all valves and cocks while chlorinating agent is in the piping system. The chlorinated water shall be allowed to remain in the pipe for 24 hours, after which a residual of at least 25 ppm shall be obtained. The disinfection shall be repeated until 25 ppm is obtained after which time the main shall be thoroughly flushed until the residual chlorine content is not greater than 1.0 ppm, and then may be connected to the system. Also, no additional payment will be allowed for providing taps for chlorine injection and/or flushing, if necessary. The Contractor is responsible for the disposal of highly chlorinated water flushed from the main, and shall follow the requirements of AWWA C655, latest edition, for dechlorinating the disinfecting water.

C. The new water line shall not be put into service until bacteriological samples taken at the points specified herein are examined and shown to be negative after disinfection, following the requirements of "Standard Methods for Examination of Water and Wastewater". Two consecutive sets of acceptable samples, taken at least 24 hours apart shall be collected from the new line. Samples are to be taken and tested at every 1200 feet of new water line, at each branch and at each dead end.

D. If trench water has entered the pipe, or excessive quantities of dirt or debris have entered the pipe, samples shall be taken at intervals of approximately 200 feet and the locations identified. Samples shall be taken of water that has stood in the new line for at least 16 hours after flushing is completed.

E. If the initial disinfection does not produce satisfactory bacteriological results, the new line shall be reflushed and resampled. If samples fail, the line shall be rechlorinated by the continuous-feed or slug method until satisfactory results are obtained.

F. All testing documentation shall be submitted to the Owner.

3.17 ALTERNATE METHOD OF INSTALLATION

A. In lieu of traditional trenching methods for pipe installation, with the approval of the Engineer, the Contractor may choose to install the pipe utilizing the trenchless technology of horizontal directional drilling (HDD). Horizontal directional drilling shall be as specified in Section 330524.

END OF SECTION 331113

SECTION 331216 – VALVES

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required to furnish and install all valves shown on the Drawings and/or specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this Section.

B. Piping is specified in Division 33 Specification sections.

1.3 SUBMITTALS

A. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering. Comply with provisions of Section 013323.

B. At the time of submission, the Contractor shall, in writing, call Engineer's attention to any deviations that the submittals may have from the requirements of the Engineer's Contract Drawings and Specifications.

C. In accordance with the requirements of the General and Special Conditions and this Section, the following table includes, but is not limited to, the items required to be submitted:

Item Description	Shop Drawings	Product Data	Schedules	Installation Data	Parts Lists	Wiring Diagram	Samples	O & M Manual	Certificates	Warranty	Report	Other
Valves	X	X			X							
Valve Boxes		X										
Access Manhole	X	X										
Yard Hydrant	X	X			X							
Tapping Sleeve, Valve	X	X		X	X							

PART 2 - PRODUCTS

2.1 GATE VALVES

A. Gate valves shall conform with AWWA C-509 or AWWA C-515 standard, and shall be of the resilient seat type, iron body, fully bronze mounted, non-rising stem and have a design working pressure of 250 psi. All assembly bolts shall be stainless steel. Valves shall be of standard manufacturer and of the highest quality both as to materials and workmanship.

B. All gate valves shall be furnished with mechanical joint connections, unless otherwise shown on the Drawings or specified hereinafter.

C. An epoxy coating conforming to AWWA C-550 shall be applied to the interior and exterior ferrous surfaces of the valve except for finished or seating surfaces.

D. All gate valves shall have the name or monogram of the manufacturer, the year the valve casting was made, the size of the valve, and the working water pressure cast on the body of the valve.

E. Gate valves 12 inches and smaller shall be installed in a vertical position. Gate valves greater than 12 inches shall have the bonnet mounted in the horizontal position and have a bevel gear actuator. Gate valves shall be provided with a 2-inch square operating nut and shall be opened by turning to the left (counterclockwise). All valve operating nuts shall be set within a cast iron valve box. There shall be a maximum 48-inch depth of valve operating nut. Contractor must use extension stems, if necessary, to raise operator nut within 48 inches of final grade.

2.2 AIR RELEASE VALVES AND MANHOLE

A. Air release valves and boxes shall be installed at locations to be determined in the field by the Engineer. Air release valve stems shall be connected to the main by a corporation stop and a tapping saddle. An isolation ball valve shall be furnished and installed between the air release valve and corporation stop. Valves shall be suitable for average working water pressure of 200 psi. Valves shall be equipped with cast iron body and cove, stainless steel float, Buna-N seat and bronze linkage.

B. Air release valves installed on water mains shall have a 1-inch inlet. All air release valves shall be APCO No. 200-A (with 5/32-inch orifice) as manufactured by Valve and Primer Corporation Schaumburg, Illinois or equal.

C. Air release valves shall be installed at the high point of the water main and shall be connected on the main by a corporation stop with a female I.P.S. threaded outlet. The inlet pipe to the valve shall be ASTM B 43 extra strong seamless red brass pipe with I.P.S. male threaded ends.

D. The air release valve manhole shall be a 4-foot diameter precast manhole barrel section with pipe cut-outs and shall be set on a concrete footer. Care shall be taken so that barrel does not rest on the pipe. The cover shall be a 22-inch diameter cast iron frame and lid.

E. Contractor to install pipe at sufficient depth to accommodate Valve height so that top of Valve Box isn’t in conflict with top of manhole and provides head clearance for maintenance.

2.3 VALVE BOXES - BURIED VALVES (EXCEPT AIR RELEASE VALVES)

A. Valve boxes shall be of 5-1/4-inch standard cast iron, two-piece, screw type valve box with drop cover marked "WATER", "SEWER", "DRAIN", as applicable. Valve boxes for gate valves larger than 8 inches shall be three-piece. Valve boxes shall be accurately centered over valve operating nut and backfill thoroughly tamped about them. Valve boxes shall not rest on the valves but shall be supported on crushed stone fill. They shall be set vertically and properly cut and/or adjusted so that the tops of boxes will be at grade in any paving, walk or road surface, and in grass plots, fields, woods or other open terrain. Valve boxes and covers shall be as manufactured by Tyler Corporation, Opelika Foundry, Bingham & Taylor, or equal.

B. Wherever valve boxes fall outside of the pavement, the top of the box shall be set in a cast-in-place concrete slab 18 inches x 18 inches x 4 inches thick with the top of the slab and box flush with the top of the ground. This provision shall apply to all new and all existing valve boxes which fall within the limits of the contract, unless otherwise stated on the plans or ordered by the Engineer.

2.4 TAPPING SLEEVES AND VALVES

A. DI tapping sleeves for use in connections to existing water lines, where indicated on the drawings or as directed by the Engineer, shall be constructed of ductile iron conforming to the requirements of ASTM A-536, and have the body of the tapping sleeve seal around the carrier pipe by use of mechanical joints on each end. Tapping outlet connections shall be flanged with drillings in accordance with ANSI class 125#/150#. Tapping sleeves shall be suitable for working pressures of 250 psi and shall be Mueller No. H-615, American Valve and Hydrant No. 2800-C, or approved equal.

B. SST tapping sleeves for use in connections to existing water lines, where indicated on the drawings or as directed by the Engineer, shall have the body and neck constructed of ASTM A-240 type 304 stainless steel and shall be compressed to the carrier pipe by use of heavy gauge triangular sidebars running the length of the body. Bolts, nuts and washers shall be constructed of type 304 stainless steel. The gasket between the tapping sleeve and carrier pipe shall be constructed of Buna N rubber and be NSF 61 approved. The gasket shall have a grid pattern to help secure it in place and have seal around the full circumference of the pipe. Tapping outlet connections shall be constructed of ductile iron conforming to ASTM A-536 and have either a mechanical joint connection conforming to AWWA C-111, or a flanged connection with drillings in accordance with ANSI class 125#/150#. Tapping Sleeves shall be suitable for the following working pressures: 4 inches to 12 inches 250 psi, 14 inches-24 inches 200 psi and shall be Mueller No. H-304, Romac Industries SST III, or approved equal.

C. Tapping valves shall meet the requirements of paragraph 2.1 hereinbefore and shall be coordinated to connect to the tapping sleeve with either a flanged end or a mechanical joint end.

D. All existing water mains to be tapped under this contract shall be exposed in order to verify line sizes prior to ordering tapping sleeves and valves.

2.5 LEAK DETECTION METER VAULT

A. The Leak Detection Meter Vault shall consist of a ¾" service saddle, corporation stop, and ¾" service line installed on either side of the water main isolation valve. The ¾" Poly service line shall extend into the leak detection vault assembly. Note the actual test meter will be provided by the Owner.

B. The leak detection meter vault shall be DFW Plastics, Inc. Model DFWA4WBC-24-1.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All valves shall be installed in accordance with details on the Contract Drawings and with the manufacturer's recommendations.

B. All valves shall be anchored in accordance with the details on the Contract Drawings.

END OF SECTION 331216

SECTION 331219 – HYDRANTS

PART 1 – GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required for furnishing and installing all hydrants and appurtenances specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork: Section 312000

B. Valves - Utilities Services: Section 331216

C. Water Distribution Piping: Section 331113

1.3 SUBMITTALS

A. Submit shop drawings and product data in accordance with Section 013323 of this specification.

B. Descriptive literature, catalog cuts, and dimensional prints clearly indicating all dimensions and materials of construction, shall be submitted on all items specified herein to the Engineer for review before ordering.

C. In accordance with the requirements of the General and Special Conditions and this Section, the following table includes, but is not limited to, the items required to be submitted:

Item Description	**Shop Drawings**	**Product Data**	**Schedules**	**Installation Data**	**Parts Lists**	**Wiring Diagram**	**Samples**	**O & M Manual**	**Certificates**	**Warranty**	**Report**	**Other**
Hydrants	X	X		X	X							

PART 2 - PRODUCTS

2.1 FIRE HYDRANTS

A. The Contractor shall furnish and install fire hydrants and auxiliary gate valves where shown on the Drawings or directed by the Engineer. Hydrants shall conform in all respects to the most recent requirements of AWWA C502. Hydrant barrel shall have safety breakage feature above the ground line. All hydrants shall have 6-inch mechanical joint shoe connection, two 4-1/2-inch pumper nozzle with rubber gasketed caps fitted with cap chains. Cap nuts are to be five (5) sided. Connection threads shall be National Standard Thread. Main valve shall have 5-1/4-inch full opening and be of the compression type opening against water pressure so that valve remains closed should barrel be broken off.

B. Hydrants shall be fully bronze mounted. Main valve shall have a threaded bronze seat ring assembly of such design that it is easily removable by unscrewing from a threaded bronze drain ring. Bronze drain ring shall have multiple ports providing positive automatic drainage as the main valve is opened or closed. Drainage waterways shall be completely bronze to prevent rust and corrosion.

C. The operating nut shall be five-sided bronze or bronze with a five-sided ductile iron cap and mounted so that a counterclockwise motion will open the valve. There must be cast on top an arrow and the word "Open" indicating the direction of turn to open the hydrant.

D. Operating stem shall be equipped with anti-friction thrust bearing to reduce operating torque and assure easy opening. Stop shall be provided to limit stem travel. Stem threads shall be enclosed in a permanently sealed lubricant reservoir protected from weather and the waterway with O-ring seals.

E. Hydrants shall be shop tested to 300 psi pressure with main valve both opened and closed. Under test the valve shall not leak, the automatic drain shall function and there shall be no leakage into the bonnet.

F. Type of shoe connection shall be mechanical joint and size shall be 6 inches.

G. Hydrants shall be given two coats of enamel high visibility (YELLOW) paint to be selected by the Owner.

H. Hydrants shall be Mueller Super Centurion Model A-425 or approved equal.

PART 3 - EXECUTION

3.1 SETTING OF FIRE HYDRANTS

A. Location:

1. Hydrants shall be located as shown or as directed so as to provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians.

2. When placed behind the curb, the hydrant barrel shall be set so that the pumper or hose nozzle cap will be a minimum of 5 feet from the back of curb.
3. When set in the lawn space between the curb and the sidewalk or between the sidewalk and the property line, no portion of the hydrant or nozzle cap shall be within 6 inches of the sidewalk.

B. Position:

1. All hydrants shall be set plumb with not less than 2 cubic feet of crushed stone and shall have their nozzles parallel with the roadway, with the pumper nozzle facing toward the roadway. Hydrants shall be set to the established grade, with nozzles at least 18 inches above the ground, as shown or as directed by the Engineer.

C. Connection to Main:

1. Each hydrant shall be connected to the main with a 6-inch restrained joint ductile iron branch controlled by an independent 6-inch gate valve, unless otherwise specified.

D. Hydrant Drainage in Pervious Soil:

1. Whenever a hydrant is set in soil that is pervious, drainage shall be provided at the base of the hydrant by placing uncrushed coarse aggregate (AASHTO M-43) No. 57 from the bottom of the trench to at least 6 inches above the drain opening in the hydrant and to a distance of 1 foot around the elbow. No drainage system shall be connected to a sewer.

E. Hydrant Drainage in Impervious Soil:

1. Whenever a hydrant is set in clay or impervious soil, a drainage pit 2 feet in diameter and 3 feet deep shall be excavated below each hydrant and filled compactly with uncrushed coarse aggregate (AASHTO M-43) No. 57 under and around the elbow of the hydrant and to a level of 6 inches above the drain opening. No drainage pit shall be connected to a sewer (see Standard Details).

3.2 ANCHORAGE

A. The bowl of each hydrant shall be tied to the pipe with suitable anchor couplings, as shown on the Standard Details in the Drawings or as directed by the Owner or Engineer.

3.3 FIRE HYDRANT WRENCHES

A. One hydrant wrench shall be furnished for each 10 hydrants or less. When the number of hydrants furnished and installed exceeds 25, one hydrant repair kit shall be supplied at no additional cost to the Owner.

END OF SECTION 331219

SECTION 333913 – MANHOLES, FRAMES, AND COVERS

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Provide all labor, materials, equipment and services required for furnishing and installing all manholes and appurtenances specified herein and shown on the Drawings.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Earthwork: Section 312000

B. Valves: Section 331216

1.3 SUBMITTALS

A. Submit manufacturer's data and shop drawings for the materials specified herein. Comply with all requirements of Section 013323.

B. In accordance with the requirements of the General and Special Conditions and this Section, the following table includes, but is not limited to, the items required to be submitted:

Item Description	**Shop Drawings**	**Product Data**	**Schedules**	**Installation Data**	**Parts Lists**	**Wiring Diagram**	**Samples**	**O & M Manual**	**Certificates**	**Warranty**	**Report**	**Other**
Manholes	X				X							
Joint Seal	X	X		X								
Steps	X			X								
Frames & Lids	X											
Pipe Connectors	X											
External Rubber Wrap	X	X										
External Rubber Chimney Seal	X	X										

PART 2 - PRODUCTS

2.1 MANHOLES

A. Manholes of the form and dimensions shown on the Drawings shall be constructed of ASTM C 478 precast reinforced concrete manhole sections erected on 3,000 psi concrete foundation.

B. Precast concrete manhole bottom sections may be substituted for "cast-in-place" foundations subject to the Owner's review.

C. The excavation shall be kept free of water while the manhole is being constructed and the manhole shall not be backfilled until inspected by the Engineer.

D. Standard Manholes:

1. The standard manhole shall be 4 feet in diameter and not greater than 6 feet in depth, measured from the top of the cover frame to the invert of the outlet and shall be cone type- top construction as shown on the Drawings.
2. Manholes greater than 6 feet in depth, measured as above, shall be paid for as a standard six foot manhole, plus the additional vertical depth at the Contract unit price.

E. Shallow Manholes:

1. The shallow manholes shall be 5 feet or less in depth, measured from the top of the cover frame to the invert of the outlet and shall be of flat top construction as shown on the Drawings.

F. Concrete Manhole Sections:

1. Precast concrete manhole sections (risers and grade rings) shall conform to ASTM C 478.

G. Precast Concrete Eccentric Cones:

1. Precast concrete eccentric cones shall be of the size and shape shown on the Drawings and shall conform to ASTM C 478.

H. Precast Manhole Section Joints:

1. Precast manhole section joints shall be jointed with one of the following products:

a. ASTM C 443 rubber gaskets
b. AASHTO M-198-75 preformed flexible butyl type joint sealant
c. Hamilton-Kent "Kent-Seal No. 2"
d. K.T. Snyder Co. "Rub'r-Nek"
e. Press Seal Gasket "E-Z stik"
f. Concrete Sealants, Inc. "Conseal"

or equal or joined with bituminous mastic joint sealing compound. When making joints with mastic compound prime and seal all joints with primer supplied with the joint

compound. Manhole section joints shall be watertight. These requirements apply to all joints, including manhole risers, cones, and grade rings.

I. External Rubber Wrap:

1. Each manhole barrel joint shall be sealed with an external rubber wrap as manufactured by Sealing Systems, Inc., or equal.
2. The wrap shall be made of a Stretchable, Self-Shrinking, IntraCuring Halogenated Based Rubber with a minimum thickness of 30 mils.
3. The back side of each unit shall be coated with a cross-linked re-enforced butyl adhesive. The butyl adhesive shall be non-hardening sealant, with a minimum thickness of 30 mils.
4. The wrap shall be designed to stretch around the substrate then overlapped creating a cross-link and fused bond between the rubber and butyl adhesive.
5. The application shall form a continuous rubber seal that applies inward pressure on the protected area for the life of the application.
6. The butyl adhesive and the inward pressure exerted on the substrate will prevent the intrusion of water and soil through the joint sections of a manhole.

External Rubber Wrap Specifications	
Height	9"
Length	16 or 50 foot rolls
Thickness	60 mils
Height tolerances	9" +/- .188"
Length tolerances	+/- 3"
Rubber Thickness tolerances	30 mils
Butyl Adhesive Thickness	30 mils

Stretchable, Self-Shrinking, Intra-Curing Halogenated Based Rubber		
Physical Properties	ASTM Test Method	Typical Value
Sheer Strength	D816	20 lb. PSI min
Tensile, PSI	D412	50 PSI
Elongation %	D412	500%
Penetration	D217	60/140 MM
Low Temperature	D746	Minus 49º F flexibility
Heat Aging	D573 7 days @ 90 º C	
Tensile Strength	minimum, PSI (MPa) > 100 PSI	Pass
Fusion	5/64" (0.2) max	Pass
Elongation %	minimum 300% at break	Pass
Ozone Resistance	no visible signs of cracking	Pass
Aging and Storage	300% elongation applied (10 Years)	Pass
UV Resistance	No visible signs of cracking	Pass

J. Manhole Inverts:

1. Manhole inverts shall be formed with 3,000 psi concrete. Inverts shall be constructed as shown on the Contract Drawings and shall form a smooth finish. Inverts may be shop fabricated or constructed on site.

K. Manhole Steps:

1. Plastic manhole steps shall be PS1-PF (Press Fit) polypropylene plastic as manufactured by MA Industries, Peachtree City, Georgia or equal. Steps shall be driven into specially sized holes cast into the manhole section. Holes shall be formed in the manhole section using an insert plug that is removed upon curing.
2. Steps shall be aligned vertically above the outlet, in line with the flow through. Step spacing shall be 16 inches.

L. Manhole Frames and Covers:

1. Manhole castings shall consist of cast iron frames with a minimum clear opening of 22 inches. Casting shall have a minimum of four bolt holes for the purpose of anchoring the casting to the manhole cone or grade ring. Manhole frame castings shall be securely anchored to the manhole. Anchoring shall be by means of 1/2-inch diameter stainless steel wedge anchor. Wedge anchors shall only be placed in the cone section or flat top slab, with anchor rod passing through grade ring and frame casting.
2. Manhole covers must set neatly in the rings, with contact edges machined for even bearing and tops flush with ring edge. They shall have sufficient corrugations to prevent slipperiness and be marked in large letters, "WATER". The covers shall have two concealed pick holes. Covers on manholes shall not be perforated.
3. Acceptable manufacturers are J.R. Hoe & Sons, Middlesboro, KY; John Bouchard & Sons Co., Nashville, TN; and Neenah Foundry Company, Neenah, WI., or equal.

    a. Where indicated on the Drawings or in the Specifications, Traffic Weight Manhole frames and covers shall be provided. These shall weigh a minimum of 325 pounds.
    b. Non-Traffic Weight: Manhole frame and cover weight to be minimum of 250 pounds.

M. Watertight Manhole Covers:

1. Watertight manhole covers shall consist of cast iron frames with machined bearing surfaces, continuous gasket seal preinstalled into slots with dovetail design and shall be of the self-sealing type as manufactured by Neenah Foundry Company or equal. Watertight manhole covers shall have sufficient corrugations to prevent slipperiness and be marked in large letters "WATER". Weight of manhole covers shall be as specified in Paragraph 2.1 K of this specification.

N. Pipe Connections Into Manholes:

1. Water pipe shall be sealed in the manhole section pipe openings with a resilient connector meeting the requirements of ASTM C923. Resilient connector shall be A-Lok or Z-Lok by A-Lok Products, Inc., Cast-A-Seal 12-08 by Press-Seal Gasket Corporation, or equal.
2. Resilient connector shall be cast integrally into the wall of the manhole section at time of manufacture. There shall be no mortar placed around the connector on the outside of the

manhole and no mortar shall be placed around the top half of the connector on the inside of the manhole when completing the invert work.

3. Resilient connectors requiring compression clamps or take up clamps will not be approved.
4. Wherever plastic water pipe is to be field grouted into manhole openings, pipe-to-manhole connector seal shall be Fernco Concrete Manhole Adapters manufactured by Fernco, Inc., Division, Michigan, or equal. Adapter shall be mounted on pipe and shall be positioned about the center of the manhole wall.

O. Precast Concrete Manhole Base Sections:

1. Precast concrete manhole base sections, if provided in lieu of cast-in-place foundations, shall be "monolithic", consisting of base slab, and base riser section. Upon review and approval by the Owner and Engineer, precast base sections may include floor invert channel and apron. All precast base sections with pipe openings shall be furnished with ASTM C 923 pipe-to-manhole connector gaskets, as specified hereinbefore. Precast base sections shall be furnished with an integral anti-flotation footing, thickness as specified hereinafter, with 6-inch projection, as shown in the Details. Precast base sections shall be set on a 6-inch deep pad (compacted thickness) of dense graded aggregate, placed to proper elevation and leveled. The Engineer reserves the right to inspect precast manhole base sections at the construction site and to reject the use of such sections if the Engineer determines the products unsuitable for the Owner's installation.
2. Precast concrete manhole base slab thickness shall comply with the following schedule:

0' - 10'	Vertical Height - 6" Slab
10.1' - 15'	Vertical Height - 8" Slab
15.1' - 20'	Vertical Height - 10" Slab
20.1' - 25'	Vertical Height - 12" Slab
25.1' - 30'	Vertical Height - 14" Slab

P. Drop Connections into Manholes

1. Where indicated on the Drawings, drop connections into manholes shall be installed. Drop connections shall be cast-in-place or precast and shall conform to the requirements shown on the Details.

Q. External Rubber Chimney Seal:

1. This section shall include the complete external rubber chimney seal manhole sealing system. The sealing system shall prevent leakage of water into the manhole through the frame joint area and through the adjustment ring area. All materials required for the installation of the sealing system shall be furnished by the contractor and shall be new, of first grade, and shall be of reputable manufacturers known to the trade.
2. The casting shall be sealed to the structure with an external rubber chimney sealing system as manufactured by Sealing Systems, Inc., or approved equal. The seal shall be a continuous seamless band made of high quality EPDM (Ethylene Propylene Diene Monomer) rubber with a minimum thickness of 65 mils. There shall be a preformed L-shaped corner molded into the top of the seal. The top section and the side section will extend from the L-shaped corner at a generally 90 degree angle to each other. Wherein the seal is pre-formed in substantially the same shape as when attached to the manhole structure. The thickness of the L shaped corner extending 1 inch into the top section and

1 inch down the side section is increased and may be at least twice the thickness of the top section reinforcing the seal at this particular area. There shall be a 2- to 3-inch wide strip of butyl mastic attached to the underside of top section of the seal. There shall be a 2-inch wide strip of butyl mastic attached to the inside of the side section at the bottom of the seal. The mastic shall be non-hardening butyl rubber sealant, with a minimum thickness of 1/8 inch, and shall seal to the cone/top of the manhole section and over the flange of the casting frame. An aerosol primer shall be used to enhance the bond strength of the seal to the structure.

2.2 COMPRESSION COUPLINGS

A. When joining different types of pipe together or new pipe to existing pipe, the Contractor shall use Fernco Compression Couplings, or equal, that are resistant to corrosion by soil and sewage and that will provide a permanent watertight joint. The compression coupling shall meet the physical test and joint-leak requirements specified in ASTM C-594. The bands for attaching pipes shall be stainless steel conforming to ASTM C-594. Each coupling shall bear the manufacturer's name and an indication of its size.

PART 3 - EXECUTION

3.1 EXCAVATION FOR MANHOLE INSTALLATION

A. Unless otherwise directed by the Engineer, excavation in which manholes are to be installed shall be excavated in open cut to the depths required by field conditions or as specified by the Engineer. In general, this shall be interpreted to mean that machine excavation in earth shall not extend below an elevation permitting the manhole to be properly bedded.

B. Excavation may be undercut to a depth below the required invert elevation that will permit installing the manhole on a bed of granular material to provide continuous support for the manhole base. When this method is used, the bedding shall be as set out in Paragraph 3.2 hereinafter.

C. Excavations shall be of sufficient dimensions to provide free working space on all sides of the manhole and to permit proper backfilling around the manhole. All excavated materials shall be placed a minimum of 2 feet back from the edge of the excavation.

D. The excavation shall be straight and uniform so as to permit installation of the manhole to lines and grades given by the Engineer. It shall be kept free of water during the installation of the manhole and until the manhole has been backfilled. Removal of water shall be at the Contractor's expense. Dry conditions shall be maintained in the excavations until the backfill has been placed. During the excavation, the grade shall be maintained so that it will freely drain and prevent surface water from entering the excavation at all times. When directed by the Owner or the Engineer, temporary drainage ditches shall be installed to intercept or direct surface water which may affect work. All water shall be pumped or drained from the excavation and disposed of in a suitable manner without damage to adjacent property or to other work.

3.2 MANHOLE BEDDING

A. All manholes shall be supported on a bed of granular material. In no case shall manhole be supported directly on rock. Bedding shall not be a separate pay item unless otherwise set out in the Detailed Specifications. Bedding shall be provided in earth bottom excavations, as well as rock bottom excavations. Bedding material shall be free from rock, foreign material, frozen earth, and be acceptable to the Engineer. Bedding shall be a minimum of 6 inches below manhole base.

B. Granular bedding shall be Size #9-m or ASTM C 33, Size #7 crushed stone, fine gravel, or sand, and is not a separate pay item.

C. Where undercutting and granular bedding is involved, it shall be of such depth that the bottom of the manhole will be at least six inches above the bottom of the excavation. Undercutting is not a separate pay item.

D. In wet, yielding, mucky locations where the manhole is in danger of sinking below grade or floating out of line or grade, or where backfill materials are of such a fluid nature that such movements of the pipe and/or manhole might take place during the placing of the backfill, the pipe and/or manhole must be weighted or secured permanently in place by such means as will prove effective. When ordered by the Engineer, yielding and mucky materials in subgrades shall be removed below ordinary excavation depth in order to prepare a proper bed for the manhole. Crushed stone or other such granular material, if necessary, as determined by the Engineer to replace poor subgrade material, shall be a separate pay item and classified as "Special Granular Fill". Removal of poor material is not a separate pay item.

3.3 CONVERT EXISTING PUMP STATION TO A MANHOLE

A. Where noted on the Contract Drawings, wet wells shall be converted to manholes as described herein. Structure shall be filled with crushed stone or sand to a level approximately one foot below the invert elevation shown on the Contract Drawings. The invert shall be constructed with 3000 psi concrete, approximately one foot thick, with apron and channel(s) formed and finished. New outlet pipe openings shall be core drilled in the wall of the structure, and the pipe installed with a Fernco Concrete Manhole Adapter or equal. Areas around pipe shall be grouted to achieve a smooth surface.

3.4 SPECIAL GRANULAR FILL

A. As noted in Paragraph 3.2 D, granular material for "Special Granular Fill" when directed by the Engineer shall be Department of Transportation crushed limestone, Size #9. Payment for "Special Granular Fill" must have approval from the Engineer prior to installation.

3.5 BITUMINOUS CONCRETE HIGHWAY, STREET AND DRIVEWAY REPLACEMENT

A. The Contractor shall replace those sections of existing roads, streets and driveways required to be removed to install the pipelines and manholes under this Contract. The Contractor shall construct same to the original lines and grades and in such manner as to leave all such surfaces in fully as good or better condition than that which existed prior to the operations.

B. Prior to excavating, the pavement shall be scored or cut to straight edges at least 12 inches outside each edge of the proposed excavation to avoid unnecessary damage to the remainder of the paving. Edges of the existing pavement shall be re-cut and trimmed to square, straight edges after the manhole has been installed and prior to placing the new base and pavement.

C. Backfilling of the excavation shall be in accordance with Method "C" as described hereinbefore. Base course for the paving shall be dense graded crushed limestone furnished and placed in accordance with the current requirements of the Standard Specifications for Road and Bridge Construction of the Department of Transportation, to a depth of 6 inches in roads and streets and 4 inches in driveways.

D. A subslab of reinforced concrete shall be placed for state maintained highways as indicated on the Drawings. The subslab shall have a minimum thickness of 6 inches. Concrete for the subslab shall be 3000 psi, in accordance with the Details shown on the Drawings.

E. Bituminous Concrete Surface and Bituminous Concrete Base shall conform to the requirements of Sections 402 and 403 of the Standard Specifications for Road and Bridge Construction of the Department of Transportation.

3.6 REMOVING AND REPLACING CONCRETE CURB AND GUTTER

A. The Contractor shall remove the curb and gutter when encountered when required for installing the manhole. Only that portion of the curb and gutter needed to install the manhole shall be removed. Where concrete curb and gutter removed or disturbed during the construction work, it shall be replaced, using 3,000 psi concrete, in fully as good or better condition than which existed prior to the Contractor's operation.

3.7 REPLACEMENT OF EXISTING MAILBOXES, CULVERTS, CLOTHESLINE POSTS, FENCES AND OTHER SUCH FACILITIES

A. Existing mailboxes, drainage culverts, clothesline posts, fences and the like shall not be molested or disturbed unless necessary, in which case, they shall be replaced in as good condition as found as quickly as possible. Existing materials shall be reused in replacing such facilities when materials have not been damaged by the Contractor's operations. Existing facilities damaged by Contractor's operation shall be replaced with new materials of the same type at the Contractor's expense. Work in this category is not a pay item.

B. Replacement of paved drainage ditches within highway right-of-way shall be accomplished in accordance with Department of Transportation specifications.

3.8 MANHOLE FRAME INSTALLATION

A. The manhole frame casting shall be centered over the opening in the cone or grade ring of the manhole, with a bituminous mastic joint sealing compound applied between the concrete and the casting.

B. The frame shall be bolted to the cone or grade ring with stainless steel wedge anchors.

3.9. EXTERNAL RUBBER CHIMNEY SEAL INSTALLATION

A. The external rubber chimney seal sealing system shall be installed according to the manufacturer's recommendations. The top section of the seal shall extend 3 inches attaching to the casting base/flange with the side section covering over the entire grade adjustment ring area and onto the cone section a minimum of 2 inches.

3.10 TESTING

This specification shall govern the vacuum testing of manholes and structures and shall be used as a method of determining acceptability by the Owner, in accepting maintenance of a manhole or structure on behalf of the public. Test procedure shall comply with ASTM C1244. Other forms of testing of some manholes may be required, as deemed necessary by the Owner.

A. Manholes shall be tested after installation with all connections in place.

1. Lift holes, if any, shall be plugged with an approved, non-shrinkable grout prior to testing.
2. Drop connections shall be installed prior to testing.
3. The vacuum test shall include testing of the seal between the cast iron frame and the concrete cone, slab or grade rings.
4. The manholes shall be backfilled and finished to design grade.

B. Test Procedure:

1. Temporarily plug, with the plugs being braced to prevent the plugs or pipes from being drawn into the manhole, all pipes entering the manhole at least eight inches into the pipe(s). The plug must be inflated at a location past the manhole/pipe gasket.
2. The test head shall be placed inside the frame at the tope of the manhole and inflated, in accordance with the manufacturer's recommendations.
3. A vacuum of 10 inches of mercury shall be drawn on the manhole. Shut the valve on the vacuum line to the manhole and disconnect the vacuum line.
4. The pressure gauge shall be liquid filled, having a 3-1/2-inch diameter face with a reading from 0 to 30 inches of mercury.
5. The manhole shall be considered to pass the vacuum test if it holds at least 9 inches of mercury for the following time durations:

	Time (Minutes)		
Manhole Depth	4' Diameter	5' Diameter	6' Diameter
20 Feet or Less	1	2	3
20.1 to 30 Feet	2	3	4

6. If a manhole fails the vacuum test, the manhole shall be repaired with a non-shrinkable grout or other suitable material based on the material of which the manhole is constructed and retested, as stated above.
7. All temporary plugs and braces shall be removed after each test.

C. Manholes will be accepted as having passed the vacuum test requirements if they meet the criteria stated above.

3.11 CLEAN UP

A. Upon completion of installation of the manholes and appurtenances, the Contractor shall remove all debris and surplus construction materials resulting from the Work. The Contractor shall grade the ground around and adjacent to the construction area in a uniform and neat manner leaving the construction area in a shape as near as possible to the original ground line.

END OF SECTION 333913

APPENDIX A

APPROVED KYTC ENCROACHMENT PERMIT

TEAM KENTUCKY TRANSPORTATION CABINET

KENTUCKY TRANSPORTATION CABINET
Department of Highways
PERMITS BRANCH

TC 99-1A
Rev. 10/2020

APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: 05-2026-00719

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT Oldham County Water District	**ADDRESS** 2160 Spencer Court		
EMAIL rrose@oldhamcountywaterky.gov	**CITY** LaGrange	**STATE** KY	**ZIP** 40031
CONTACT NAME 1 Nicholas Gunselman, GRW	**EMAIL** ngunselman@grwinc.com	**PHONE #** 502-489-8484 **CELL #** 502-432-9586	
CONTACT NAME 2 (*if applicable*)	**EMAIL**	**PHONE #** **CELL #**	

SECTION 2: PROPOSED WORK LOCATION

ADDRESS US42	**CITY** Goshen		**STATE** Kentucky	**ZIP** 40026
COUNTY Oldham	**ROUTE #** 42	**MILE POINT** 6.0 - 9.2	**LONGITUDE** (*X*) 38.424536	**LATITUDE** (*Y*) -85.537126

ADDITIONAL LOCATION INFORMATION:
The milepoint range is the approx. starting to finish point of the water main extension project described below.

FOR KYTC USE ONLY

PERMIT TYPE: ☐ Air Right ☐ Entrance ☒ Utilities ☐ Vegetation Removal ☐ Other: _____

ACCESS: ☐ Full ☐ Partial ☒ by Permit **LOCATION:** ☐ Left ☒ Right ☐ Crossing

SECTION 3: GENERAL DESCRIPTION OF WORK

The proposed project will involve a new 12" HDPE water main installed within the southern right-of-way of US42 in Oldham County, Kentucky between KY1694 and KY393. This project will provide fire protection and improve service to this part of OCWD's service area.

The project will include the installation of approximately 16,720 LF of 12-inch HDPE piping in the right-of-way of US42 along fire hydrants and air release vaults located at highpoints along the alignment. The Contractor will be instructed to install the water main outside of the existing ditches or along the back of ditch where necessary.

Additionally, the project will include a 24" steel casing pipe bored and jacked beneath US42 near mile point 7.0 along with the 12" HDPE pipe and a 24" steel casing pipe bored and jacked beneath KY393 near mile point 9.2 (US42) or approx. mile point 10.1 (KY393) along with the 12" HDPE pipe.

THE UNDERSIGNED APPLICANT(s), being duly authorized representative(s) or owner(s), DO AGREE TO ALL ORIGINAL UNEDITED TERMS AND CONDITIONS ON THE TC 99-1A, pages 1-4.

Shawn Stone — **SIGNATURE**

5/11/26 — **DATE**

This is not a permit unless and until the applicant(s) receives an approved TC 99-1B from KYTC. This application shall become void if not approved by the cancellation date. The cancellation date shall be a minimum of one year from the date the applicant submits their application.

APPLICATION FOR ENCROACHMENT PERMIT

TERMS AND CONDITIONS

1. The permit, including this application and all related and accompanying documents and drawings making up the permit, remains in effect and is binding upon the Applicant/Permittee, its successors and assigns, as long as the encroachment(s) exists and also until the permittee is finally relieved by the Department of Highways from all its obligations.

2. Applicant shall meet all requirements of the Clean Water Act if the project will disturb one acre or more, the applicant shall obtain a KPDES KYR10 Permit from the Kentucky Division of Water. All disturbed areas shall meet the requirements of the Department of Highway's Standard Specifications, Sections 212 and 213, as amended.

3. **INDEMNITY:**
   - **A.** PERFORMANCE BOND: The permittee shall provide to the Department a performance bond according to the Permits Manual, Section PE-203 as a guarantee of conformance with the Department's Encroachment Permit requirements.
   - **B.** PAYMENT BOND: At the discretion of the department, a payment bond shall be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
   - **C.** LIABILITY INSURANCE: Liability insurance shall be required of the permittee (in an amount approved by the department) to cover all liabilities associated with the encroachment.
   - **D.** It shall be the responsibility of the permittee, its successors and assigns, to maintain all indemnities in full force and effect until the permittee is authorized to release the indemnity by the Department.

4. A copy of this application and all related documents making up the approved permit shall be given to the applicant and shall be made readily available for review at the work site at all times.

5. Perpetual maintenance of the encroachment is the responsibility of the permittee, its successors and assigns, with the approval of the Department as required, unless otherwise stated.

6. Permittee, its successors and assigns, shall comply with and agree to be bound by the requirements and terms of (a) this application and all related documents making up the approved permit, (b) by the Department's Permits Manual, and (c) by the Manual on Uniform Traffic Control Devices, both manuals as revised to and in effect on the date of issuance of the permit, all of which documents are made a part thereof by this reference. Compliance by the permittee, its successors and assigns, with subsequent revisions to applicable provisions of either manual or other policy of the Department may be made a condition of allowing the encroachment to persist under the permit.

7. Permittee agrees that this and any encroachment may be ordered removed by the Department at any time, and for any reason, upon thirty days written notice to the last known address of the applicant or to the address at the location of the encroachment. The permittee agrees that the cost of removing and of restoring the associated right-of-way is the responsibility of the permittee, its successors and assigns.

8. Permittee, its successors and assigns, agree that if the Department determines that motor vehicular safety deficiencies develop as a result of the installation or use of the encroachment, the permittee, its successors and assigns, shall provide and bear the expenses to adjust, relocate, or reconstruct the facilities, add signs, auxiliary lanes, or other corrective measures reasonably deemed necessary by the Department within a reasonable time after receipt of a written notice of such deficiency. The period within which such adjustments, relocations, additions, modifications, or other corrective measures must be completed will be specified in the notice.

9. Where traffic signals are required as a condition of granting the requested permit or are thereafter required to correct motor vehicular safety deficiencies, as determined by the Department, the costs for signal equipment and installation(s) shall be borne by the permittee, its successors and assigns and the Department in its reasonable discretion and only in accordance with the Department's current policy set forth in the Traffic Operations Manual and Permits Manual. Any modifications to the permittee's entrance necessary to accommodate signalization (including necessary easement(s) on private property) shall be the responsibility of the permittee, its successors and assigns, at no expense to the Department.

APPLICATION FOR ENCROACHMENT PERMIT

10. The requested encroachment shall not infringe on the frontage rights of an abutting owner without their written consent as hereinafter described. Each abutting owner shall express their consent, which shall be binding on their successors and assigns, by the submission of a notarized statement as follows, "I (we), _____, hereby consent to the granting of the permit requested by the applicant along Route _____, which permit does affect frontage rights along my (our) adjacent real property." By signature(s) _____, subscribed and sworn by _____, on this date _____.

11. The permit, if approved, is subject to the agreement that it shall not interfere with any similar rights or permit(s) previously granted to any other party, except as otherwise provided by law.

12. Permittee shall include documentation which describes the facilities to be constructed. Permittee, its successors and assigns, agree as a condition of the granting of the permit to construct and maintain any and all permitted facilities or other encroachments in strict accordance with the submitted and approved permit documentation and the policies and procedures of the Department. Permittee, its successors and assigns, shall not use facilities authorized herein in any manner contrary to that prescribed by the approved permit. Only normal usage as contemplated by the parties and by this application and routine maintenance are authorized by the permit.

13. Permittee, its successors and assigns, at all times from the date permitted work is commenced until such time as all permitted facilities or other encroachments are removed from the right-of-way and the right-of-way restored, **shall defend, protect, indemnify and save harmless** the Department from any and all liability claims and demands arising out of the work, encroachment, maintenance, or other undertaking by the permittee, its successors and assigns, related or undertaken pursuant to the granted permit, due to any claimed act or omission by the permittee, its servants, agents, employees, or contractors. This provision shall not inure to the benefit of any third party nor operate to enlarge any liability of the Department beyond that existing at common law or otherwise if this right to indemnity did not exist.

14. Upon a violation of any provision of the permit, or otherwise in its reasonable discretion, the Department may require additional action by the permittee, its successors and assigns, up to and including the removal of the encroachment and restoration of the right-of-way. In the event additional actions required by the Department under the permit are not undertaken as ordered and within a reasonable time, the Department may in its discretion cause those or other additional corrective actions to be undertaken and the Department shall recover the reasonable costs of those corrective actions from the permittee, its successors and assigns.

15. Permittee, its successors and assigns, shall use the encroachment premises in compliance with all requirements of federal law and regulation, including those imposed pursuant to Title VI of the Civil Right Act of 1964 (42 U.S.C. § 2000d et seq.) and the related regulations of the U.S. Department of Transportation in Title 49 C.F.R. Part 21, all as amended.

16. Permittee, its successors and assigns, agree that if the Department determines it is necessary for the facilities or other encroachment authorized by the permit to be removed, relocated or reconstructed in connection with the reconstruction, relocation or improvement of a highway, the Department may revoke permission for the encroachment to remain under the permit and may order its removal, relocation or reconstruction by the permittee, its successors and assigns, at the expense of the permittee, except where the Department is required by law to pay any or all of those costs.

APPLICATION FOR ENCROACHMENT PERMIT

17. Permittee agrees that the authorized permit is personal to the permittee and shall remain in effect until such time as (a) the permittee's rights to the adjoining real property to have benefitted from the requested encroachment have been relinquished, (b) until all permit obligations have been assumed by appropriate successors and assigns, and (c) unless and until a written release from permit obligations has been granted by the Department. The permit and its requirements shall also bind the real property to have benefitted from the requested encroachment to the extent permitted by law. The permit and the related encroachment become the responsibility of the successors and assigns of the permittee and the successors and assigns of each property owner benefitting from the encroachment, or the encroachment may not otherwise permissibly continue to be maintained on the right-of-way. (Does not apply to utility encroachments serving the general public.)

18. If work authorized by the permit is within a highway construction project in the construction phase, it shall be the responsibility of the permittee to make personal contact with the Department's Engineer on the project in order to coordinate all permitted work with the Department's prime contractor on the project.

19. This permit is not intended to, nor shall it, affect, alter or alleviate any requirement imposed upon the permittee, its successors and assigns, by any other agency.

20. Permittee, its successors and assigns, agree to contain and maintain all dirt, mud, and other debris emanating from the encroachment away from the surrounding right-of-way and the travel way of the highway hereafter and at all times that its obligations under the permit remain in effect.

21. Before You Dig: The contractor is instructed to call 1-800-752-6007 to reach KY 811, the One-Call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that the owners of underground facilities are not required to be members of the KY 811 One-Call Before U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Clerk to determine what utility companies have facilities in the area.

22. The undersigned Utility acknowledges ownership and control of the facilities proposed to be installed, modified, or extended by the Applicant/Permittee and agrees to be bound by the requirements and terms of this application and all related documents making up the approved permit, by the Department's Permits Guidance Manual, and by all applicable regulations and statutes in effect on the date of issuance of the permit. This information and application is certified correct to the best knowledge and belief of the undersigned Utility.

Oldham County Water District
UTILITY

Shanna Store
NAME (Utility Representative)

Engineering Manager
TITLE (Utility Representative)

Shanna Store
SIGNATURE (Utility Representative)

5/11/26
DATE

Kentucky 811 Know what's below. Call before you dig.

To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007

Kentucky Transportation Cabinet
Department of Highways
Permits Branch

ENCROACHMENT PERMIT

KEPTS No.: 2026-00719

Permittee: Oldham County Water District

Latitude: 38.424536

Longitude: -85.537126

Completion Date: 05/29/27

Coordinates provided on the TC 99-1(B) are the approved location for this permit.

Indemnities		
Type	Amount Required	Tracking Number
Performance Bond	$1,500.00	
Payment Bond		
Liability Insurance		

This permit has been:

APPROVED ☒ **DENIED** ☐

Jason Richardson, P.E. — Transportation Engineer Supervisor

NAME **TITLE**

SIGNATURE **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.

Permit Number: 05-2026-00719 **KYTC District 5 Permits**

ENCROACHMENT PERMIT GENERAL NOTES & SPECIFICATIONS

I. SAFETY

A. General Provisions

- All signs and control of traffic shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, latest edition, Part **6,** and safety requirements shall comply with the KYTC Permits Manual. Federal law requires that traffic control shall be implemented in accordance with MUTCD standards, KYTC's Standard Specifications for Road and Bridge Construction (KYTC SSRBC), current edition and under the supervision of a certified Work Zone Traffic Control Supervisor.

- All work necessary in shoulder or ditch line areas of a state highway shall be scheduled to be promptly completed so that hazards adjacent to the traveled way are kept to an absolute minimum.

- No more than one (1) traveled-lane shall be blocked or obstructed during normal working hours. All signs, flaggers and other devices during lane closures shall conform to the MUTCD. The traveled-way and shoulders shall be kept clear of mud and other construction debris at all times during construction of the permitted facility. No non-construction equipment or vehicles or office trailers shall be allowed on the right of way during working hours. The right of way shall be left free and clear of equipment, material, and vehicles during non-working hours.

- When necessary to block one (1) traveled-lane of a state highway, the normal working hours shall be as directed by the Department. No lanes shall be blocked or obstructed during adverse weather conditions (rain, snow, fog, etc.) without specific permission from the Department.

- Normal working hours for lane closures shall be between **9:00 A.M.—3:00 P.M., weekdays**. All exceptions regarding lane closures and working hours must be submitted and approved in advance by the Department.

- All materials and methods of construction shall be in accordance with the latest edition of the KYTC SSRBC.

- Date and time restrictions pertaining to this permit are as follows:

B. Explosives

- No explosive devices or explosive material shall be used within state right of way without proper license and approval of the Kentucky Department of Mines and Minerals, Explosive Division.

C. OSHA

- Kentucky Occupational Safety and Health Standards for the construction industry, which has the effect of law, states in part: (Page 52, 1926.651, Specific Excavation Requirements) "Prior to opening an excavation, effort shall be made to determine whether underground installations, (sewer, telephone, water, fuel, electric lines, etc.) will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation."

D. Archaeological

- Whenever materials of an archaeological nature are discovered during the course of construction work or maintenance operations, contact shall be made immediately with the Division of Environmental Analysis, which maintains an archaeologist on staff, or with the Office of the State Archaeologist located at the University of Kentucky. Following this consultation, further action shall be decided on a case-by-case basis by the State Highway Engineer or the Transportation Planning Engineer or their designated representative.

E. Environmental

- If the activity to which this permit related disturbs one acre of more of land, you must obtain a KPDES KYR10 permit. Information can be found at http://water.ky.gov/permitting/Pages/GeneralPermits.aspx

Permit Number: 05-2026-00719

II. UTILITIES

- The permittee shall be responsible for any damage to existing utilities. Any utility modifications or relocations within state right of way necessary, as determined by the Department or by the owner of the utility, shall be at the expense of the permittee and subject to the approval of the Department.
- All existing manholes and valve boxes shall be adjusted to be flush with finished grade.
- Encasement pipe shall conform to current standards for highway crossings in accordance with the KYTC Permits Manual. Pipe encasing shall not be required if the pipe interior diameter is 2" or less.
- Parallel utilities shall be constructed between back slope of ditch line and right-of-way line and shall have a minimum of 30" cover above top of pipe or conduit.
- All pavement cuts shall be restored per KYTC SSRBC and the District 5 Pavement Restoration drawing.
- Aerial crossing of utility lines shall have a minimum clearance of 18' from the high point of the roadway to the low point of the line.
- The clear zone requirement shall be met to the extent possible in accordance with the AASHTO Roadside Design Guide.
- The minimum depth for underground utilities is 42" under roadways, ramps, and ditch lines, and a minimum depth of 30" in all other areas within state right of way except for natural gas and petroleum fraction lines.
- Natural gas and petroleum fraction lines require a minimum depth of 60" under roadways, ramps, and ditch lines and a minimum depth of 42" cover when located outside of ditch lines.
- Any excavation within 3' of edge of pavement will require flowable fill as backfill. Flowable fill shall be in accordance with the KYTC SSRBC.

Utility notes specific to fully-controlled access highways ONLY:

- All work necessary within the right-of-way shall be performed behind a temporary woven wire fence erected prior to the start of work. The temporary fence shall be removed immediately upon completion of work on the right-of-way, and the control of access immediately restored to original condition, in accordance with the KYTC SSRBC. All vents, valves, manholes, etc., shall be located outside of the right-of-way. Encasement pipe shall extend from right-of-way line to right-of-way line and shall be one continuous run of pipe. The encasement pipe shall be welded at all joints. The boring pit and tail ditch shall extend past the existing toe of slope or bottom of ditch line and shall be a minimum of 42" deep. Work in interstate right-of-way requires approval from Federal Highway Administration (FHWA).

III. DRAINAGE

- Any negative impact to existing drainage will be the applicant's responsibility to repair in accordance with the KYTC SSRBC.
- All pipe shall be laid in a straight alignment, to proper grades, and with all materials and methods of installation including bedding and joint seating.
- Ensure no standing water on or along any new construction, regardless of existing conditions. This includes, but is not limited to: curb & gutter, header curb, entrances, sidewalk ramps, etc. If pooling water or evidence of such is found during the final inspection, the Permittee will be required to remedy prior to release of the permit.
- All drainage structures and appurtenances (manholes, catch basins, curbing, inlet basins, etc.) shall conform to the KYTC SSRBC and shall be constructed in accordance with the KYTC Standard Drawings.

Permit Number: 05-2026-00719

IV. PAVING

- Permittee/Contractor shall be responsible for damages to pavement adjacent to the project limits, if caused by any operation connected to the permitted project.
- Permittee/Contractor shall provide cores/documentation for any non-Primary Route demonstrating that the roadway can support not only construction traffic, but the traffic proposed by the Development/Permitted Work.
- Permittee/Contractor shall provide pre-construction photos/documentation to demonstrate the existing conditions prior to commencing work. Should deficiencies be identified prior to work, all areas shall be brought to the attention of KYTC for review.
- No bituminous pavement shall be installed within the right of way between November 15 and April 1, nor when the temperature is below 40 degrees Fahrenheit, without the express written consent of the Department. No bituminous pavement shall be installed when the underlying course is wet.
- Paving within the right of way shall be as follows:
  - Base (Type): DGA, (Thickness) 4IN
  - Base (Type): CL2 Asph Base 1.50 D PG64-22, (Thickness) 8IN
  - Base (Type): CL2 Asph Base 1.00D PG64-22, (Thickness) 3IN
  - Finished Surface (Type) CL3 Asph Surf 0.38A PG64-22, (Thickness) 1.5IN
- ***Paving requirements specific to this permit:***

Above pavement section shall be used if/when pavement section is not included in the attached plan set, otherwise the information provided in the plans takes precedence. Any questions, call 502-210-5400 and ask for Permits.

- Any permittee performing road cuts must restore the pavement to pre-existing conditions. Pictures/videos are recommended to ensure proper placement of signs and pavement markings that are temporarily removed for paving operations. In some cases, a pre-work inventory may be requested from the Department. Per Section 713 of the KYTC SSRBC, prepare and keep a written record of the locations of existing pavement markings, and furnish a copy to the Department before removing or obliterating the markings. Notify the Department a minimum of 14 calendar days prior to re-installing the final markings to verify if any modifications are needed.
- Existing pavement and shoulder material shall be removed to accommodate the above paving specifications. Existing pavement shall be removed until full depth mainline pavement is encountered to prevent any deficient sections. If field conditions do not match the plan and additional removal is required to ensure full depth pavement, contact the Department for approval of removal limits.
- The finished surface of all new pavement within the right-of-way shall be true to the required slope and grade, uniform in density and texture, free of irregularities, and equivalent in riding qualities to the adjacent highway pavement or as determined by KYTC or the KYTC SSRBC.
- All materials and methods of construction, including base and subgrade preparation, shall be in accordance with KYTC's Standard Specifications. Notify the Department a minimum of 48 hours prior to beginning paving operations.

  Phone: 502-210-5400; Permits Section
- Existing edge of pavement shall be saw-cut to provide a straight and uniform joint for new pavement. An approved joint sealer, in accordance with the KYTC SSRBC (latest edition), shall be applied between new and existing pavements. Ensure the remaining pavement section is sufficient and matches the planned section. If the existing pavement section is thinner, contact the Department prior to continuing construction to determine if additional pavement needs to be removed.

Permit Number: 05-2026-00719

V. ENTRANCES

- KYTC does not take responsibility for any plans associated with an approved permit. All plans shall be reviewed and stamped by a Professional Engineer and shall conform to all KYTC and any other applicable standards. Even after approval of the permit, if the Department finds any of the construction requires modification to meet standards or if a design or construction flaw is discovered, direction will be given to the Permittee and the change performed at no cost to the Department.

- Encroachment permits issued by KYTC in no way supersede local planning/zoning requirements or subdivision regulations. KYTC has no authority with zoning changes.

- Commercial entrances must be paved to the right-of-way line. Any deviations must be approved by KYTC before installation.

- KTYC can dictate drainage improvement installation during construction or after the entrance is at final grade. The permit release does not release the permit applicant from drainage maintenance.

- Signs (ground-mounted and span-mounted), stop bars, crosswalk, and proper lane markings must be in-place before the entrance is open for traffic. Lane width modifications must be approved by the Department.

VI. TRAFFIC

- Any contractor performing work within the vicinity of KYTC roadway lighting / school zone flashers or any Intersection with a traffic signal must specifically request traffic signal locates at least **two (2)** weeks prior to starting work in the right of way. For work near roadway lighting, request locates from the KYTC District 5 Traffic section at 502-338-5273. For work near traffic signals or school flashers in Jefferson County, contact Louisville Metro Electrical Maintenance at 502-574-3261. For work near traffic signals or school flashers outside Jefferson County, request locates from the KYTC District 5 Traffic section at 502-550-0803.
- The applicant must document the condition of all KYTC Roadway signage that is within the work area, prior to beginning work. The applicant must ensure that any signs impacted by the permitted work remain in place, whenever possible and remain undamaged. In the event that any signs have to be removed, it is the applicant's responsibility to document the sign's location before removal and to install the original or new sign per KYTC Standards for sign installation at the same or approximate location. If any questions arise about sign placement, the applicant must contact the District 5 Traffic section for comments.
- Any thermoplastic or striping damaged during the encroachment must be restored in a timely manner per KYTC SSRBC. Stop bars, arrows, words and crosswalks shall be thermoplastic material and all markings must be replaced / refreshed in their entirety. This work must be performed by a KYTC pre-qualified contractor.
- Any work within 10' of a pole, pole base or traffic facility must receive prior approval from the District 5 Traffic Engineer. Excavating near a signal, lighting pole or anchoring facility must be done so that it does not impact the structural integrity of the pole or base. The applicant must show calculations and plans for the excavation before receiving approval.
- If the scope of the permit involves a signal build or rebuild, it is the applicant's responsibility to apply for any required electrical service & pay for any associated fees, as well as request a field inspection and activation from the KYTC District 5 Traffic section. If the signal modifications require timing or phasing changes, this must be requested at least **two (2)** weeks in advance of the desired change. Applicant will be required to provide variable message boards for all approaches to notify motorists of the signal's activation, at least **two (2)** weeks prior to the turn on date. KYTC will not take ownership of permitted signals until the electrical inspection is formally accepted and approved.
- Work which impacts traffic loops requires 48-hour notice to the KYTC District 5 Traffic signal section at 502-550-0803. Accidental damage of a traffic loop must be reported immediately to the KYTC District 5 Traffic signal section at 502-550-0803 (Evenings / Weekends - 502-564-2080). Traffic loops out of operation for more than five working days will subject the applicant to the possible cancellation of the permit and a claim against the bond for the cost of the repairs. Loop repair must be performed by a KYTC pre-qualified contractor and must be coordinated with the KYTC District 5 Traffic section.

Permit Number: 05-2026-00719

VII. SIDEWALK SPECIFICATIONS

A. New Sidewalks

- Sidewalks shall be constructed of Class A concrete (3,500 psi.), shall be a minimum of 5' in width, 8" in thickness across the bituminous entrance, and 4" in thickness across the remaining sections. The width of the sidewalk must meet current ADA (Americans with Disabilities Act) guidelines.

- Sidewalks shall have tooled joints not less than 1" in depth at five (5') foot intervals, and pre-molded expansion joints extending entirely through the sidewalk at intervals not to exceed 50'. See more in Section 505 of the KYTC SSRBC for information relating to this requirement.

- All new sidewalk construction shall demonstrate a cross-slope less than or equal to 2.0% in accordance with ADA standards. Constructing sidewalk with a cross-slope of 1.5% is recommended.

- All new sidewalk construction will be inspected utilizing a 24" long digital inclinometer, with data measured to the **tenth of a percent-grade accuracy**.

B. Existing Sidewalks

- Use of the sidewalk shall not be blocked or obstructed and a usable walkway shall be maintained across the construction area at all times per ADA requirements and MUTCD specifications. Sidewalk closures must be approved by the Department before implementation.

- The location and design of ADA ramps (truncated domes/tactile warnings/etc.) will need to be field verified by the Department before installation. Any retrofitting will require the adherence to current ADA guidelines. If field conditions do not match the plans, contact the Department for approval of any modifications.

- Any section of sidewalk that becomes damaged shall be entirely replaced to match existing sections.

VIII. RIGHT OF WAY RESTORATION

- All disturbed portions of the right of way shall be restored to grass as per KYTC SSRBC (latest edition). A satisfactory turf, as determined by the Department, shall be established by the permittee prior to release of indemnity. Sodding or seeding shall be as follows:

  Lawn or High Maintenance Situation: 70% Lawn Fescue (e.g., variety - Falcon) and 30% Bluegrass or 70% Lawn Rye (e.g., variety - Derby) and 30% Bluegrass

  Right of Way Lawn Maintenance Situation: 70% KY 31 Fescue and 30% Perennial Rye Grass or 100% KY Fescue

- Two tons of clean straw mulch per acre of seeding.

- Prior to seeding, the ground shall be prepared in accordance with the KYTC SSRBC (latest edition).

- Substitutes for sod such as artificial turf, rocked mulch, or paved areas may be acceptable if they are aesthetically pleasing and receive prior approval from KYTC.

- All ditch-flow lines and all ditch-side slopes shall be sodded.

- Existing concrete right of way markers shall not be disturbed. If damaged in any way, they shall be entirely replaced by the permittee with new concrete markers to match the original markers, in accordance with Kentucky Department of Highways Standard Drawing for Right-Of-Way Monuments (current version). Markers that are entirely removed shall be re-established in the proper locations by the permittee and to the satisfaction of the Department. All right of way monuments must be installed by a licensed Land Surveyor.

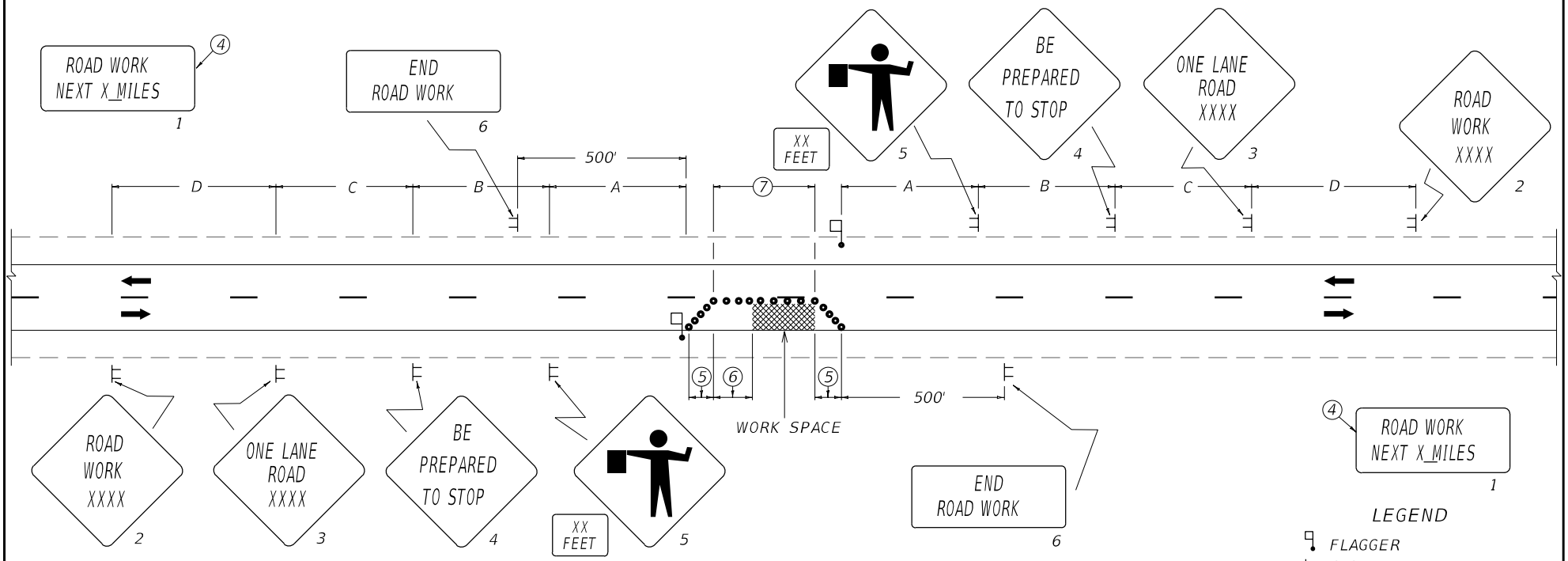
Permit Number: 05-2026-00719

IX. RIGHT OF WAY FENCE RESTORATION

- The replacement fence shall be a height of at least 48” and shall be of sufficient density to contain all animals (if applicable).
- The replacement fence shall be a minimum of 1’ and a maximum of 2’ outside the right-of-way line.
- The fence materials and design shall meet accepted industry standards and be treated as paintable. Durable finish materials such as vinyl are also acceptable.
- The permittee shall be required to maintain the fence in a high state of service. Access from the roadway for the purpose of maintenance will not be allowed. All work on the fence must be accessed from private property.
- The existing fence shall be removed by permittee and stored at the Department’s maintenance storage yard for future reuse by the Department. If not, the Department must be reimbursed for the cost of the fence removed from the site.

NOTICE TO PERMITTEE

THE PERMITTEE AGREES THAT ALL WORK WITHIN THE EXISTING RIGHT OF WAY SHALL BE DONE IN ACORDANCE WITH THE PLANS AS APPROVED AND PERMITTED BY AN ENCROACHMENT PERMIT. ANY CHANGES OR VARIANCES MADE AT THE TIME OF CONSTRUCTION WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF HIGHWAYS SHALL BE REMOVED BY THE PERMITTEE AT NO EXPENSE TO THE DEPARTMENT OF HIGHWAYS AND SHALL BE REDONE BY THE PERMITTEE TO CONFORM WITH THE APPROVED PLANS.



~ NOTES ~

1. THE SIZE OF SIGNS 2 THRU 5 SHALL BE 48" X 48" WITH 30" X 24" SUPPLEMENTAL PLAQUES FOR EXPRESSWAYS/FREEWAYS. THE MINIMUM SIZE OF SIGNS 2 THRU 5 SHALL BE 36" X 36" WITH 24" X 18" SUPPLEMENTAL PLAQUES FOR OTHER ROADWAYS. SIGN NOS. 1 AND 6 SHALL BE 48" X 24" FOR EXPRESSWAYS/FREEWAYS AND 36" X 18" FOR OTHER ROADWAYS. A FREEWAY IS DEFINED AS A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS. AN EXPRESSWAY IS DEFINED AS A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.
2. THE FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. FLAGGER STATIONS SHALL BE LOCATED FAR ENOUGH IN ADVANCE OF THE ACTIVITY AREA SO THAT APPROACHING ROAD USERS WILL HAVE SUFFICIENT DISTANCE TO STOP BEFORE ENTERING THE WORK SPACE. ILLUMINATION SHALL BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT.
3. DRUMS SHALL BE USED IN LIEU OF CONES IF CLOSURE EXTENDS INTO NIGHTTIME HOURS. GRABBER CONES MAY BE USED IN LIEU OF DRUMS IF THE USE OF DRUMS WOULD RESULT IN LANES THAT ARE TOO NARROW OR AN UNACCEPTABLE SITUATION BASED ON ENGINEERING JUDGMENT.

④ SIGN NO. 1 SHOULD BE INSTALLED AT THE LIMITS OF THE PROJECT WHEN THE CONSTRUCTION ZONE IS LONGER THAN TWO MILES IN LENGTH. THE DISTANCE SHOWN SHALL BE STATED TO THE NEAREST WHOLE MILE.

⑤ TAPERS SHALL BE 50' (MIN) TO 100' (MAX) IN LENGTH. SPACING OF CHANNELIZING DEVICES SHOULD BE 20' THRU THE TAPER AREAS.

⑥ BUFFER SPACE (OPTIONAL). IF USED, THE BUFFER SPACE SHOULD BE EXTENDED SO THAT THE TWO-WAY TRAFFIC TAPER IS PLACED BEFORE A HORIZONTAL OR CREST VERTICAL CURVE TO PROVIDE ADEQUATE SIGHT DISTANCE FOR THE FLAGGER AND A QUEUE OF STOPPED VEHICLES. REFER TO TABLE 6C-2 OF THE MUTCD FOR GUIDANCE ON BUFFER SPACE LENGTH.

⑦ SPACING OF CHANNELIZING DEVICES THRU THE ACTIVITY AREA SHOULD BE 80'. ON ROADWAYS WITH WIDTHS LESS THAN 20 FEET, CHANNELIZING DEVICES MAY BE OMITTED THRU THE ACTIVITY AREA BASED ON ENGINEERING JUDGMENT.

BID ITEMS AND UNIT TO BID
LANE CLOSURE EACH
REFER TO SECTION 112 OF STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION.

SIGNING AND SPACING TABLE				
ROAD TYPE	A	B	C	D
EXPRESSWAY/ FREEWAY	1000'	500'	1100'	2600'
SP. LT. ≥ 45 MPH*	500'	500'	500'	1100'
SP. LT. ≤ 40 MPH*	250'	250'	250'	250'

*NOTE: USE NORMAL POSTED SPEED LIMIT

LEGEND
- FLAGGER
- SIGN
- CHANNELIZING DEVICES
  - CONES
  - DRUMS

DRAWING NOT TO SCALE

KENTUCKY DEPARTMENT OF HIGHWAYS

LANE CLOSURE TWO-LANE HIGHWAY

STANDARD DRAWING NO. TTC-100-05

SUBMITTED R. Clifton Wolfe — DIRECTOR DIVISION OF TRAFFIC OPERATIONS — 02-26-20 DATE

APPROVED — STATE HIGHWAY ENGINEER — 02-26-20 DATE

TYPICAL HIGHWAY BORE DETAIL
- FOR NON-FULLY CONTROLLED HIGHWAYS -

KYTC KEPT #: _____

SECTION 1: HIGHWAY INFORMATION

COUNTY:	ROUTE:	MILE POINT:	PAVEMENT WIDTH:
Oldham	US42	7	24'

SECTION 2: UTILITY INFORMATION

UTILITY TYPE:	PIPE TYPE:	DIAMETER:
Water	HDPE	12"

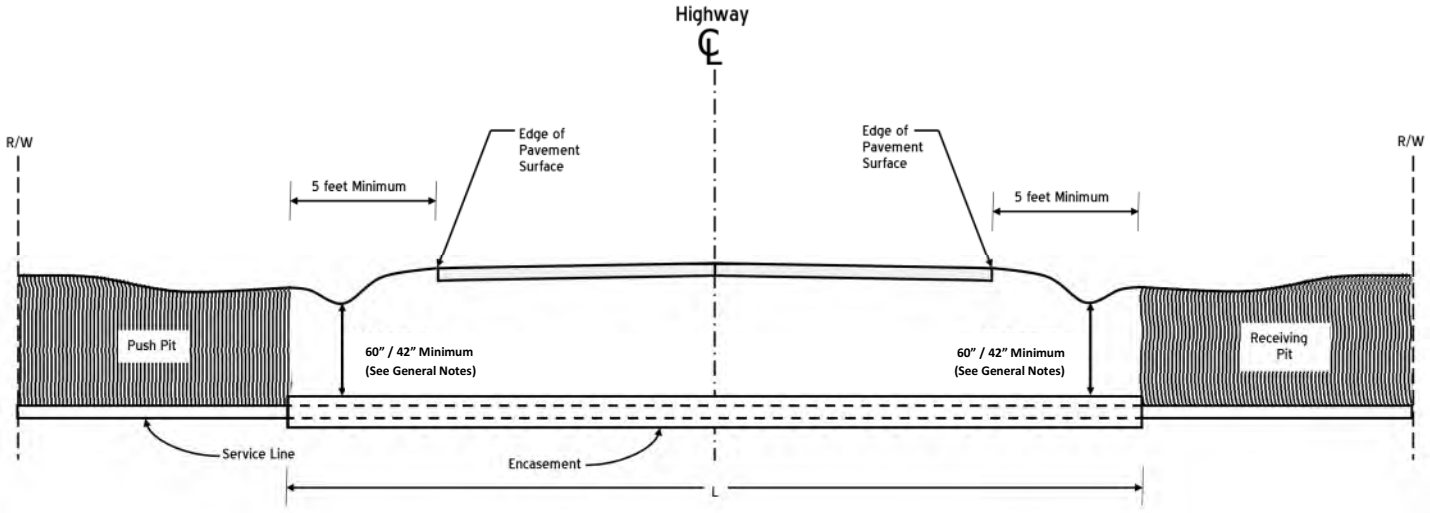
SECTION 3: ENCASEMENT INFORMATION

ENCASEMENT TYPE:	DIAMETER:
Steel	24"

SECTION 4: BORE INFORMATION

BORE TYPE:	LENGTH (L):	DIAMETER:
Bore and Jack	45	24"

SECTION 5: DETAIL FOR NON-FULLY CONTROLLED HIGHWAYS



SECTION 6: GENERAL NOTES

- Push Pit and Receiving Pit shall be backfilled and thoroughly compacted.
- All ditch lines are to remain open at all times and restored to original condition.
- Shape, Seed and Straw all disturbed areas immediately after completing the work.
- Provide traffic control as required to ensure the safety of the traveling public in accordance with the current edition of the *Manual on Uniform Traffic Control Devices*.
- The minimum depth for underground electrical lines and natural gas and petroleum fraction lines under roadways, ramps, and ditch lines is **60"**. The minimum depth for underground electrical lines, natural gas and petroleum fraction lines, and all other underground utilities is **42"** in all other areas, unless NESC requires additional depth.
- See KYTC Permits Manual for all requirements and specifications.

TYPICAL HIGHWAY BORE DETAIL
- FOR NON-FULLY CONTROLLED HIGHWAYS -

KYTC KEPT #: _____

SECTION 1: HIGHWAY INFORMATION

COUNTY:	ROUTE:	MILE POINT:	PAVEMENT WIDTH:
Oldham	KY393	10	24'

SECTION 2: UTILITY INFORMATION

UTILITY TYPE:	PIPE TYPE:	DIAMETER:
Water	HDPE	12"

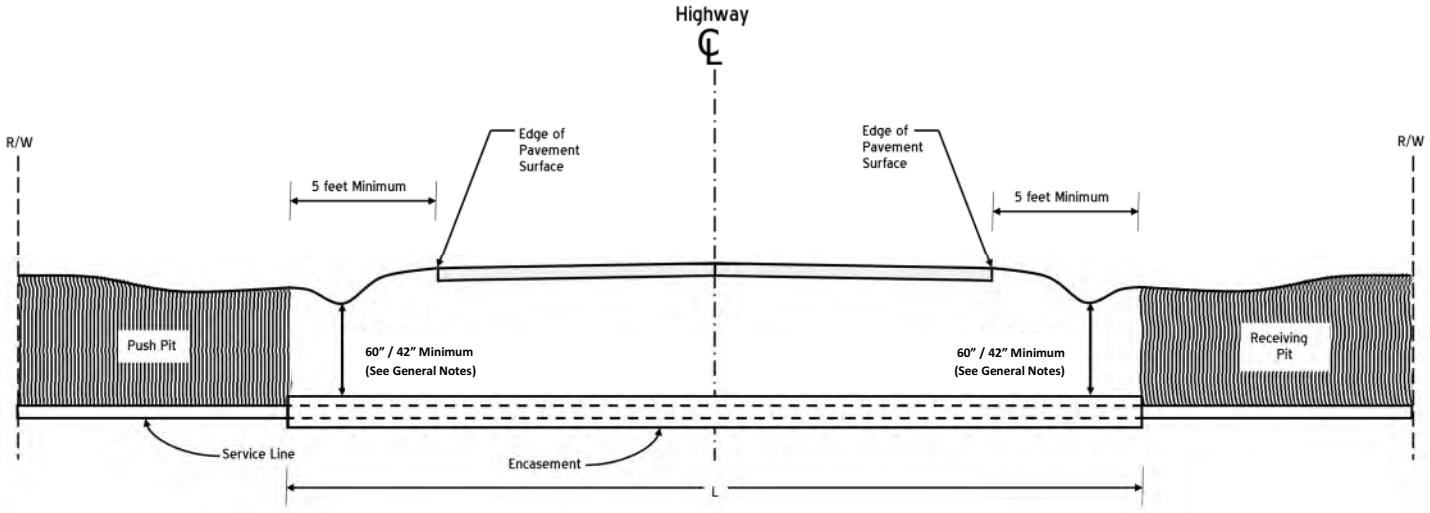
SECTION 3: ENCASEMENT INFORMATION

ENCASEMENT TYPE:	DIAMETER:
Steel	24"

SECTION 4: BORE INFORMATION

BORE TYPE:	LENGTH (L):	DIAMETER:
Bore and Jack	180	24"

SECTION 5: DETAIL FOR NON-FULLY CONTROLLED HIGHWAYS



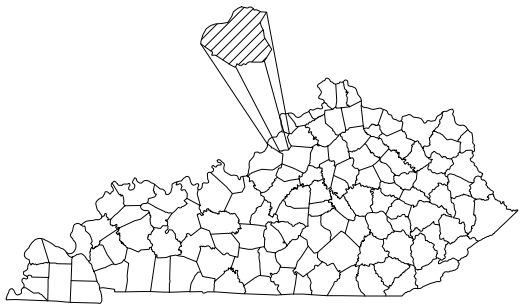
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- See KYTC Permits Manual for all requirements and specifications.

OLDHAM COUNTY WATER DISTRICT
US42 WATER MAIN EXTENSION
KY1694 TO KY393

OLDHAM COUNTY, KENTUCKY

OLDHAM COUNTY



OLDHAM COUNTY WATER DISTRICT

DWG. No.	INDEX OF DRAWINGS
G-00-002 -	VICINITY MAP, LEGEND & UTILITY INFORMATION
CU-00-101 -	12" WATER MAIN PLAN - STA. 0+00 TO STA. 12+00
CU-00-102 -	12" WATER MAIN PLAN - STA. 12+00 TO STA. 27+00
CU-00-103 -	12" WATER MAIN PLAN - STA. 27+00 TO STA. 42+00
CU-00-104 -	12" WATER MAIN PLAN - STA. 42+00 TO STA. 54+00
CU-00-105 -	12" WATER MAIN PLAN - STA. 54+00 TO STA. 67+00
CU-00-106 -	12" WATER MAIN PLAN - STA. 67+00 TO STA. 81+00
CU-00-107 -	12" WATER MAIN PLAN - STA. 81+00 TO STA. 95+00
CU-00-108 -	12" WATER MAIN PLAN - STA. 95+00 TO STA. 109+00
CU-00-109 -	12" WATER MAIN PLAN - STA. 109+00 TO STA. 123+00
CU-00-110 -	12" WATER MAIN PLAN - STA. 123+00 TO STA. 137+00
CU-00-111 -	12" WATER MAIN PLAN - STA. 137+00 TO STA. 151+00
CU-00-112 -	12" WATER MAIN PLAN - STA. 151+00 TO STA. 160+00
CU-00-113 -	12" WATER MAIN PLAN - STA. 160+00 TO STA. 167+10 E.O.L.
CU-00-501 -	WATER MAIN DETAILS
CE-00-501 -	EROSION CONTROL DETAILS AND NOTES

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MAY, 2026

REGULATORY REVIEW SET
GRW PROJECT NO. 5180

PRINTED: 5/7/2026 @ 9:59AM

FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-G-00-001.dwg



PROJECT MAP
NOT TO SCALE

LEGEND

EX. SANITARY SEWER	SAN
OVERHEAD ELECTRIC & UTILITIES	OHU
PROPERTY LINE	P/L
RIGHT-OF-WAY	R/W
EX. WATER LINE	W
EX. GAS LINE	G
EX. STREAM	
EX. TELE/FIBER OPTIC	T
EX. HYDRANT	
TBM (BENCH MARK)	
EX. WATER VALVE	
EX. WATER METER	WM
EX. UTILITY POLE	
EX. TELEPHONE BOX	
AIR RELEASE VALVE (WATER)	
PROPOSED GATE VALVE	
EX. GUY WIRE	

GENERAL NOTES:

1. SEWER, WATER, ELECTRIC, AND TELEPHONE SERVICES TO EXISTING HOUSES ARE NOT INDICATED ON THE DRAWINGS. CONTRACTOR SHALL CALL "BEFORE YOU DIG" TO LOCATE SERVICE LINES AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING SERVICES. ALL DAMAGED UTILITY MAINS AND SERVICES ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IMMEDIATELY REPAIRED AT THE CONTRACTOR'S EXPENSE.
2. THE CONTRACTOR IS ADVISED TO EXERCISE CAUTION IN HIS OPERATIONS IN AREAS WHERE PLANS INDICATE THE PRESENCE OF A GAS LINE OR OTHER LINES CARRYING HAZARDOUS MATERIAL.
3. CONTRACTOR SHALL NOT DISRUPT ANY UTILITY SERVICES WITHOUT SCHEDULING AND OBTAINING APPROVAL FROM OWNER.
4. THE UTILITIES AND THEIR LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND VERIFY ALL UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING UTILITY WORK INCLUDING POSSIBLE TEMPORARY SUPPORT OF UTILITY POLES AS REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO AVOID EXISTING UTILITIES AND PERFORM ANY REQUIRED REPAIRS IF UTILITIES ARE DAMAGED. IN ADDITION TO ALL UTILITY LINES, THE CONTRACTOR SHALL AVOID AND REPAIR ANY DAMAGE TO FIELD DRAINAGE TILES AND PRIVATE IRRIGATION SYSTEMS. THE CONTRACTOR SHALL NOTIFY THE OWNER WHEN UTILITIES OR OTHER SUBSURFACE LINES ARE DAMAGED.
5. PROPERTY LINES AND RIGHT-OF-WAYS SHOWN ARE NOT THE RESULT OF DEED RESEARCH AND SHALL BE CONSIDERED APPROXIMATE.
6. THE AERIAL PHOTOGRAPHS ARE SUBJECT TO SCALE INACCURACIES AND SHOULD NOT BE USED FOR SCALED QUANTITY TAKEOFFS. STATIONS SHOWN ARE FIELD MEASURED.
7. ALL TREES AND SHRUBS IN THE VICINITY OF THE PROPOSED WATER MAIN SHALL BE PROTECTED. NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL FROM THE OWNER OR ENGINEER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION FROM EXISTING SEWER MAINS. CROSSINGS SHALL MAINTAIN A MINIMUM OF 18" VERTICAL CLEARANCE WITH THE SEWER BELOW THE WATER MAIN.
9. ALL DISTURBED AREAS SHALL BE RESTORED TO EQUAL TO OR BETTER THAN ORIGINAL CONDITIONS.
10. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, PERFORMED TO THE SATISFACTION OF THE OWNER, COUNTY AND TOWNSHIP ROAD DEPARTMENTS, KY DOT, THE ENGINEER, AND INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
11. WATER MAIN SHALL BE ENCASED IN CONCRETE IN AREAS WHERE 10' SEPARATION FROM EXISTING SEWER LINE CANNOT BE OBTAINED.

For Buried Line/Cable Locations

** Contact Two Business Days Before **

TWO WORKING DAYS BEFORE YOU DIG CALL 1-800-752-6007
(TOLL FREE) KENTUCKY UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

Kentucky 811 — Know what's below. Call before you dig. www.kentucky811.com

UTILITY INFORMATION

LaGRANGE UTILITIES (SANITARY)
412 EAST JEFFERSON STREET
LaGRANGE, KY. 40031
(502) 222-9325

KENTUCKY UTILITIES
1100 MAIN STREET
SHELBYVILLE, KY. 40065
(502) 633-2723

LG&E ENERGY
220 WEST MAIN STREET
LOUISVILLE, KY. 40232
(502) 627-3159

BELL SOUTH TELECOMMUNICATIONS
3719 BARDSTOWN ROAD
LOUISVILLE, KY. 40218
(502) 454-9818

TIME WARNER CABLE
4701 COMMERCE CROSSING DRIVE
LOUISVILLE, KY. 40229
(502) 357-4400

ABBREVIATIONS

EOL	END OF LINE
EOP	EDGE OF PAVEMENT
TBR	TO BE REPLACED (SEE CORRESPONDING DETAIL)
RCP	REINFORCED CONCRETE PIPE
CMP	CORRUGATED METAL PIPE
PVC	POLY VINYL CHLORIDE PIPE
BOL	BEGINNING OF LINE

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CLIENT PROJECT NO.

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VICINITY MAP, LEGEND AND UTILITY INFORMATION

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED	NWG
DRAWN	CEK
REVIEWED	AAB
APPROVED	NWG

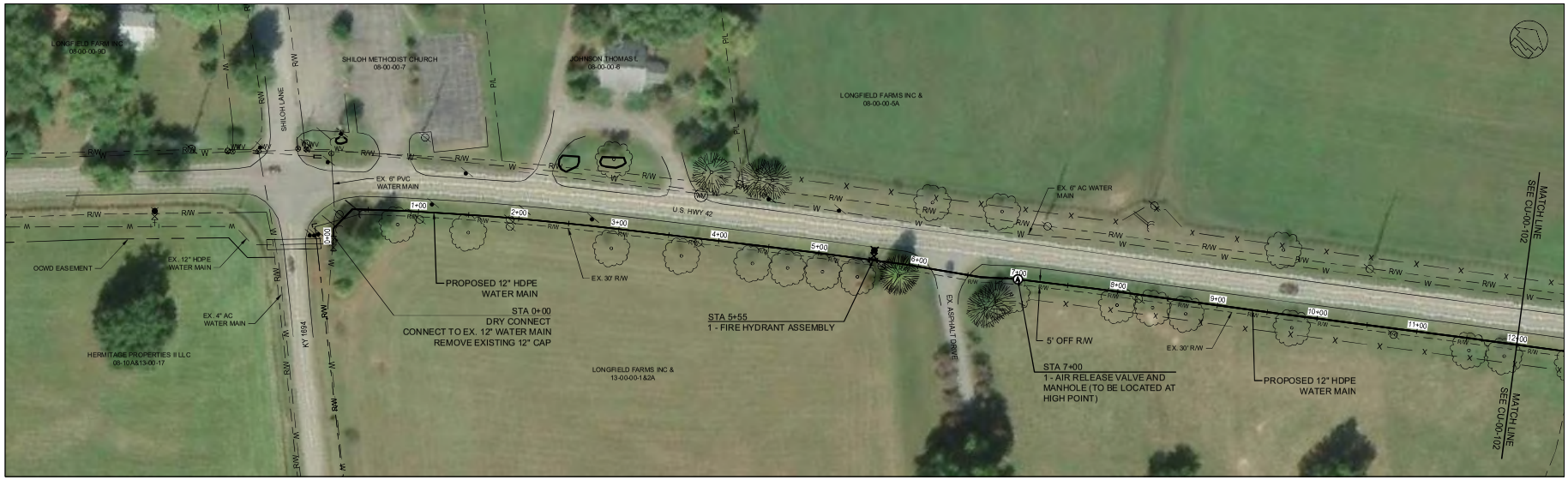
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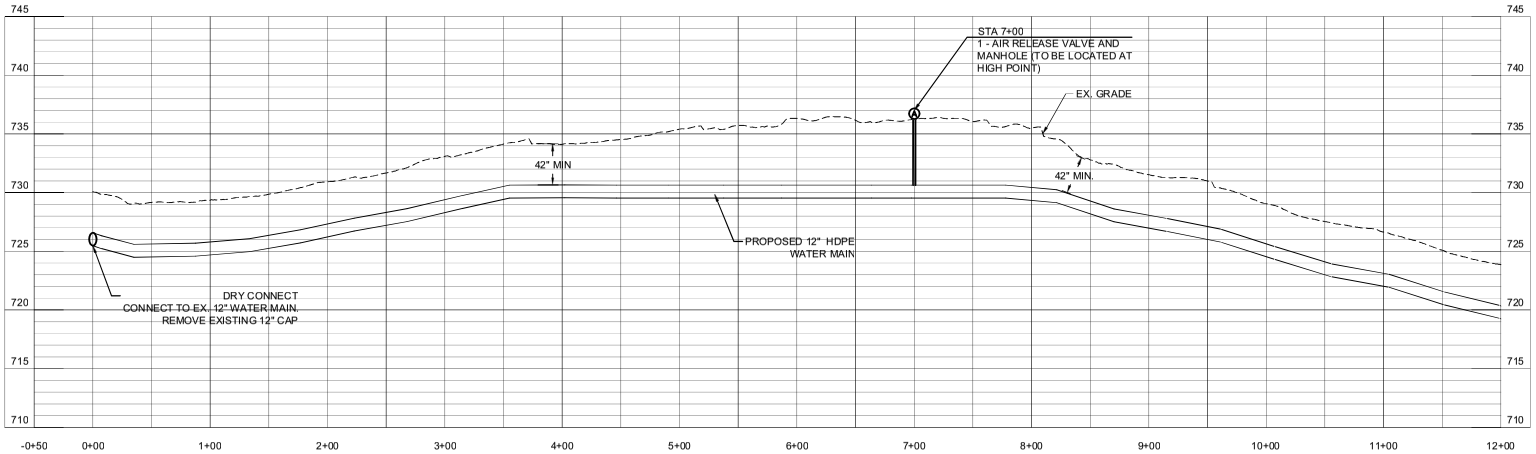
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DATE: MAY, 2026
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SHEET NO.: G-00-002

PLOTTED BY: dkratz
PRINTED: 5/7/2026 @ 9:59AM
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STA. 0+00 TO STA. 12+00



PROFILE - STA. -0+50 TO STA. 12+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42"
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1" = 5'

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 00+00 TO STA. 12+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

REVISIONS:

NO.	DESCRIPTION	DATE	BY

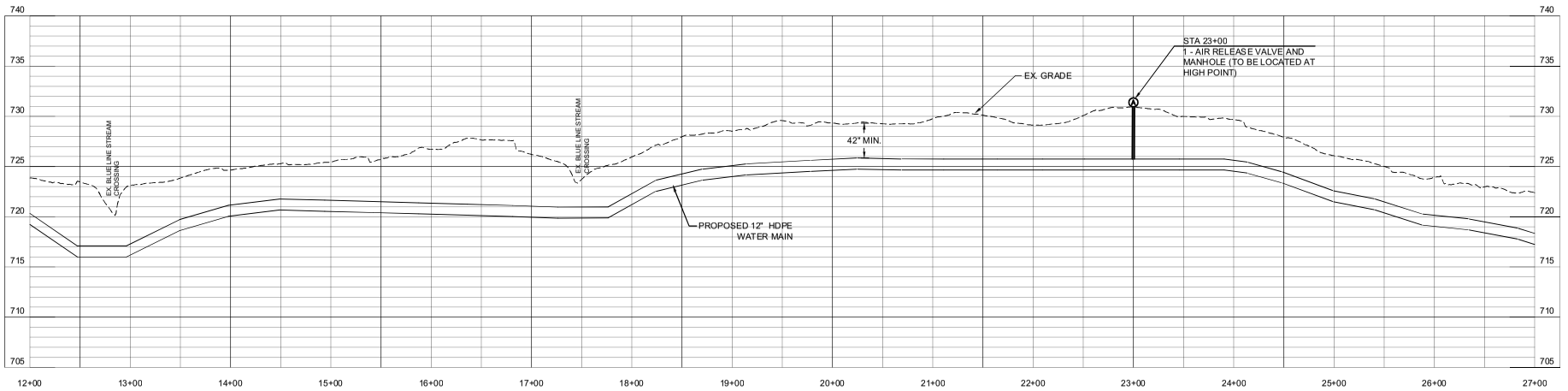
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STA. 12+00 TO STA. 27+00



PROFILE - STA. 12+00 TO STA. 27+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42"
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'

REGULATORY REVIEW SET

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE STA. 12+00 TO STA. 27+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

REVISIONS:

NO.	DESCRIPTION	DATE	BY

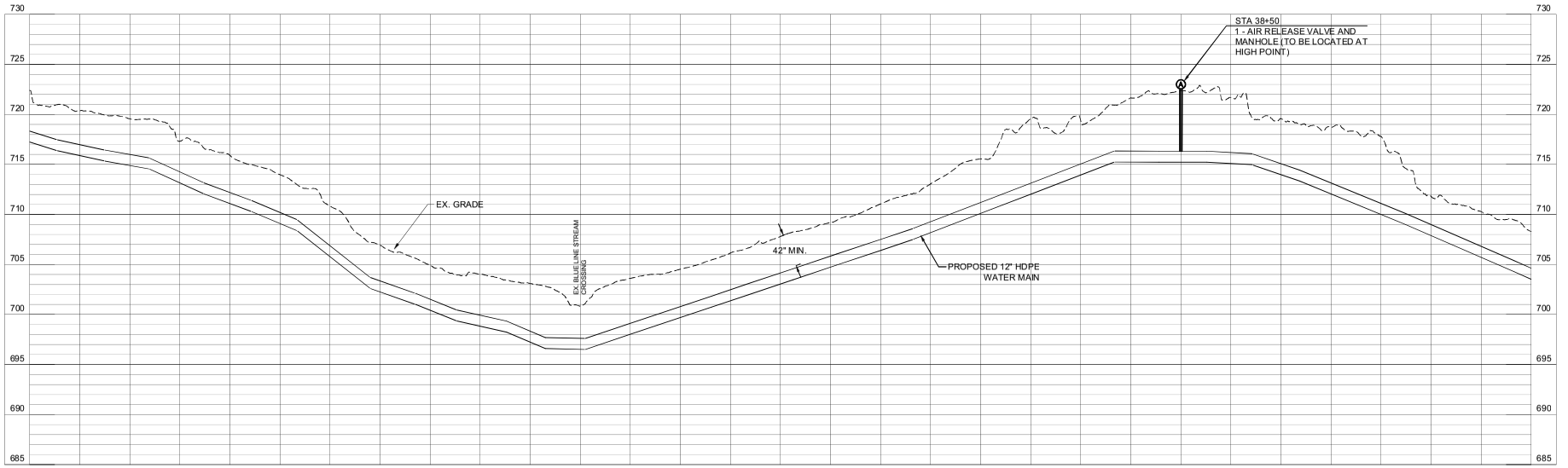
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STA. 27+00 TO STA. 42+00



PROFILE - STA. 27+00 TO STA. 42+00 LINE "Water Main Ext."

GENERAL NOTES:

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HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1" = 5'

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CLIENT PROJECT NO.

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REGULATORY REVIEW SET

12" WATER MAIN PLAN & PROFILE STA. 27+00 TO STA. 42+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

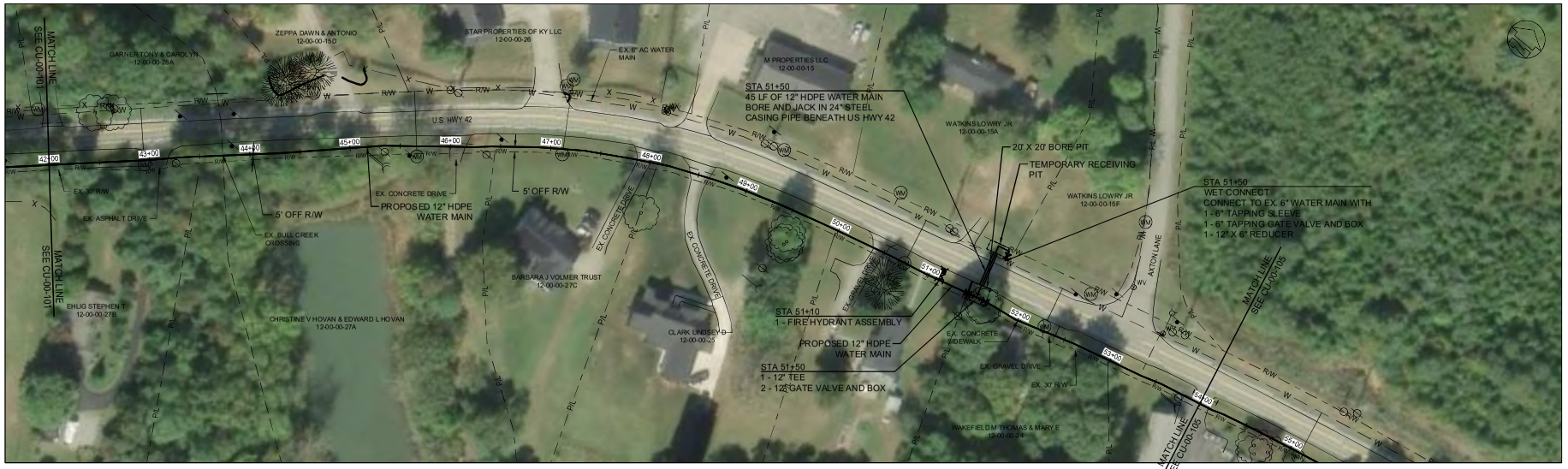
REVISIONS

NO.	DESCRIPTION	DATE	BY

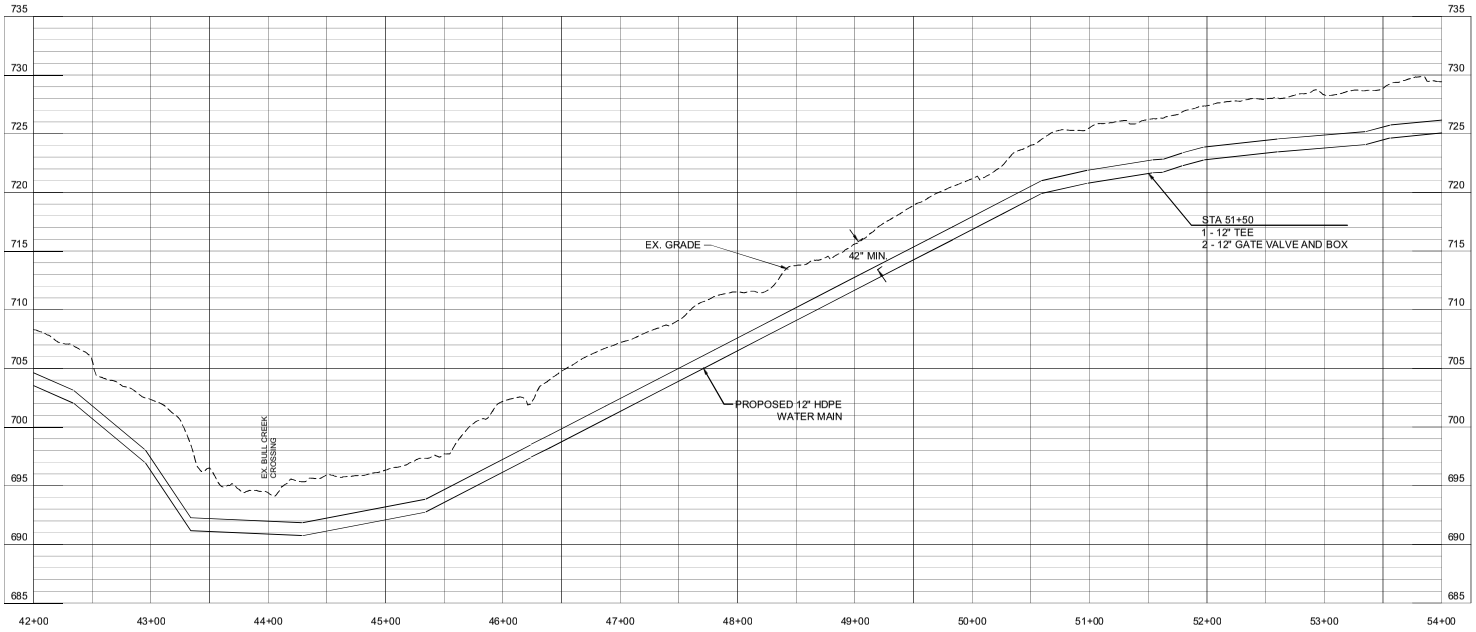
SCALE CHECK | THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: MAY, 2026
SCALE: 1" = 50'
SHEET NO.: CU-00-103

PLOTTED BY: dkratz
PRINTED: 5/11/2026 @ 10:38AM
FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-103.dwg



STA. 42+00 TO STA. 54+00



PROFILE - STA. 42+00 TO STA. 54+00 LINE "Water Main Ext."

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

REGULATORY REVIEW SET

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 42+00 TO STA. 54+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

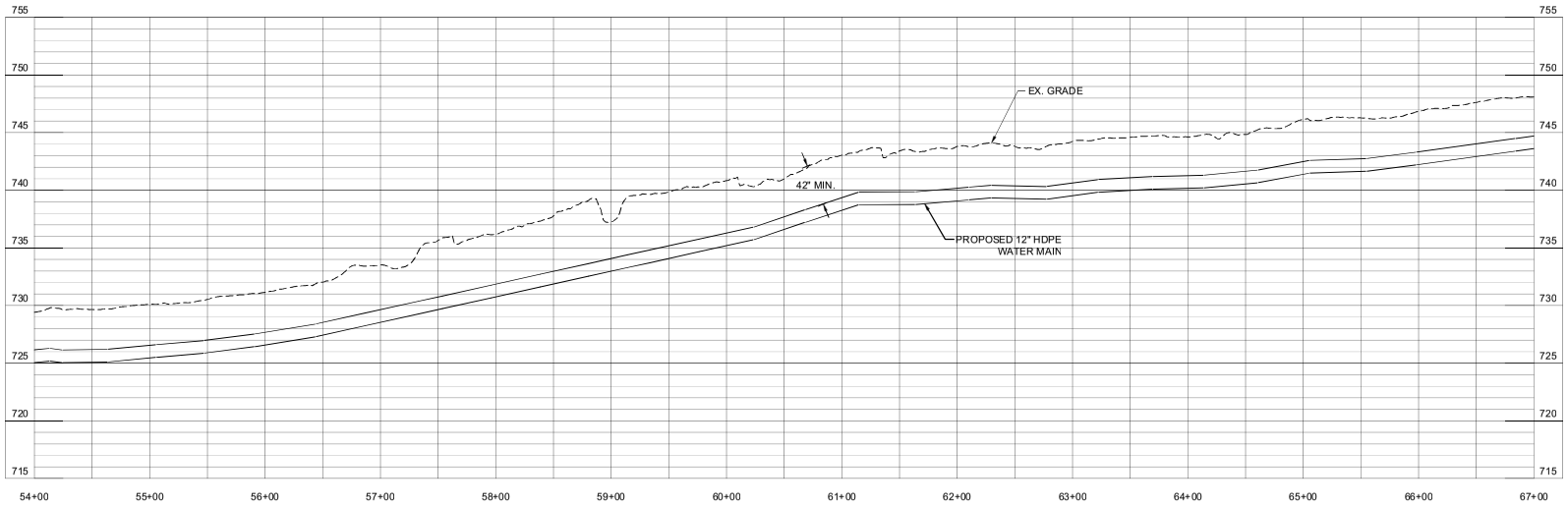
SCALE CHECK | THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: MAY, 2026
SCALE: 1" = 50'
SHEET NO.: CU-00-104

PLOTTED BY: dkratz
PRINTED: 5/11/2026 @ 10:33AM
FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-104.dwg



STA. 54+00 TO STA. 67+00



PROFILE - STA. 54+00 TO STA. 67+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 54+00 TO STA. 67+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

REGULATORY REVIEW SET

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

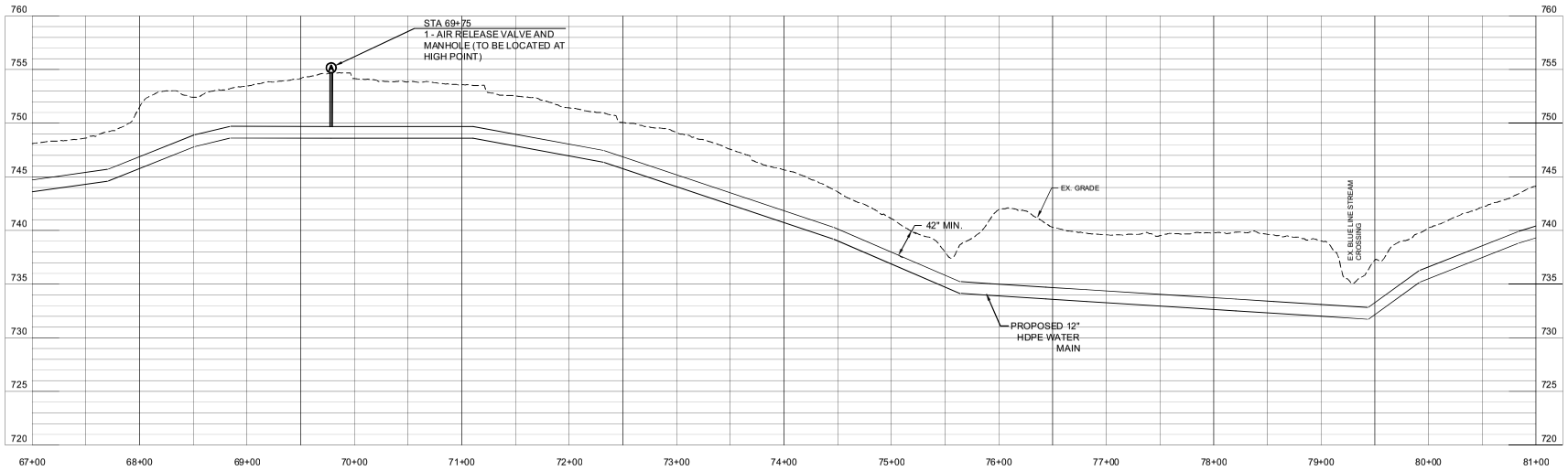
SCALE CHECK: 1 INCH MEASURE ON ORIGINAL DRAWING

DATE: MAY, 2026
SCALE: 1" = 50'
SHEET NO. CU-00-105

PLOTTED BY: dkratz
PRINTED: 5/11/2026 @ 10:34AM
FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-105.dwg



STA. 67+00 TO STA. 81+00



PROFILE - STA. 67+00 TO STA. 81+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

REGULATORY REVIEW SET

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE STA. 67+00 TO STA. 81+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED NWG

DRAWN CEK

REVIEWED AAB

APPROVED NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK 1" MEASURES 1" IF PRINTED PROPERLY

DATE: MAY, 2026

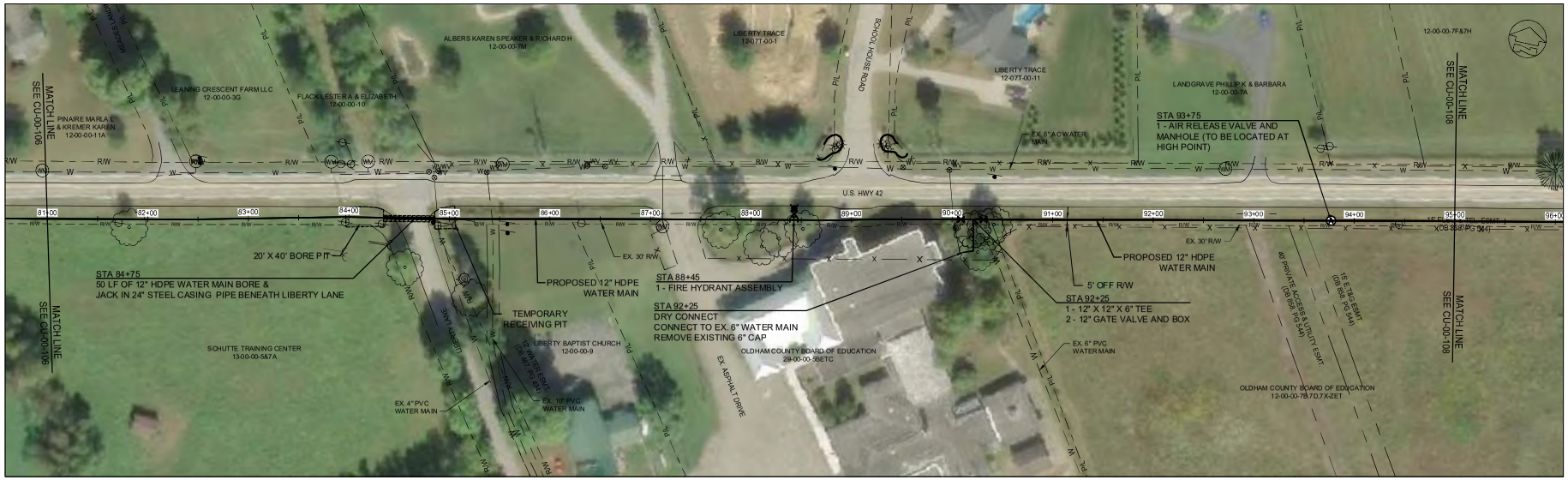
SCALE: 1" = 50'

SHEET NO. CU-00-106

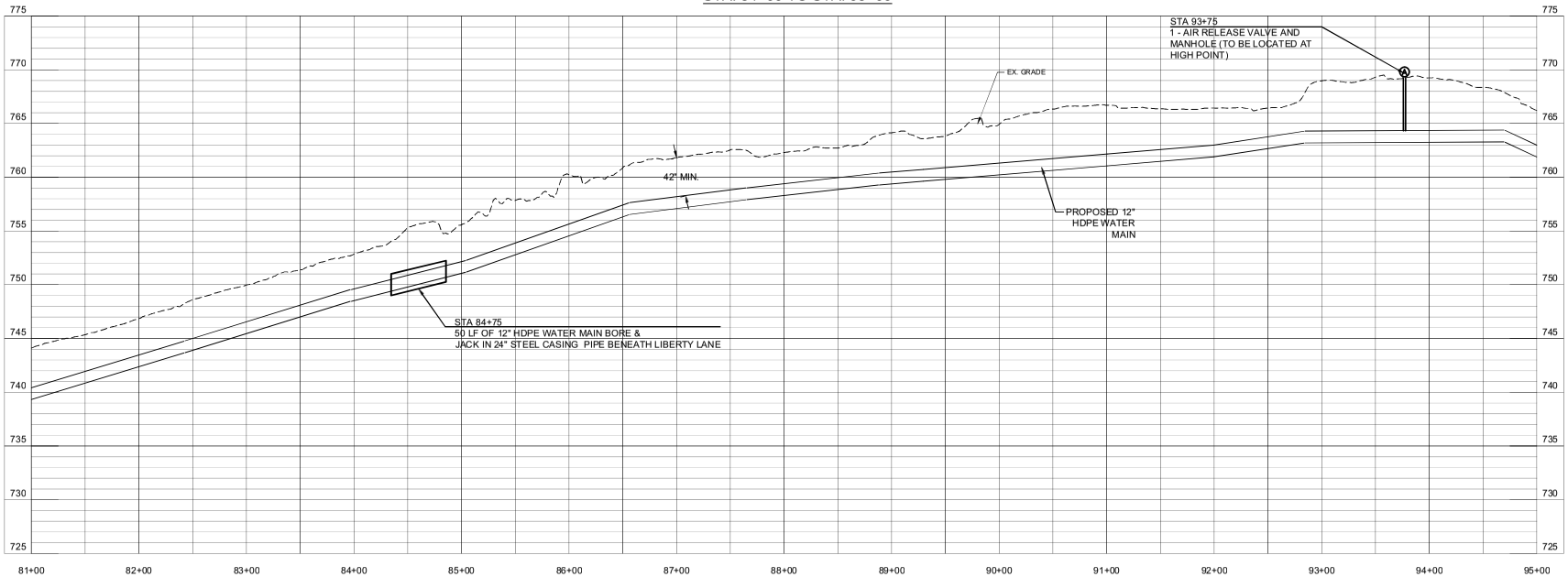
PLOTTED BY: dcruz

PRINTED: 5/11/2026 @ 10:48AM

FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-106.dwg



STA. 81+00 TO STA. 95+00



GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES , MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60"

PROFILE - STA. 81+00 TO STA. 95+00 LINE "Water Main Ext."

VERTICAL SCALE: 1" = 5'-0"

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

REGULATORY REVIEW SET

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE STA. 81+00 TO STA. 95+00

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: MAY, 2026

SCALE: 1" = 50'

SHEET NO.: CU-00-107

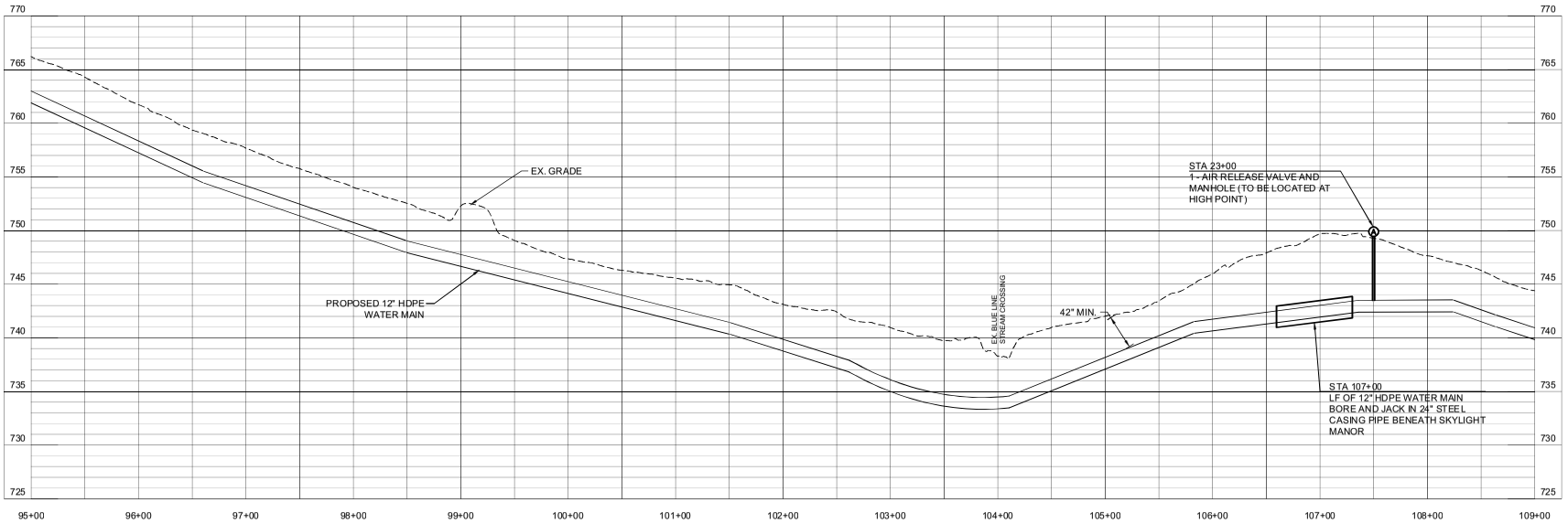
PLOTTED BY: dkratz

PRINTED: 5/11/2026 @ 10:55AM

FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-107.dwg



STA. 95+00 TO STA. 109+00



GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

PROFILE - STA. 95+00 TO STA. 109+00 LINE "Water Main Ext."

VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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REGULATORY REVIEW SET

12" WATER MAIN PLAN & PROFILE
STA. 95+00 TO STA. 109+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

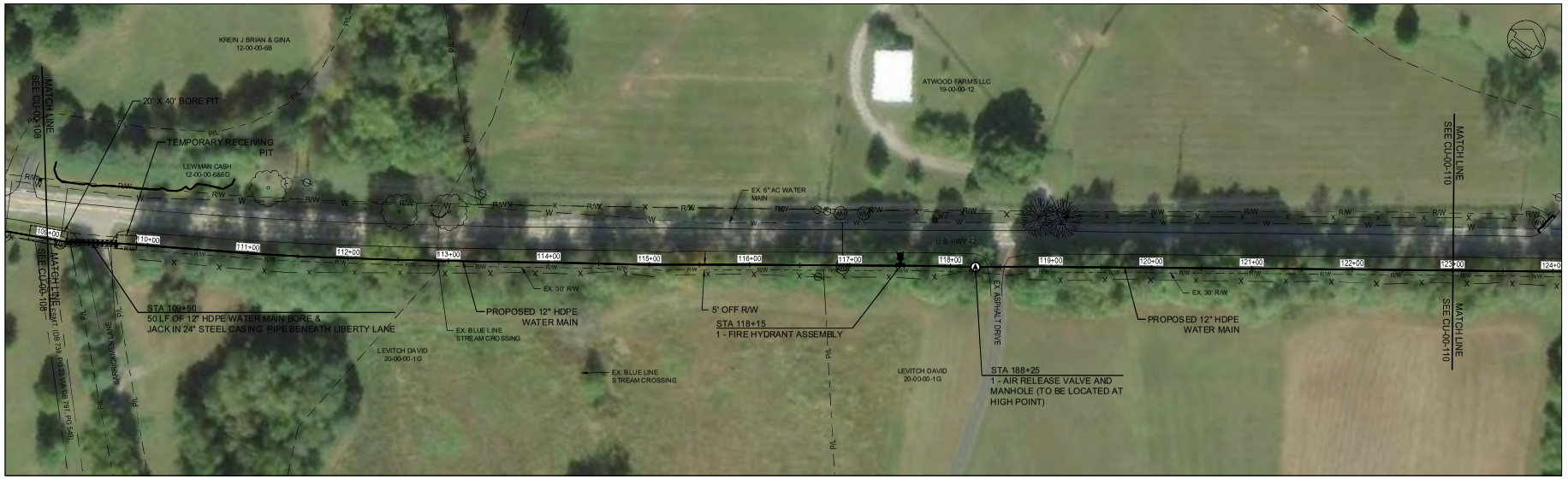
REVISIONS

NO.	DESCRIPTION	DATE	BY

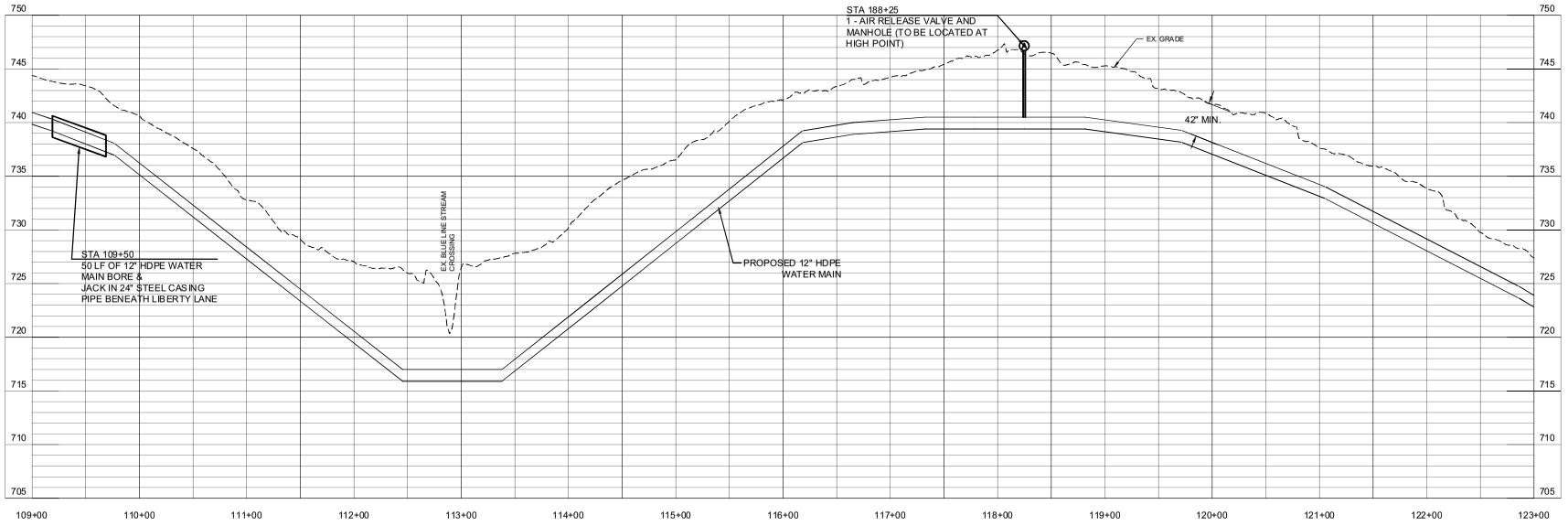
SCALE CHECK: 1 INCH MEASURE ON SCALE IS 1" WHEN PLOTTED

DATE: MAY, 2026
SCALE: 1" = 50'
SHEET NO.: CU-00-108

PLOTTED BY: dkratz
PRINTED: 5/11/2026 @ 11:58AM
FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-108.dwg



STA. 109+00 TO STA. 123+00



GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

PROFILE - STA. 109+00 TO STA. 123+00 LINE "Water Main Ext."

VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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REGULATORY REVIEW SET

12" WATER MAIN PLAN & PROFILE
STA. 109+00 TO STA. 123+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS BAR SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: MAY, 2026

SCALE: 1" = 50'

SHEET NO.: CU-00-109

PLOTTED BY: dkratz

PRINTED: 5/11/2026 @ 11:30AM

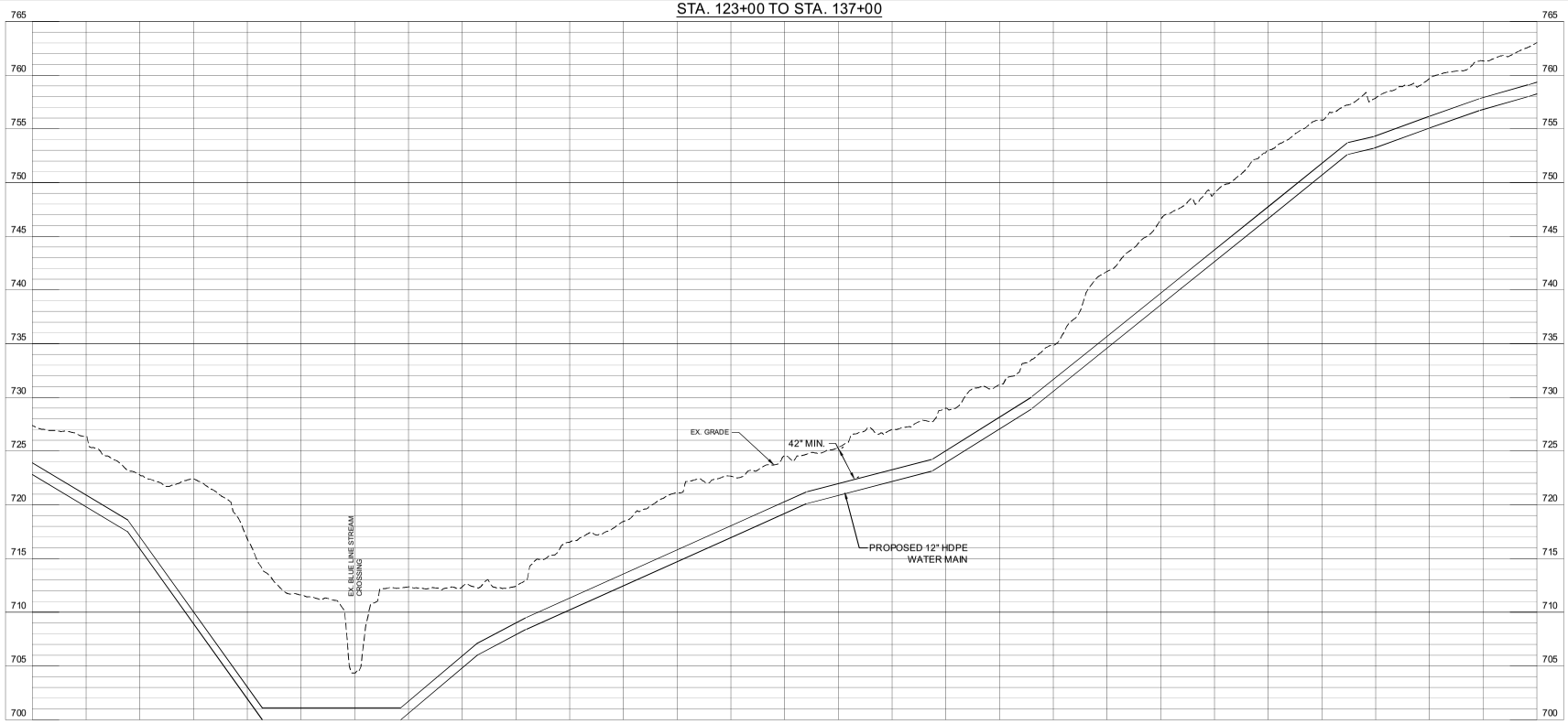
FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-109.dwg

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".



STA. 123+00 TO STA. 137+00



PROFILE - STA. 123+00 TO STA. 137+00 LINE "Water Main Ext."

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'

REGULATORY REVIEW SET

GRW PROJECT NO. 5180
CLIENT PROJECT NO.

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12" WATER MAIN PLAN & PROFILE
STA. 123+00 TO STA. 137+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED	NWG
DRAWN	CEK
REVIEWED	AAB
APPROVED	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

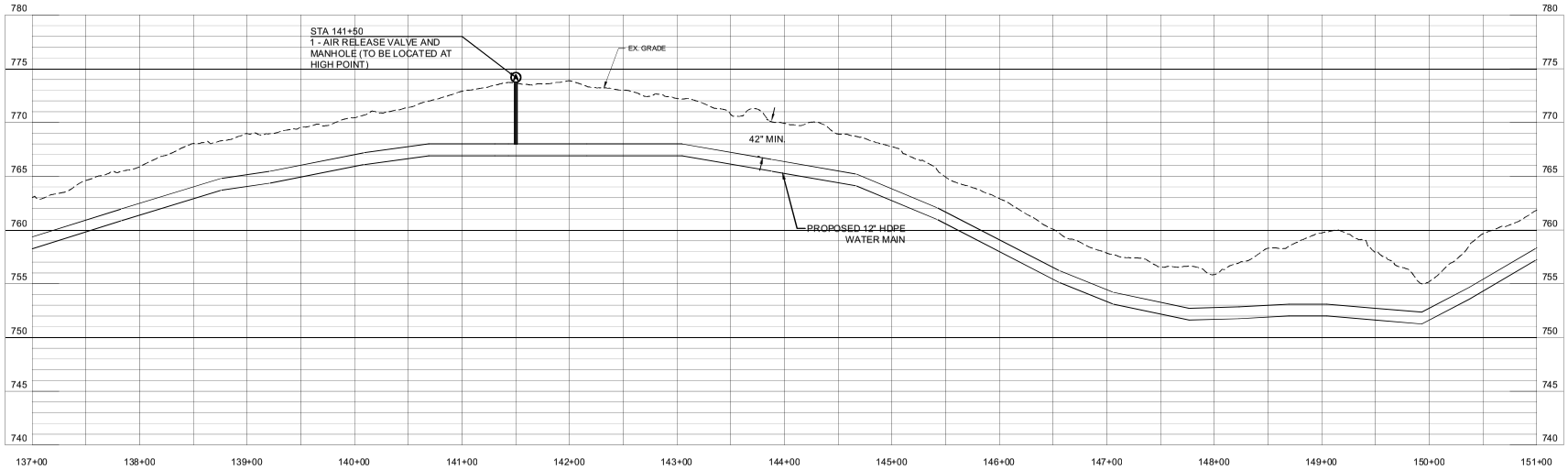
SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: MAY, 2026
SCALE: 1" = 50'
SHEET NO.: CU-00-110

PLOTTED BY: NGurnselman
PRINTED: 5/11/2026 @ 2:49PM
FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-110.dwg



STA. 137+00 TO STA. 151+00



PROFILE - STA. 137+00 TO STA. 151+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 331113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

VERTICAL SCALE: 1"=5'

HORIZONTAL SCALE: 1" = 50'-0"

0 25' 50' 100' 150'

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

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REGULATORY REVIEW SET

12" WATER MAIN PLAN & PROFILE
STA. 137+00 TO STA. 151+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: [THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED]

DATE: MAY, 2026

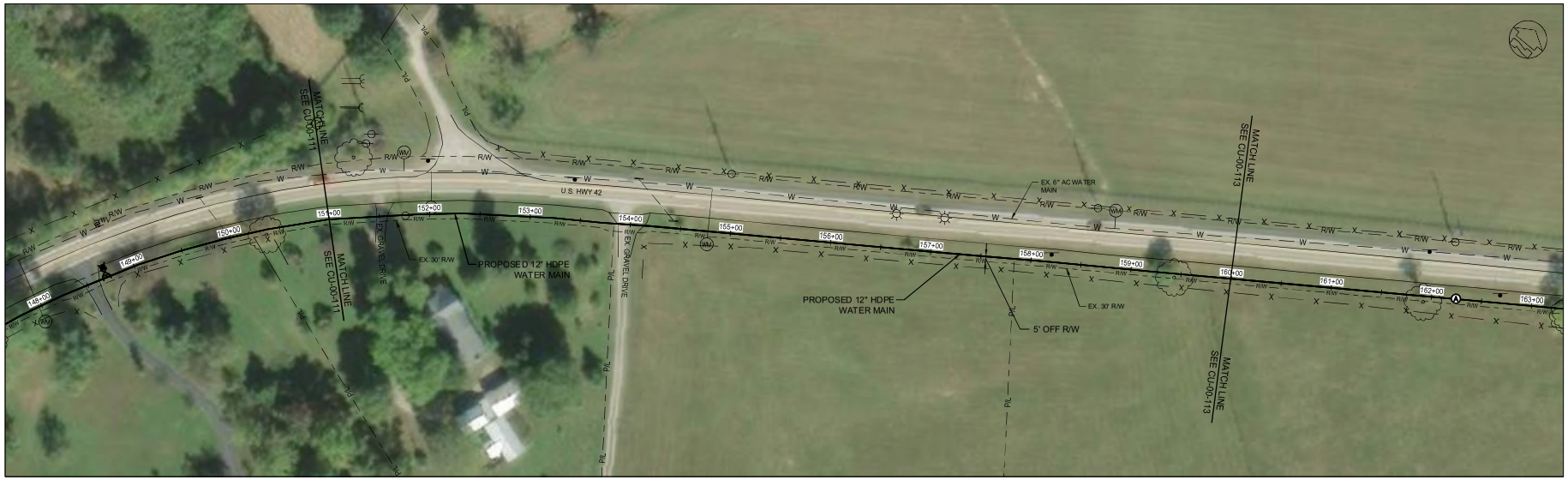
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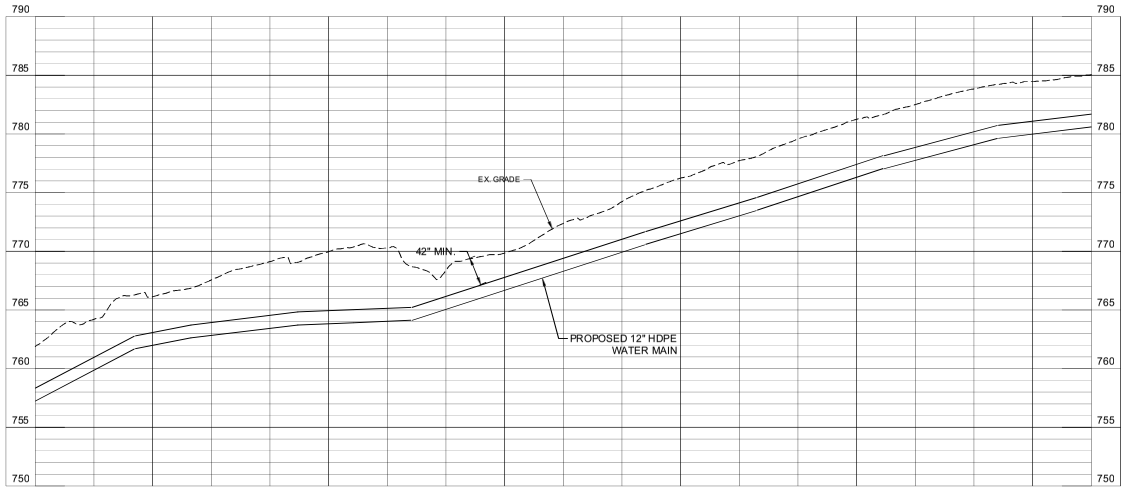
PLOTTED BY: dkratz

PRINTED: 5/11/2026 @ 11:47AM

FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CU-00-111.dwg



STA. 151+00 TO STA. 160+00



PROFILE - STA. 151+00 TO STA. 160+00 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 33111.3)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDYCULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER OF 42".
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'

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CLIENT PROJECT NO.

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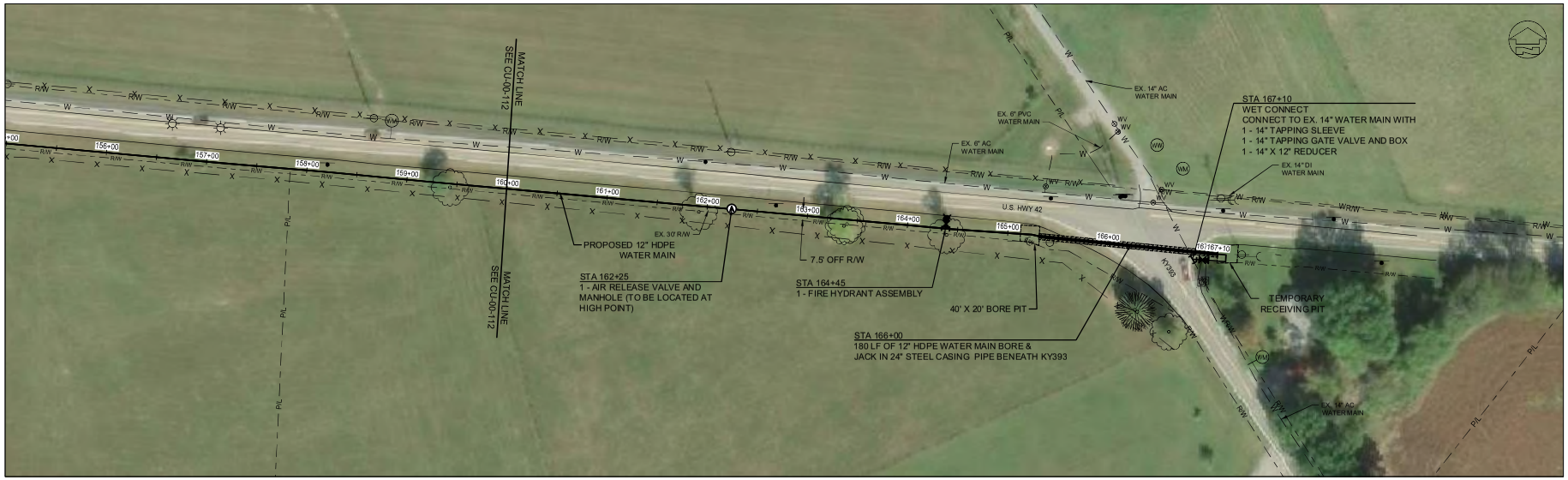
12" WATER MAIN PLAN & PROFILE
STA. 151+00 TO STA. 160+00
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

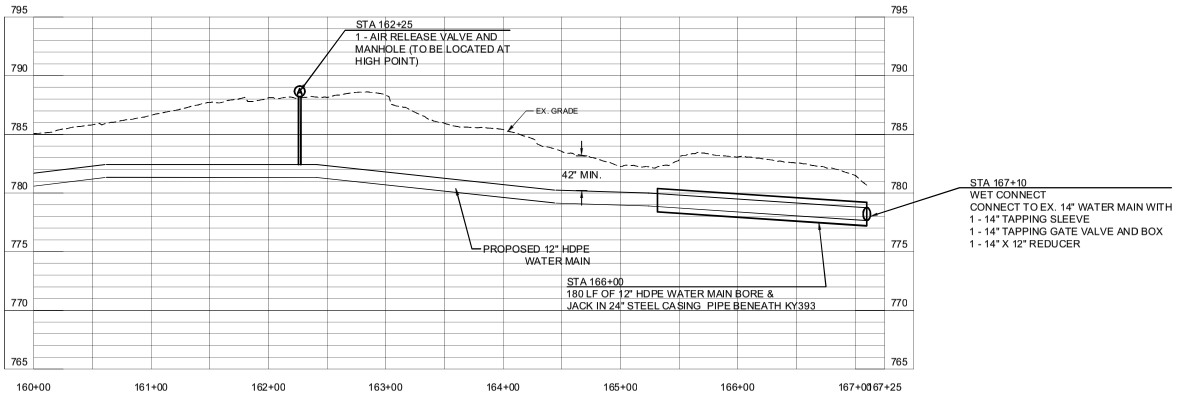
REVISIONS
NO. | DESCRIPTION | DATE | BY
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SCALE CHECK

DATE: MAY, 2026
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SHEET NO.: CU-00-112

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STA. 160+00 TO STA. 167+10 (E.O.L.)



PROFILE - STA. 160+00 TO STA. 167+25 LINE "Water Main Ext."

GENERAL NOTES:

1. EXISTING GRADE IN PROFILE IS BASED ON 2023 LIDAR DATE. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
2. ALL PROPOSED WATER MAIN PIPING SHALL BE DR11 HDPE PIPING WITH HDPE FITTINGS. (SEE SPECIFICATION 33113)
3. CONTRACTOR SHALL ADHERE TO ALL KYTC AND OLDHAM COUNTY ENCROACHMENT PERMIT REQUIREMENTS FOR INSTALLATION OF THE WATER MAIN AND TRAFFIC CONTROL MEASURES. ALL PARALLEL LINES SHALL BE PLACED ON BACK SIDE OF DITCH WITH A MINIMUM DEPTH OF COVER OF 42". ALL PERPENDICULAR ROAD CROSSINGS SHALL BE ACCOMPLISHED VIA BORE AND JACK WITH STEEL CASING PIPE WITH MINIMUM DEPTH OF COVER.
4. CONTRACTOR SHALL FIELD VERIFY EXISTING WATER MAIN SIZES, MATERIALS, AND LOCATIONS AT PROPOSED CROSSINGS AND TIE-INS PRIOR TO WATER MAIN INSTALLATION.
5. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

HORIZONTAL SCALE: 1" = 50'-0"
0 25' 50' 100' 150'
VERTICAL SCALE: 1"=5'

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CLIENT PROJECT NO.

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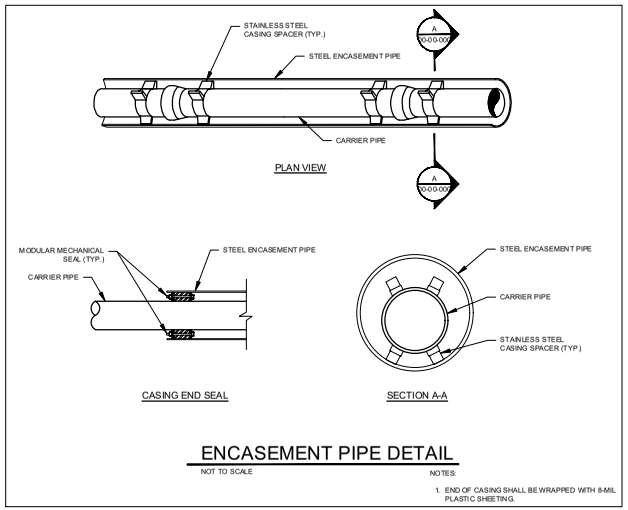
12" WATER MAIN PLAN & PROFILE
STA. 160+00 TO STA. 167+10 (E.O.L.)
US42 WATER MAIN EXTENSION - KY1694 TO KY393
OLDHAM COUNTY WATER DISTRICT

DESIGNED: NWG
DRAWN: CEK
REVIEWED: AAB
APPROVED: NWG

REVISIONS:
NO. | DESCRIPTION | DATE | BY

DATE: MAY, 2026
SCALE: 1" = 50'
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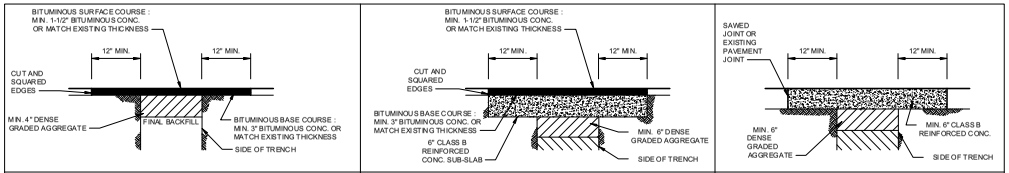


ENCASEMENT PIPE DETAIL

NOT TO SCALE

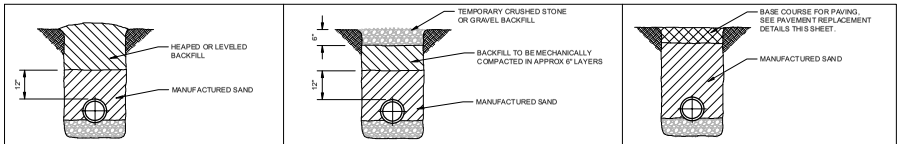
NOTES:

1. END OF CASING SHALL BE WRAPPED WITH 8-MIL PLASTIC SHEETING.



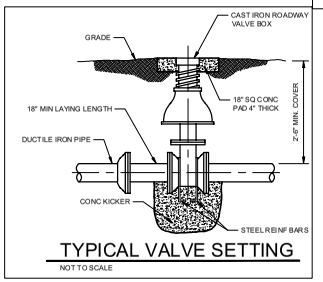
PAVEMENT REPLACEMENT

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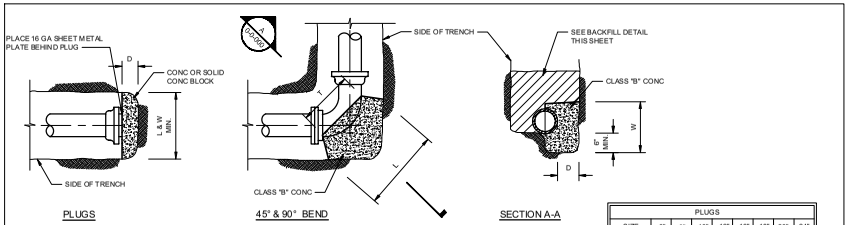
BACKFILLING

NOT TO SCALE



TYPICAL VALVE SETTING

NOT TO SCALE



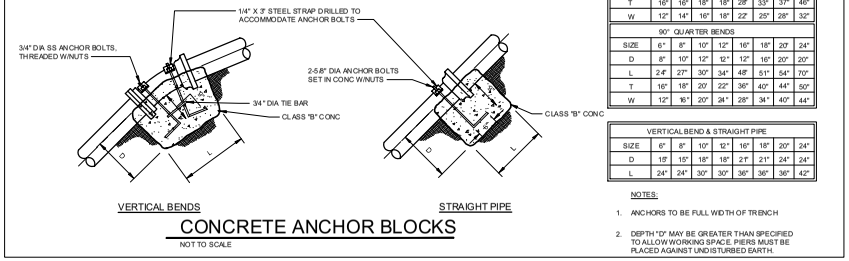
CONCRETE THRUST BLOCKS

NOT TO SCALE

PLUGS								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	6"	6"	6"	6"	10"	12"	14"	18"
L & W	2'0"	2'2"	2'4"	2'4"	3'2"	3'6"	4'0"	4'8"

45° EIGHTH BENDS								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	6"	6"	6"	6"	6"	8"	8"	10"
L	1'8"	2'0"	2'2"	2'4"	3'4"	4'0"	4'5"	5'2"
T	1'6"	1'6"	1'8"	1'8"	2'8"	3'3"	3'7"	4'6"
W	1'2"	1'4"	1'6"	1'8"	2'2"	2'5"	2'8"	3'2"

90° QUARTER BENDS								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	8"	10"	12"	12"	12"	16"	20"	20"
L	2'-6"	2'7"	3'0"	3'4"	4'8"	5'1"	5'4"	7'0"
T	1'6"	1'8"	2'0"	2'2"	3'6"	4'0"	4'4"	5'0"
W	1'2"	1'5"	2'0"	2'4"	2'8"	3'4"	4'0"	4'4"



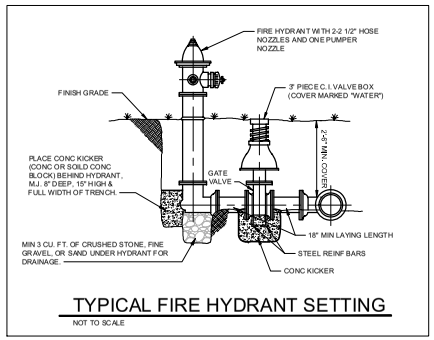
VERTICAL BEND & STRAIGHT PIPE								
SIZE	6"	8"	10"	12"	16"	18"	20"	24"
D	1'8"	1'5"	1'8"	1'8"	2'1"	2'1"	2'4"	2'4"
L	2'4"	2'4"	3'0"	3'0"	3'6"	3'6"	3'6"	4'2"

NOTES:

1. ANCHORS TO BE FULL WIDTH OF TRENCH
2. DEPTH "D" MAY BE GREATER THAN SPECIFIED TO ALLOW WORKING SPACE. PIERS MUST BE PLACED AGAINST UNDISTURBED EARTH.

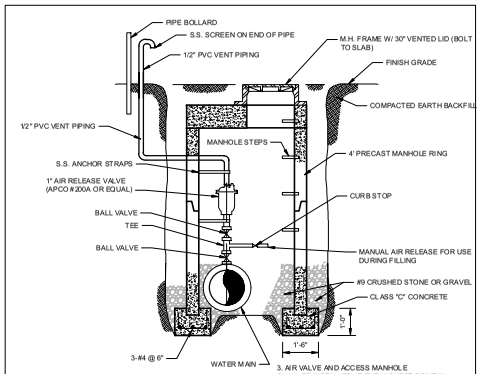
CONCRETE ANCHOR BLOCKS

NOT TO SCALE



TYPICAL FIRE HYDRANT SETTING

NOT TO SCALE

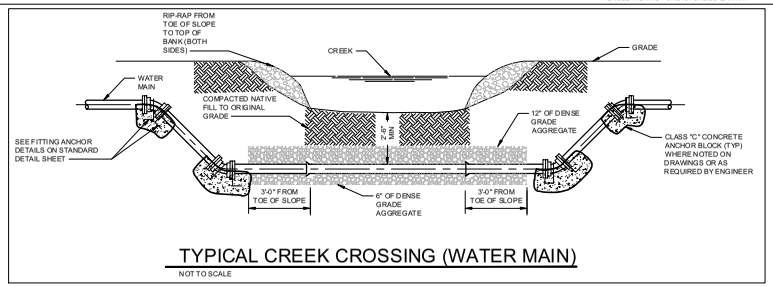


NOTES:

1. WHERE THE MAIN LINE IS LOCATED IN A STREET OR ROAD THE AIR RELEASE VALVE AND BOX SHALL BE LOCATED OFF THE ROAD WHERE NOT SUBJECT TO VEHICULAR TRAFFIC AND CONNECTED TO THE MAIN BY 1" PIPING.
2. ALL PIPING AND VALVES SHALL BE RATED FOR THE SAME WORKING PRESSURE AS THE AIR RELEASE VALVE.
3. AIR VALVE AND ACCESS MANHOLE SHALL BE INSTALLED AT THE HIGHEST POINT IN THE WATER MAIN PROFILE AS SHOWN ON THE CONSTRUCTION DRAWINGS. ADJUST MANHOLE HEIGHT AND/OR WATER MAIN DEPTH TO ALLOW FINAL ELEVATION OF MANHOLE FRAME ACCESS TO BE SLIGHTLY HIGHER (2± INCHES) THAN ORIGINAL GRADE.
4. IN AREAS REQUIRING AIR RELEASE VALVES AND MANHOLES, CONTRACTOR SHALL INSTALL WATER MAIN DEEPER TO PROVIDE VERTICAL CLEARANCE IN MANHOLE FOR BOTH THE AIR RELEASE VALVE HEIGHT AND MAINTENANCE. ASSUME MINIMUM OF 60".

AIR RELEASE VALVE & ACCESS MANHOLE

NOT TO SCALE



TYPICAL CREEK CROSSING (WATER MAIN)

NOT TO SCALE

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WATER MAIN DETAILS

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED	NWG
DRAWN	CEK
QUANTITIES	NWG
APPROVED	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

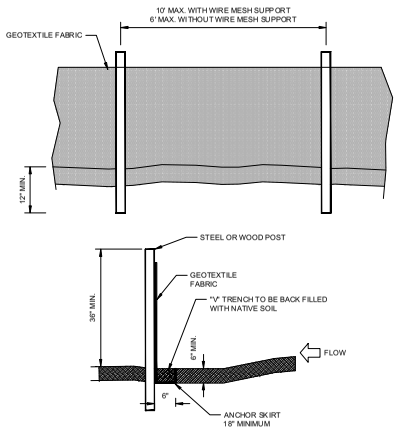
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CU-00-501

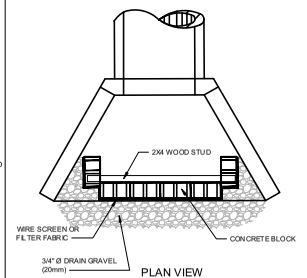


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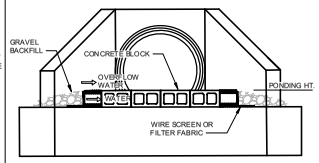
1. GEOTEXTILE FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER. WHEN JOINTS CANNOT BE AVOIDED, GEOTEXTILE FABRIC SHALL BE SPLICED TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE AT LEAST 5 FEET IN LENGTH.
3. STEEL POSTS SHALL HAVE PROJECTIONS FOR FASTENING WIRE AND FABRIC.
4. WOOD POSTS SHALL BE 2 INCHES BY 2 INCHES OR EQUIVALENT. STEEL POSTS SHALL BE 1.33 LBS PER LINEAR FOOT.
5. IF REQUIRED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH IN LENGTH. WIRE TIES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
7. TURN SILT FENCE UP SLOPE AT ENDS.

SILT FENCE

NOT TO SCALE



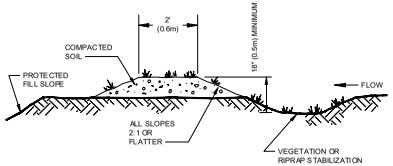
PLAN VIEW



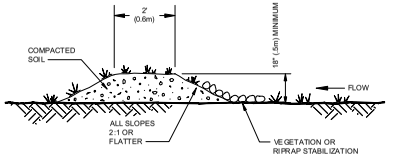
FRONT ELEVATION

CULVERT INLET SEDIMENT BARRIER

NOT TO SCALE



TYPICAL FILL DIVERSION



TYPICAL TEMPORARY DIVERSION DIKE

NOTES:

1. THE CHANNEL BEHIND THE DIKE SHALL HAVE POSITIVE GRADE TO A STABILIZED OUTLET.
2. THE DIKE SHALL BE ADEQUATELY COMPACTED TO PREVENT FAILURE.
3. THE DIKE SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT SEEDING OR RIPRAP.

DIVERSION CHANNEL

NOT TO SCALE

EROSION CONTROL NOTES

1. A KPDES STORMWATER PERMIT IS REQUIRED FOR THIS PROJECT. COVERAGE STARTS WHEN THE KY DIVISION OF WATER ACKNOWLEDGES RECEIPT OF A NOTICE OF INTENT FOR COVERAGE.
2. THE KPDES PERMIT REQUIRES THAT THE PERMITTEE SHALL MINIMIZE DISTURBANCE AND THE PERIOD OF TIME THAT THE DISTURBED AREA IS WITHOUT STABILIZATION PRACTICES.
3. FINAL STABILIZATION SHALL BEGIN WITHIN 14 DAYS ON AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR HAVE BEEN SUSPENDED FOR MORE THAN 180 DAYS. WHEN SNOW COVER CAUSES DELAYS, STABILIZATION SHALL BEGIN AS SOON AS POSSIBLE. STABILIZATION PRACTICES INCLUDE SEEDING, MULCHING, PLACING SOD, PLANTING TREES OR SHRUBS, AND USING GEOTEXTILE FABRICS AND OTHER APPROPRIATE MEASURES. SEEDING RATES, DATES AND MATERIALS MAY BE OBTAINED FROM THE LOCAL NATURAL RESOURCES CONSERVATION SERVICE FIELD OFFICE.
4. FOR ALL CRITICAL AREAS (WITHIN 25' OF A STREAM), SOIL STABILIZATION TECHNIQUES SHALL BE IMPLEMENTED WITHIN 24 HOURS OR AS SOON AS PRACTICABLE AFTER COMPLETION OF GRADING OR DISTURBANCE. TEMPORARY STABILIZATION PRACTICES SHALL BE INITIATED WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION ACTIVITIES.
5. A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE DEVELOPED AND IMPLEMENTED AS OUTLINED IN THE KPDES STORMWATER PERMIT KYR 10.
6. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE PROPERLY DESIGNED.
7. SEDIMENT BASINS (DEBRIS BASINS, DESILTING BASINS, OR SEDIMENT TRAPS) SHALL BE INSTALLED DURING INITIAL GRADING AT LOCATIONS THAT WILL PROVIDE THE BEST PROTECTION FROM OFF-SITE DAMAGES.
8. ALL SLOPES EXCEEDING 3:1 SHALL HAVE TURF REPLACEMENT MAT INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
9. A MULTI-PURPOSE BASIN USED FOR A SEDIMENT TRAP THAT IS THEN CONVERTED TO A DETENTION/RETENTION BASIN SHALL BE DREDGED PERIODICALLY DURING CONSTRUCTION ACTIVITIES AND AFTER STABILIZATION IN ORDER TO PROVIDE ADEQUATE STORAGE.
10. INLET PROTECTION IS REQUIRED TO MINIMIZE DISCHARGE OF SEDIMENT LADEN WATER.
11. SITE PERIMETER CONTROLS ARE REQUIRED AND SHALL BE INSTALLED TO PREVENT THE DEPOSIT OF SOIL AND DEBRIS FROM GRADED SURFACES ONTO PUBLIC STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.
12. EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIRED. CONTRACTOR SHALL PROVIDE ADDITIONAL CONTROLS AND REVISE THE CONTROLS AS NEEDED.

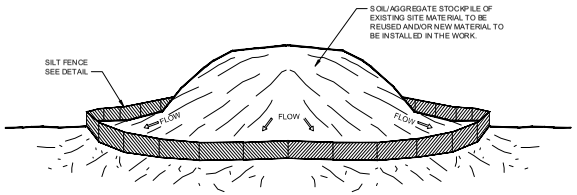
INSPECTIONS AND MAINTENANCE

1. ALL EROSION CONTROL MEASURES, DISCHARGE LOCATIONS, VEHICLE EXITS, DISTURBED AREAS OF THE SITE, AND MATERIALS STORAGE AREAS SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. EACH INSPECTION MUST BE DOCUMENTED IN ACCORDANCE WITH THE KPDES GENERAL PERMIT FOR STORMWATER POINT SOURCE DISCHARGES FROM CONSTRUCTION ACTIVITIES (KYR10).
2. SEDIMENT ACCUMULATED AT THE SILT FENCES, INLET PROTECTION AREAS, AND OTHER SILT CHECK DEVICES SHOULD BE REMOVED NO LATER THAN WHEN IT REACHES 1/3 HEIGHT OF THE FENCE OR 9 INCHES MAXIMUM.
3. SEDIMENT MUST BE REMOVED FROM ANY SEDIMENT BASINS WHEN THE NO MORE THAN 1/3 OF THE VOLUME HAS BEEN FILLED WITH COLLECTED SEDIMENT.
4. ALL REQUIRED REPAIRS ARE TO BE MADE IMMEDIATELY.
5. REMOVED SEDIMENT MUST BE SPREAD AND VEGETATED OR OTHERWISE STABILIZED IN A MANNER THAT DOES NOT RESULT IN MUDDY RUNOFF TO NEARBY DITCHES AND WATERBODIES.
6. INSPECT THE CONSTRUCTION ENTRANCE DAILY TO ENSURE NO TRACKING OF DIRT ONTO LOCAL ROADWAYS. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROAD MUST BE REMOVED IMMEDIATELY. SEE NOTE 3 FOR HANDLING OF REMOVED SEDIMENT.
7. MAINTAIN THE ENTRANCE AS NECESSARY TO PREVENT TRACKING OF DIRT.

UNTIL THE OWNER PERFORMS A FINAL INSPECTION AND THE LAND DISTURBING PERMIT IS CLOSED, THE PERSON RESPONSIBLE SHALL TAKE SUCH MEASURES AS ARE NECESSARY TO PREVENT EROSION OF GRADED STREETS, INTO DRAINAGE CHANNELS OR SEWERS, OR ONTO ADJOINING LAND.

SEQUENCE OF EROSION CONTROL PLAN ACTIVITIES (FROM KY DOW GUIDANCE)

1. IDENTIFY AND FLAG OFF AREAS NOT TO BE DISTURBED AND/OR COMPACTED.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.
3. INSTALL UPGRADIENT DIVERSION SWALES AND BERMS.
4. INSTALL SEDIMENT BARRIERS (SILT FENCES)
5. INSTALL SEDIMENT BASIN.
6. CONSTRUCT OTHER SWALES.
7. CONSTRUCT STORM CONVEYANCE SYSTEM (INLETS AND STORM SEWERS)
8. BEGIN CLEARING AND GRADING FOR THE ROADS, BUILDINGS, AND TANKS.
9. STABILIZE BARE AREAS AFTER FINAL GRADE IS REACHED.
10. CONSTRUCT ROADS, BUILDINGS, TANKS AND PARKING LOTS.
11. INSTALL LANDSCAPING.
12. DREDGE SEDIMENT BASIN AND INSTALL TEMPORARY EROSION CONTROL BLANKET ON ALL SLOPES.
13. REMOVE ALL CONTROLS ONCE THE SITE HAS BEEN FULLY STABILIZED.
14. FINAL INSPECTION FOR LAND DISTURBANCE PERMIT.
15. TEMPORARY DIVERSION DITCHES MAY BE REQUIRED DURING CONSTRUCTION TO MITIGATE EROSION OF THE DISTURBED CONSTRUCTION AREA, BY DIRECTING OFF-SITE DRAINAGE AROUND THE DISTURBANCE AREAS.

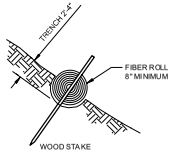


NOTES:

1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

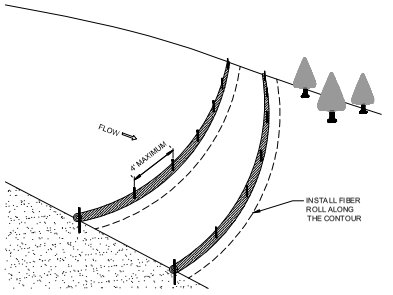
MATERIALS STOCKPILE

NOT TO SCALE



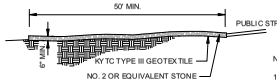
NOTES:

1. FIBER ROLLS AND OTHER COMMERCIAL PRODUCTS MADE FROM COCONUT FIBER, PLASTIC, WOOD SHAVINGS, COMPOST, OR OTHER MATERIAL CAN BE USED AS SEDIMENT BARRIERS ON SLOPES FLATTER THAN 10:1.
2. FOLLOW MANUFACTURERS' INSTALLATION INSTRUCTIONS AND ENSURE THAT SEDIMENT FILTER SPACING ON SLOPES IS CORRECT.

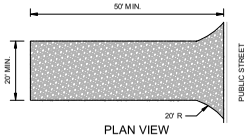


FIBER ROLLS

NOT TO SCALE



CROSS SECTION



PLAN VIEW

NOTES:

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. GEOTEXTILE (KYTC TYPE III) SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

REGULATORY REVIEW SET

GRW PROJECT NO. 5180

CLIENT PROJECT NO.

ALL RIGHTS RESERVED. THE PROPERTY OF GRW ENGINEERS, INC. AND SHALL NOT BE REPRODUCED IN WHOLE OR IN PART OR USED FOR ANY PURPOSE OTHER THAN THE SPECIFIC PROJECT WITHOUT WRITTEN PERMISSION.

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EROSION CONTROL DETAILS AND NOTES

US42 WATER MAIN EXTENSION - KY1694 TO KY393

OLDHAM COUNTY WATER DISTRICT

DESIGNED	DRAWN	REVIEWED	APPROVED
NWG	CEK	AAB	NWG

REVISIONS

NO.	DESCRIPTION	DATE	BY

SCALE CHECK: THIS MARK SHOULD MEASURE EXACTLY 1" WHEN PLOTTED

DATE: MAY, 2026

SCALE: NTS

SHEET NO.

CE-00-501

PLOTTED BY: dkratz

PRINTED: 5/7/2026 @ 10:20AM

FILE NAME: G:\5180-OCWD US42W Ph2\Working Drawings\AutoCAD\5180-CE-00-501.dwg

APPENDIX B

APPROVED OLDHAM COUNTY ENCROACHMENT PERMIT

Utility Encroachment Permit

26-1258-EUTL

Date Issued: 6/22/2026

Application Type: Encroachment Utility

Details

Address:	13-00-00-5&7A, 3351 Barrickman Ln, 3307 Skylight Mnr, 2613 Liberty Ln
Subdivision:	N/A
Lot Number:	5, 7A, 9, 7U, 1P
Parcel PIN:	13-00-00-5&7A, 12-00-00-9, 12-00-00-7U, 20-00-00-1P
Land Use:	Single Family
Zoning:	AG-1, R-2
Fees:	$0.00
Expiration Date:	9/22/2026

Applicant

Name: Oldham County Water District
Email: ocwd@oldhamcountywaterky.gov
Phone: (502) 222-1690

NEW OR REPLACEMENT SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT STANDARDS (INCLUDING BUT NOT LIMITED TO LOCAL AND STATE STANDARDS).

*****BE ADVISED: CALL KENTUCKY 811 UTILITY LOCATORS PRIOR TO EARTHWORK*****
*****CONTACT OLDHAM COUNTY DISPATCH (502-222-0111) PRIOR TO CLOSING ANY ROAD TO THROUGH TRAFFIC AND IMMEDIATELY UPON REOPENING*****

UTILIZE THE UNIFORM MANUAL FOR TRAFFIC CONTROL FOR ALL WORK CONDUCTED ON ALL OLDHAM COUNTY ROADS.

THE PERMIT HOLDER AGREES TO BE TOTALLY RESPONSIBLE FOR THE UTILITY INSTALLATION AND AGREES TO MAKE ANY ADJUSTMENTS AT THE HOLDER'S COST, REQUIRED BY OLDHAM COUNTY FOR CURRENT OR FUTURE CONSTRUCTION OR MAINTENANCE OF THE ROAD.

SEE "CONDITIONS OF APPROVAL" ON THE UTILITY ENCROACHMENT APPLICATION FOR ALL MANDATORY REQUIREMEN

Call 502-222-3967 or email permitsinspections@oldhamcountyky.gov for all inspection requests

Road Encroachment Permit Application for Excavations and Utility Construction

Oldham County Engineer's Office

NOTE: Any person desiring to conduct excavations or utility construction within the county's right-of-way shall obtain a permit from the Oldham County Engineer's Office using this permit application. The county right-of-way is an area that encompasses the road and portions of land on both sides of the road, which may include curbs, drainage ditches, sidewalks, street signs, and utilities. The width of the county right-of-way varies based on the type and age of the road and can be found by checking your subdivision plat, survey plat, or consulting the Oldham County Engineer's Office.

For Staff Use Only

Date Received: 06/19/2026 Permit Number: 26-1258-EUTL

$100 Fee Paid: Yes (No) Permit Approved: (Yes) No

Cash or Check #: Exempt: Fee Waived Date Issued: 06/22/2026

Remarks: Approved for work within the Oldham County (OC) right-of-way. Please coordinate with all the property owners outside the OC right-of-way and dedicated easements.

This permit is issued to: OCWD Attn: Russ Rose
to excavate or conduct utility work within the right-of-way in Oldham County, Kentucky.

APPLICANT INFORMATION					
Name:	Russ Rose				
Company:	Oldham County Water District				
Mailing Address:	2160 Spencer Court				
City:	LaGrange	State:	KY	Zip Code:	40031
Phone:	502-222-1690	Fax:			
Email:	rrose@oldhamcountywaterky.gov				

TYPE / LOCATION OF ENCROACHMENT			
Utility Type (circle one):	Underground Electrical (Water) Gas Sanitary Sewer Overhead Electrical Telephone Cable Other:		
Location Description:	1. Liberty Lane crossing approximately 25' south of intersection of US42 and Liberty Lane. 2. Barrickmen Lane crossing approximately 25' south of intersection of US42 and Barrickmen Lane.		
Scope of Work:	1. Approx. 50 LF of 12" HDPE WM in 24" Steel Casing Pipe bored and jacked under Liberty LN. 2. Approx. 50 LF of 12" HDPE WM in 24" Steel Casing Pipe bored and jacked under Barrickmen LN.		
Encroachment (Property) Address:		City:	
Property Owner:			
Property Owner Phone Number:			
Property Owner Email:		Lot #:	
Estimated Start Date:			
Estimated Completion Date:			

APPLICANT CERTIFICATION

Applicant Certification: "I understand that I am responsible for satisfying all of the conditions of approval outlined on pages 2 and 3 of this permit application. Lastly, I understand that this permit shall expire within ninety (90) days, or as otherwise stated in the permit, unless extended by the County prior to expiration."

Russell D. Rose
Printed Name of Applicant

Russell D. Rose
Signature of Applicant

6/18/26
Date

ENCROACHMENT REQUIREMENTS
CONDITIONS OF APPROVAL

1. The permit holder agrees to install and maintain all Erosion Prevention and Sediment Control (EPSC) Best Management Practices (BMPs) (i.e., stabilized construction entrance, silt fence, rock check dams, and sediment traps) in operational condition throughout the duration of the project until final soil stabilization is complete.

2. The permit holder agrees to comply with the engineering and design requirements adopted by Oldham County Fiscal Court (Ordinance # 19-620-24 and associated resolutions) for excavations and utility construction including, but not limited to, the following:

   a. New or relocated utilities installed longitudinally shall be located at the back of the ditch line and toe of slope as near to the edge of the right-of-way as practical or in designated utility strips.

   b. Utilities are permitted to cross county roads. Where practical, they shall cross perpendicular to the road alignment and, preferably, under the road.

   c. New facilities shall not be installed longitudinally under proposed pavement and shoulder areas.

   d. Utility poles or towers installed longitudinally shall be located outside the clear zone.

   e. If crossroads or entrances adjacent to the mainline road are paved with concrete or bituminous surface, they shall be bored.

   f. Construction methods or materials that allow voids in the roadway foundation shall not be permitted. No bell and spigot pipe nor other pipe that does not have a uniform outside diameter shall be permitted in bored or augured installations unless they are encased.

   g. Overhead Requirements: The vertical clearance of an overhead utility crossing a county road shall be a minimum of eighteen (18) feet but in no case will the clearance be less than the requirements of the National Electrical Safety Code.

   h. Depth requirements: The minimum depth for underground utilities is forty two (42) inches under roadways and ditch lines and thirty (30) inches in all other areas within the county right-of-way, or as specified by the utility owner, whichever is greater.

   i. Open Trenching: Pavements and shoulders shall be not excavated by the open trench method unless approved by the County Engineer.

j. Pipe crossings two (2) inches or less in diameter do not require encasement provided they are buried at least forty two (42) inches below the bottom of the ditches, shoulders, and roadway surfaces.

k. Pipe crossings greater than two (2) inches in diameter must be encased.

3. The permit holder agrees to accept responsibility for any material deposited upon the county road or in the county right-of-way due to construction and shall remove the material (i.e., dirt, mud, and debris) daily.

4. The permit holder agrees to promptly repair the county right-of-way including, but not limited to, the pavement, pavement markings, ditches, shoulders, sidewalks, and storm sewers, resulting from the permit holder's actions or those actions of his agents and/or operators.

5. The permit holder agrees to notify the Oldham County Engineering Department and Oldham County Road Department three (3) days prior to commencing activities approved within the permit.

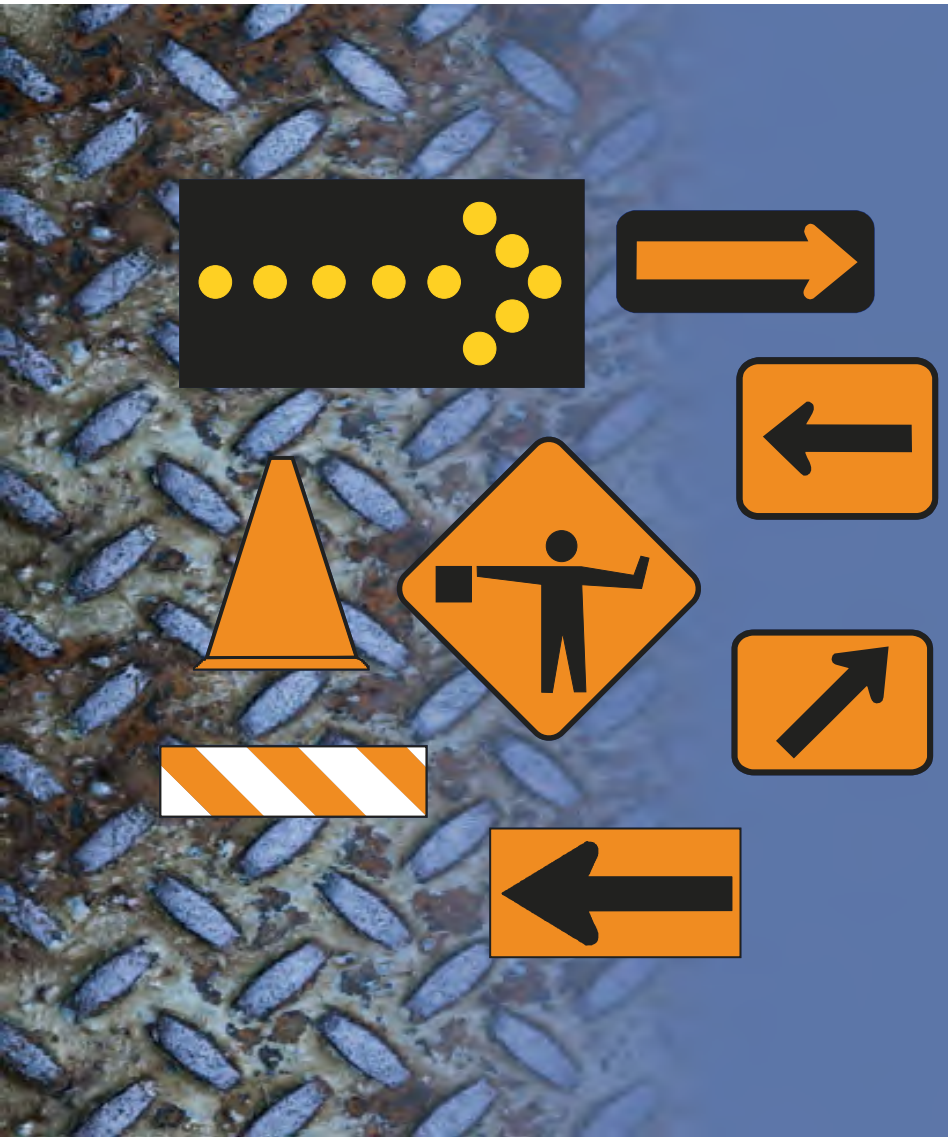
6. The permit holder agrees to notify Oldham County Dispatch twenty four (24) hours prior to the permitted closing of a lane or road within the county and notify Oldham County Dispatch immediately upon re-opening a lane or road within the county.

7. At any time during the construction on said encroachment property, failure to comply with the terms of this permit may result in a notice of violation, citation, civil penalty, and stop work order, which may include any construction on said property.

Russell D. Rose
Printed Name of Applicant

Russell D Rose
Signature of Applicant

6/18/26
Date



UNIVERSITY OF KENTUCKY
Kentucky Transportation Center

Guidelines for Traffic Control In Work Zones

Guidelines for Traffic Control in Work Zones

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The contents of the guide do not reflect the official views or policies of the Kentucky Transportation Center or the Federal Highway Administration. This document does not constitute a standard, specification, or regulation.

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Introduction

The primary function of temporary traffic control is to provide for the safe and efficient movement of motorists, bicyclists, and pedestrians through or around temporary traffic control (TTC) zones while reasonably protecting workers and equipment. A concurrent objective of theTTC is the efficient construction and maintenance of the highway.

Part 6 of the *Manual on Uniform Traffic Control Devices* (MUTCD) is the national standard for all traffic control devices used during construction, maintenance, and utility activities plus incident management. This handbook summarizes some guidelines listed inthe MUTCD. It is directed to state and local government road and street departments, utilities, companies performing constructionby permit, and any other entity providing maintenance or constructionona public roadway. It contains basic principles, a descriptionof the standard traffic control devices used in work areas, guidelines for the applicationof the devices, and typical applicationdiagrams. Also, informationconcerning proper flagging is presented. The guide gives the basic principles and provides examples for the design, application, installation, and maintenance of the various types of traffic control devices used in temporary traffic control or for incident management.

The applicationdiagrams shownrepresent minimum requirements for typical situations. They are not intended as substitutes for engineering judgment and should be altered to fit the conditions of a particular site--given that all traffic control devices used must be incompliance with Part 6 of the MUTCD. The MUTCD has beenadopted by the Kentucky General Assembly (KRS 189.337 and 603KAR5:050) as the standard for signs and markings inKentucky.

Major Traffic Control Considerations

Every work zone situation is different so several items must be considered in determining the TTC needed. Following is a list of some questions that illustrate the major traffic control considerations.

1. What will be the time duration of the work?
   - Long-term stationary - Work that occupies a location more than three days.
   - Intermediate-term stationary - Work that occupies a location for more than one daylight period and up to 3 days, or nighttime work lasting more than 1 hour.
   - Short-term stationary - Daytime work that occupies a location for more than 1 hour within a single daylight period.
   - Short duration - Work that occupies a location up to one hour.
   - Mobile - Work that moves intermittently or continuously.
2. Where is the work zone located (on the roadway, on the shoulder, or off the roadway)?
3. What type of road is involved?
4. What is the speed of the traffic?
5. What is the traffic volume on the roadway? Should the work be rescheduled to avoid heavy volume conditions?
6. Will the nature of traffic change while work is underway?
7. Do the local law enforcement agencies need to be notified?
8. What kind of signing will be required?
9. Are cones, drums, barricades, or a narrow board needed for traffic channelization?
10. Will a flagger be required?

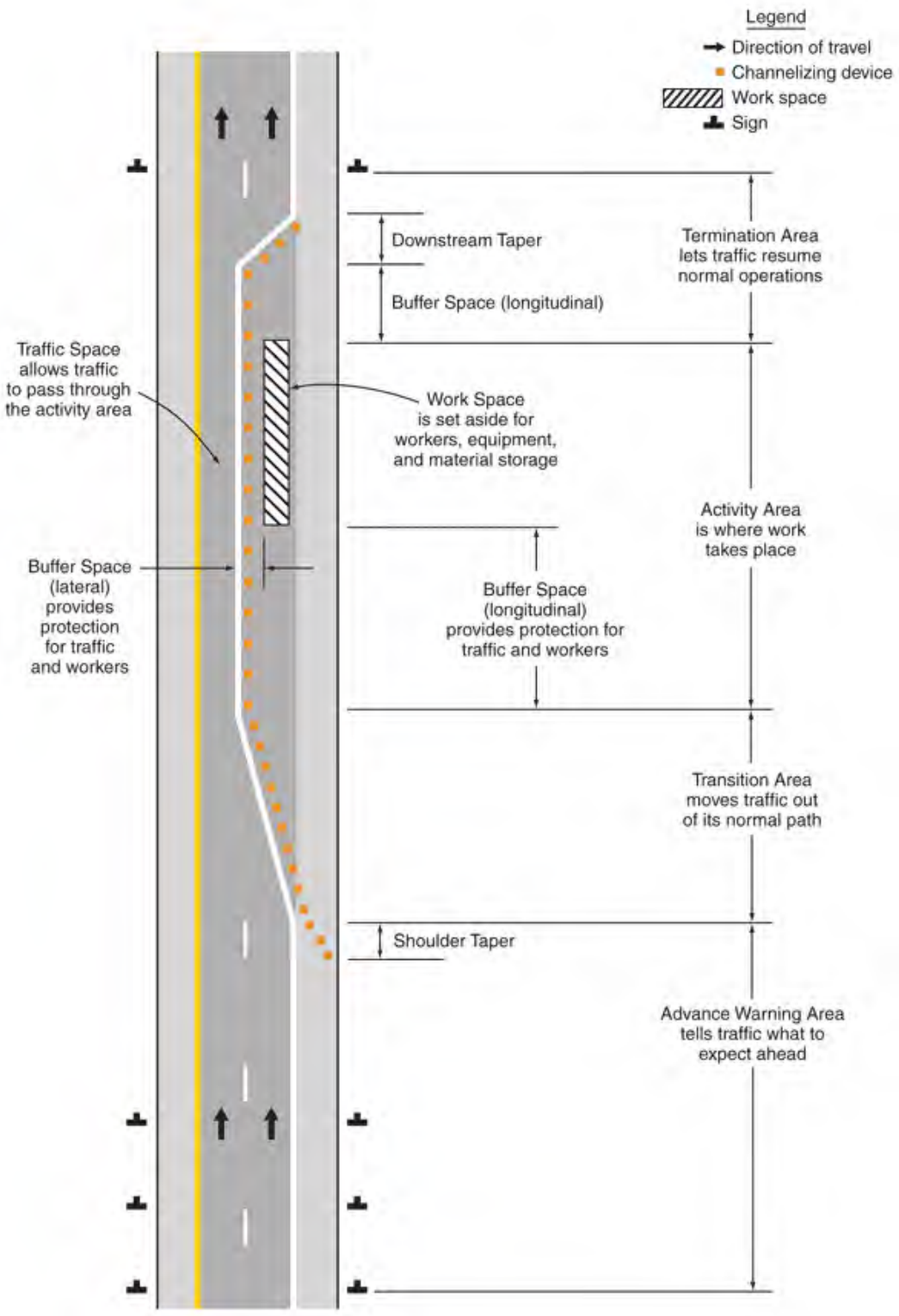
Fundamental Principles

Road user and worker safety and accessibility in TTC zones should be an integral element in every project from planning through design and construction. Consideration must be given to motorists, bicyclists, pedestrians and workers. If the TTC zone includes a grade crossing, there should be early coordination with the railroad company.

Following are the seven fundamental principles of TTC as given in the MUTCD.

1. General plans or guidelines should be developed to provide safety for motorists, bicyclists, pedestrians, workers, enforcement officials and equipment.
2. Road user movement should be inhibited as little as practical.
3. Motorists, bicyclists and pedestrians should be guided in a clear and positive manner while approaching and traversing TTC zones and incident sites.
4. Routine day and night inspections of TTC elements should be performed.
5. Attention should be given to the maintenance of roadside safety during the life of the TTC zone.
6. Each person whose actions affect TTC zone safety should receive training appropriate to the job decisions each individual is required to make.
7. Good public relations should be maintained.

Component Parts of a Temporary Traffic Control Zone



Tapers

Merging Taper

A merging taper requires the longest distance because drivers are required to merge into common road space. A merging taper should be long enough to enable merging drivers to have adequate advance warning and sufficient length to adjust their speeds and merge into an adjacent lane before the downstream end of the transition.

Following is a table of merging taper lengths (L) and the spacing of channelizing devices for various speeds and widths of closing.

Taper Length*

SPEED LIMIT (MPH)	LANE WIDTH (FEET) 10	11	12	SPACING BETWEEN DEVICES (FEET)
25	105	115	125	25
35	205	225	245	35
45	450	495	540	45
55	550	605	660	55
65	650	715	780	65
70	700	770	840	70

*Following are the formulas used to calculate taper length:

Posted Speed	Formula
40 mph or under	$L = WS^2/60$
45 mph or over	$L = WS$

where: L = taper length; W = width of lane or offset, and S = posted speed, or off-peak 85th percentile speed

Shifting Taper

A shifting taper is used when a lateral shift is needed. A shifting taper should have a length of approximately 0.5 L.

Shoulder Taper

A shoulder taper may be beneficial on a high-speed roadway where shoulders are part of the activity area and are closed, or when improved shoulders might be mistaken as a driving lane. Shoulder tapers should have a length of approximately 0.33 L.

Downstream Taper

A downstream taper may be useful in termination areas to provide a visual clue to the driver that access is available into the original lane or path that was closed. A downstream taper should have a minimum length of 50 feet and a maximum length of 100 feet with devices placed at a spacing of approximately 20 feet.

One-Lane, Two-Way Taper

A one-lane, two-way taper is used in advance of an activity area that occupies part of a two-way roadway in such a way that a portion of the road is used alternately by traffic in each direction. A one-lane, two-way taper should have a minimum length of 50 feet and a maximum length of 100 feet, with channelizing devices at approximately 20-foot spacings.

Flagging

Flaggers

A flagger shall be a person who provides temporary traffic control. A flagger should possess the following abilities:

1. Receive and communicate instructions clearly, firmly, and courteously
2. Move quickly to avoid danger
3. Control signaling devices
4. Understand and apply safe traffic control practices
5. Recognize dangerous traffic situations and warn workers in sufficient time

High Visibility Clothing

For daytime and nighttime work, flaggers shall wear high-visibility safety apparel. The background material color shall be flourescent orange-red, flourescent yellow-green or a combination of the two. The retroreflective material shall be either orange, yellow, white, silver, yellow-green, or a flourescent version of these colors, and shall be visible at a minimum distance of 1,000 feet. The retroreflective clothing shall be designed to clearly identify the wearer as a person.

Hand-Signaling Devices

The sign paddle bearing the message STOP or SLOW provides road users with more positive guidance than flags and should be the primary hand-signaling device.

The STOP/SLOW paddle shall have an octagonal shape on a rigid handle. STOP/SLOW paddles shall be at least 18 inches wide with letters at least 6 inches high and should be fabricated from light semi-rigid material. The background of the STOP face shall be red with white letters and a white border. The background of the SLOW face shall be orange with black letters and a black border. When used at night, the STOP/SLOW paddle shall be retroreflectorized.

Flags, used only in emergency situations, shall be red or fluorescent orange/red in color, shall be a minimum of 24 inches square, and shall be securely fastened to a staff that is approximately 36 inches in length. The free edge of a flag should be weighted so the flag will hang vertically, even in heavy winds. When used at nighttime, flags shall be retroreflectorized red.

Flagger Stations

Flagger stations shall be located far enough in advance of the work space so that approaching road

users will have sufficient distance to stop at an intended stopping point..

Guidelines for determining visibility to the flagger station and also distance from flagger to work-space (buffer distance) are shown in the table on page 17. The distances shown may be increased for downgrades and other conditions that affect stopping distance.

Flagger stations should be preceded by proper advance warning signs. At night, flagger stations should be illuminated.

The flagger should stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users. A flagger should only stand in the lane being used by moving road users after road users have stopped. The flagger should be clearly visible to the first approaching road user at all times. The flagger also should be visible to other road users. The flagger should be stationed sufficiently in advance of the workers to warn them (for example, with audible warning devices such as horns, whistles, etc.) of approaching danger by out-of-control vehicles. The flagger should stand alone, away from other workers, work vehicles, or equipment.

At spot lane closures where adequate sight distance is available for the safe handling of traffic, the use of one flagger may be sufficient. At a spot construction, the flagger may have to take a position on the shoulder opposite the closed section in order to operate effectively.

Flagging Procedures

The following methods of signaling with paddles shall be used:

1. **To stop road users**, the flagger shall face road users and aim the STOP paddle face toward road users in a stationary position with the arm extended horizontally away from the body.

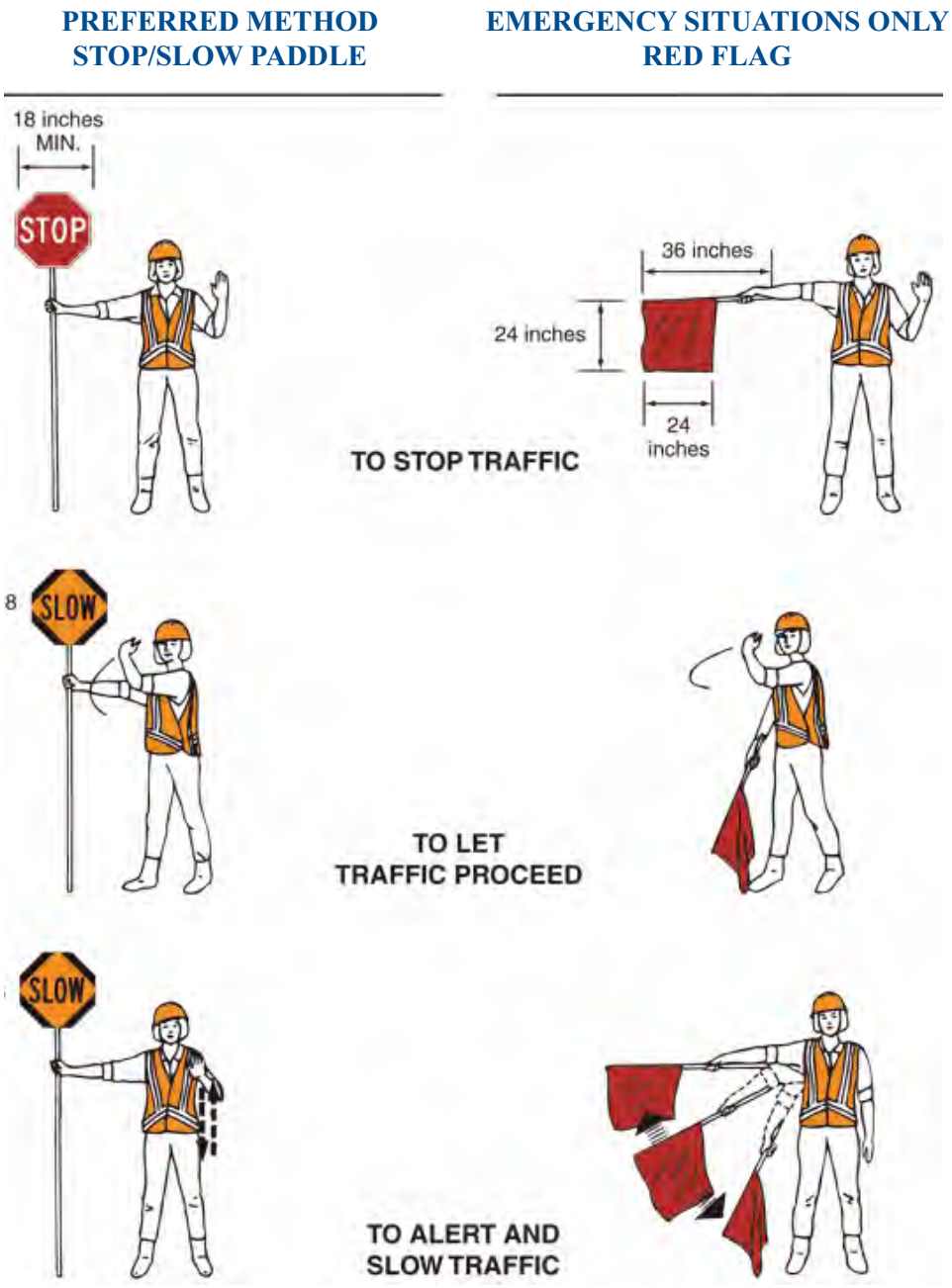
The free arm shall be held with the palm of the hand above shoulder level toward approaching traffic.

2. **To direct stopped road users to proceed**, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body. The flagger shall motion with the free hand for road users to proceed.
3. **To alert or slow traffic**, the flagger shall face road users with the SLOW paddle face aimed toward road users in a stationary position with the arm extended horizontally away from the body.

The following methods of signaling with a flag shall be used:

1. **To stop road users**, the flagger shall face road users and extend the flag staff horizontally across the road users' lane in a stationary position so that the full area of the flag is visibly hanging below the staff. The free arm shall be held with the palm of the hand above the shoulder level toward approaching traffic.
2. **To direct stopped road users to proceed**, the flagger shall face road users with the flag and arm lowered from the view of the road users, and shall motion with the free hand for road users to proceed. Flags shall not used to signal road users to proceed.
3. **To alert or slow traffic,** the flagger shall face road users and slowly wave the flag in a sweeping motion of the extended arm from shoulder level to straight down without raising the arm above a horizontal position. The flagger shall keep the free hand down.

The use of the flag and sign paddle are displayed in the following illustration



Communication

When two flaggers are used, they can communicate verbally or visually if they are close enough and visible to each other. One of the flaggers should be designated as the coordinator. Where the end of a one-lane section is not visible from the other end, the flaggers may maintain control using such methods as:

1. Radio or field telephone,
2. Flag transfer method where the driver of the last vehicle proceeding into the one-lane section is given a red flag (or other token) and instructed to deliver it to the flagger at the other end,
3. An official car that follows the last road user proceeding through the section, or
4. A pilot car to guide a queue of vehicles through the temporary traffic control zone or detour.

The flag transfer or official car method should only be used for a maximum length of about one mile. The pilot car shall have a sign mounted on the rear of the vehicle.

Arrow Boards

Flashing arrow boards are effective day and night, for moving traffic out of a lane to the left or right, and may be used for tapered lane closures and moving operations. The minimum size must be 48" x 24" with at least 12 panel lamps to provide a minimum legibility distance of 1/2 mile. Arrow boards should be equipped with a dimming device capable of 50 percent dimming for use at night along with circular hoods. If a arrow board consisting of a matrix bulb is used, the elements should be recess-mounted or equipped with a upper

hood of Not less thaN180 degrees. The oNly permissible use of aNarrow board oNa two-laNe, two-way street or road is the cautioNmode.

ANarrow board shall be a sigNwith a matrix of elements capable of either flashing or sequential displays. This sigNshall proVide additioNal warNiNg aNd directioNal iNformatioNto assist iNmergiNg aNd coNtrolliNg road users through or arouNd a temporary traffic control zone.

ANarrow board should be used iNcombiNatioN with appropriate sigNs, chaNNeliziNg deVices, or other temporary traffic control devices. An arrow board should be placed oNthe shoulder of the roadway or, if practical, further from the traVeled laNe. It should be delineated with retroreflective temporary traffic control deVices, or wheNwithiNthe clear zoNe, shielded with a barrier or crash cushioN WheNaNarrow board is Not beiNg used, it should be remoVed; if Not remoVed, it should be shielded; or if the preVious two optioNs are not feasible, it should be delineated with retroreflective temporary traffic control devices.

NOTE: Review and understand the full text of Section 6F.61 of the MUTCD prior to implementing a traffic plan using Arrow Boards.

Channelizing Devices

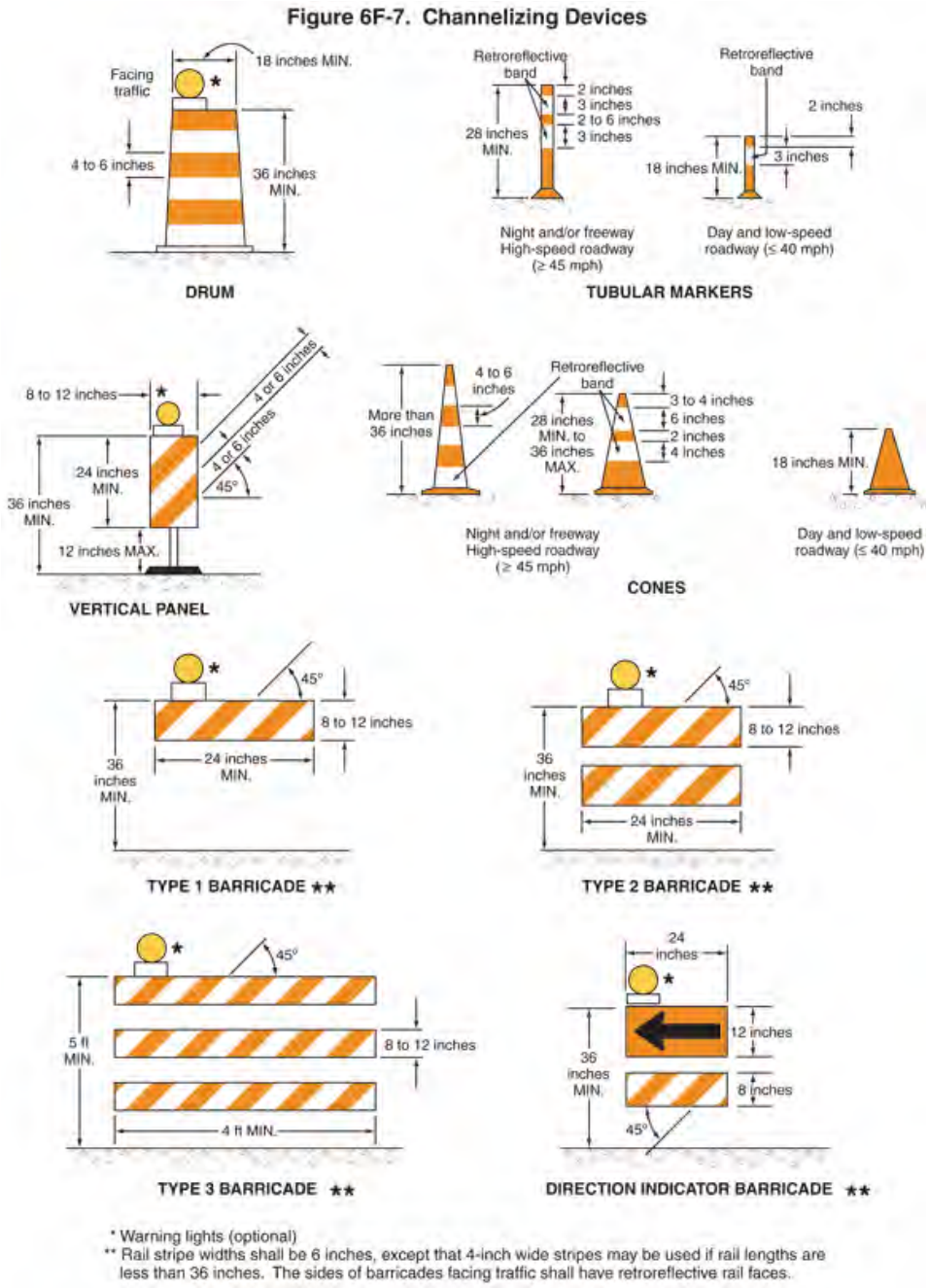
The fuNctioNof chaNNeliziNg deVices is to warNroad users of coNditioNs created by work actiVities iNor Near the roadway aNd to guide road users.

ChaNNeliziNg deVices shall be crashworthy. The spaciNg of chaNNeliziNg deVices should Not exceed a distaNce iNfeet equal to 1.0 times the speed limit wheN used for taper chaNNelizatioNaNd a distaNce iNfeet equal to 2.0 times the speed limit wheNused for taNgeNt chaNNelizatioN

Devices that are damaged or have lost a significant amount of their retroreflectivity and effectiveness shall be replaced.

Channelizing Devices

NOTE: Warning lights on Channelizing Devices are optional.



Warning Lights

Warning lights shall be mounted on signs or channelizing devices in a manner that, if hit by an errant vehicle, they will not be likely to penetrate the windshield. Flashing warning lights shall not be used for delineation, as a series of flashers fails to identify the desired vehicle path. Warning lights shall have a minimum mounting height of 30 inches to the bottom of the lens.

Type A Low-Intensity flashing warning lights are used to warn road users during nighttime hours that they are approaching or proceeding into a potentially hazardous area. Type A warning lights may be mounted on channelizing devices.

Type B High-Intensity flashing warning lights are used to warn road users during both daylight and nighttime hours that they are approaching a potentially hazardous area. Type B warning lights may be mounted on advance warning signs or on independent supports.

Type C Steady-Burn and Type D 360-degree Steady-Burn warning lights may be used during nighttime hours to delineate the edge of the traveled way. When used to delineate a curve, Type C warning lights should only be used on devices on the outside of the curve, and not on the inside of the curve.

Nighttime Operations

All traffic control devices shall be retroreflectorized when used at night. Workers shall wear retroreflectorized vests. Cones shall be equipped with a reflective collar when used at night. When barricades are used, it is desirable to add flashing lights when the barricades are used singly and steady burn lights when they are used in a series for channelization. If a flagger is used, the flagger stations should be adequately illuminated.

Signs

Types

1. **Regulatory signs** inform road users of traffic laws

or regulations and indicate the applicability of legal requirements that would not otherwise be apparent. Regulatory signs shall be authorized by the public agency or official having jurisdiction. They are generally rectangular with a black legend and border on a white background. Exceptions include the STOP, YIELD, DO NOT ENTER, WRONG WAY, and ONE WAY signs.

2. **Warning signs** in temporary traffic control zones notify road users of specific situations or conditions on or adjacent to a roadway that might not otherwise be apparent. Temporary traffic control warning signs shall be diamond-shaped with a black symbol or message and border on an orange or fluorescent orange background, except for the Highway-Rail Grade Crossing Advance Warning sign and except for signs that are permitted in Part 2 or 7 of the MUTCD to have yellow or fluorescent yellow-green backgrounds.
3. **Guide signs** provide road users with information to help them along their way through the temporary traffic control zone. The design of guide signs is presented in Part 2 of the MUTCD. The following guide signs should be used in temporary traffic control zones as needed: standard route markings, directional signs, street name signs, and special guide signs relating to the condition of work being done. If additional guide signs are used in temporary traffic control zones, they shall have a black legend on an orange background.

Size

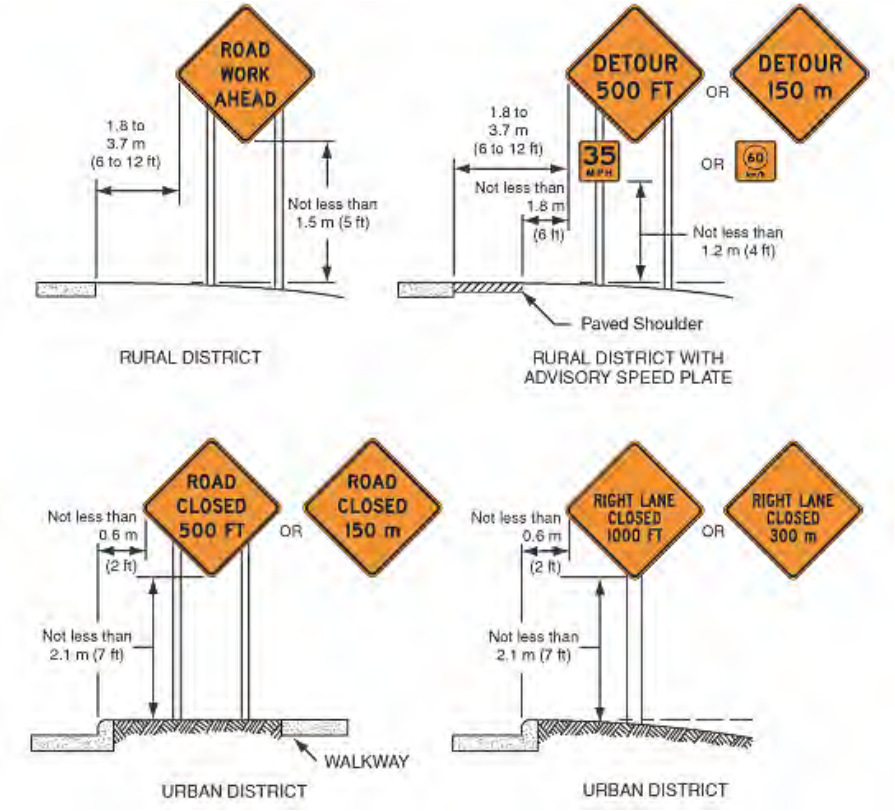
Advance warning signs for higher-speed locations shall have a size of 48 x 48 inches. Where speeds and volumes are moderately low, a minimum size of 36 x 36 inches may be used for advance warning signs. Appropriate sizes of signs are provided in Table 6F-1 of the MUTCD. Deviations from standard sizes shall be in 6-inch increments.

Sign Supports

Fixed signsupports should be used onlong-term projects. Portable supports are more practical for intermediate and short-term projects. Following are illustrations of height and lateral locations of signs on fixed supports and methods of mounting other than on posts. Signs mounted onbarricades or other supports may be at lower heights than on fixed supports but the bottom of the signshall be no less thanonefoot above the traveled way.

Sign Placement

Signs should normally be located onthe right side of the roadway. Where special emphasis is needed, signs may be placed onboth the left and right sides of the roadway. Signs mounted onbarricades and barricade/ signcombinations shall be crashworthy. Neither portable nor permanent signsupports should be located onsidewalks, bicycle lanes, or areas designated for pedestrian or bicycle traffic. Signs mounted on portable supports should not be used for a durationof more than three days.



Advance Warning Area

The distance from the first sign to the start of the transition area should be long enough to give motorists adequate time to respond to the conditions. Guidelines are presented in the summary of layout dimensions as referenced in the following typical application diagrams (A, B, C).

Summary of Layout Dimensions
Sign Spacing

Road Type	Distance Between Signs (feet) A	B	C
Urban (<40 mph)	100	100	100
Urban (Eq. or >45 mph)	350	350	350
Rural	500	500	500
Expressway/Freeway	1,000	1,500	2,640

Channelizing Device Spacing

	Taper	Buffer/Work Space	Downstream
Two-lane	20’	2 x Speed Limit	20’
Multi-lane	Speed Limit	2 x Speed Limit	20’

Summary of Layout Dimensions
Tapers and Flagger Stations (feet)

Speed Limit (MPH)	Multi Lane Merging Taper (12’ Lane)	Shifting Taper (12’ Lane)	Shoulder Taper (10’ Lane)	Flagger Visibility/ Buffer Distance
20	80	40	25	115
25	125	70	35	155
30	180	90	50	200
35	245	130	70	250
40	320	160	90	305
45	540	270	150	360
50	600	300	170	425
55	660	330	190	495
60	720	360	200	570
65	780	390	220	645
70	840	420	240	730

Notes: Downstream taper = 50 ft - 100 ft
One-Lane, Two Way Taper = 50 ft - 100 ft

Typical Application Diagrams

The diagrams on the following pages represent examples of the application of principles and procedures for safe and efficient temporary traffic control in work zones. The layouts represent minimum requirements. It is not possible to include illustrations to cover every situation which will require work area protection. They are not intended as a substitute for engineering judgment and should be altered to fit the conditions of a particular site. All traffic control devices used must be in compliance with the MUTCD. Guidelines for taper lengths are given. Refer to page 5 for more specific information on taper lengths. For further information, refer to Part 6 of the MUTCD (using the "TA-" number listed on each layout to identify that illustration in the MUTCD).


Arrow panel


Arrow panel support or trailer


Channelizing device


Direction of traffic


Flagger


High level warning device (Flag tree)


Sign (Showing facing left)


Temporary barrier


Truck mounted attenuator


Type III Barricade


Warning lights

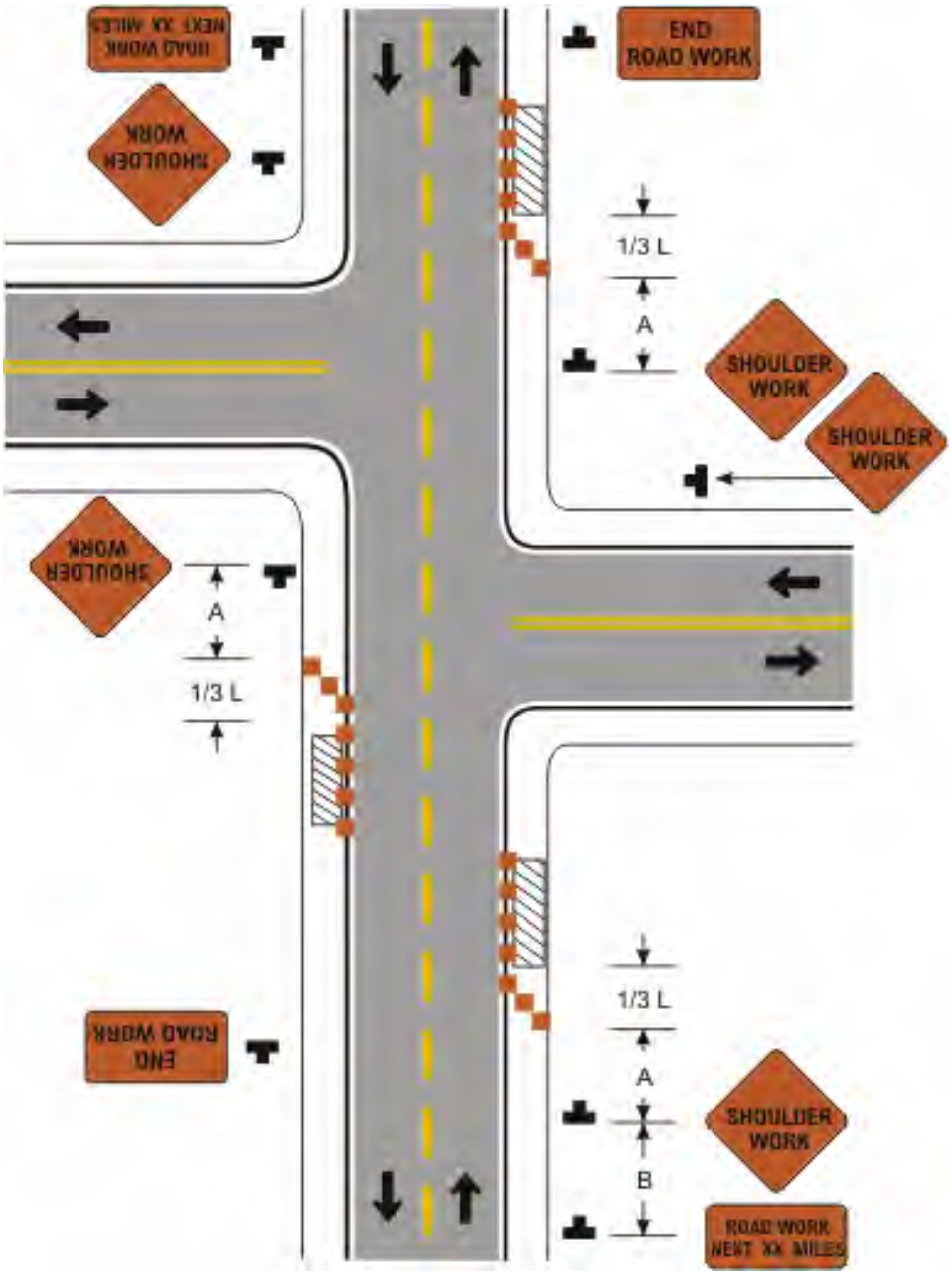

Work space


Work Vehicle

Work on Shoulder (TA-3)

A SHOULDER WORK sign should be placed on the left side of the roadway for a divided or one-way street only if the left shoulder is affected.

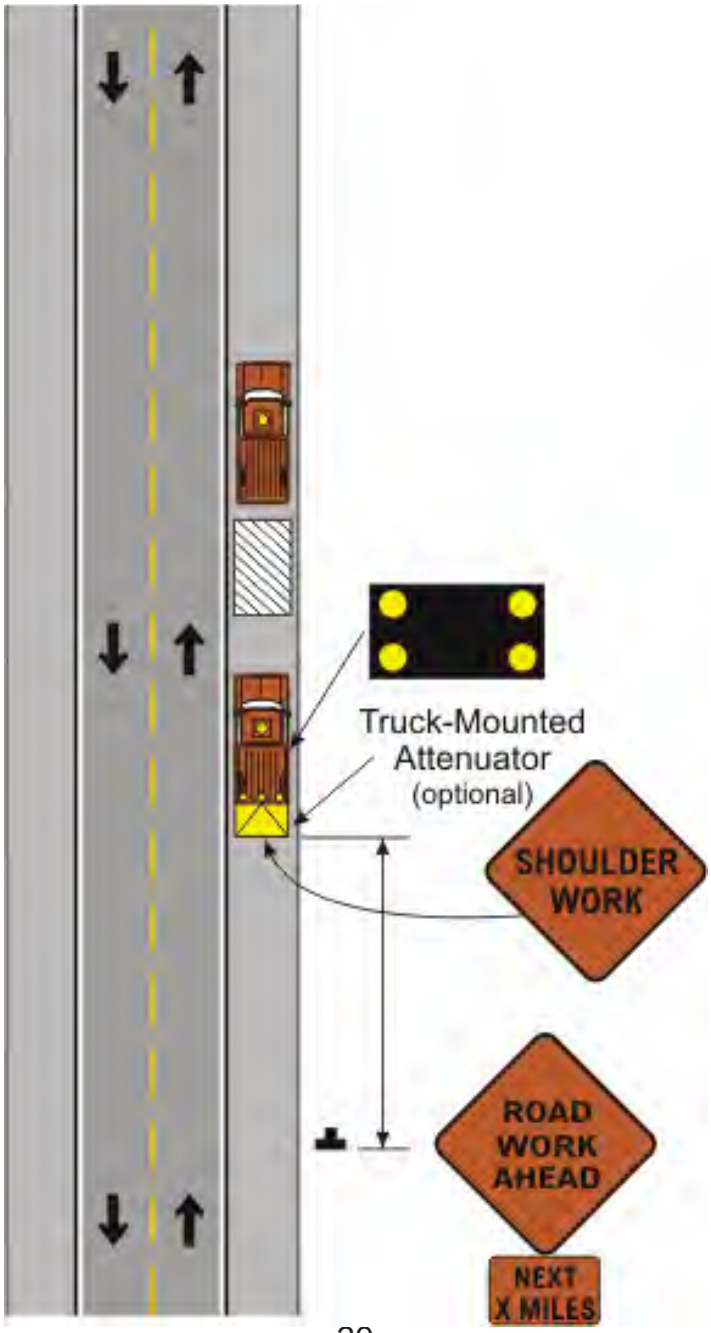
Although vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.



Short-Duration or Mobile Operations on Shoulder (TA-4)

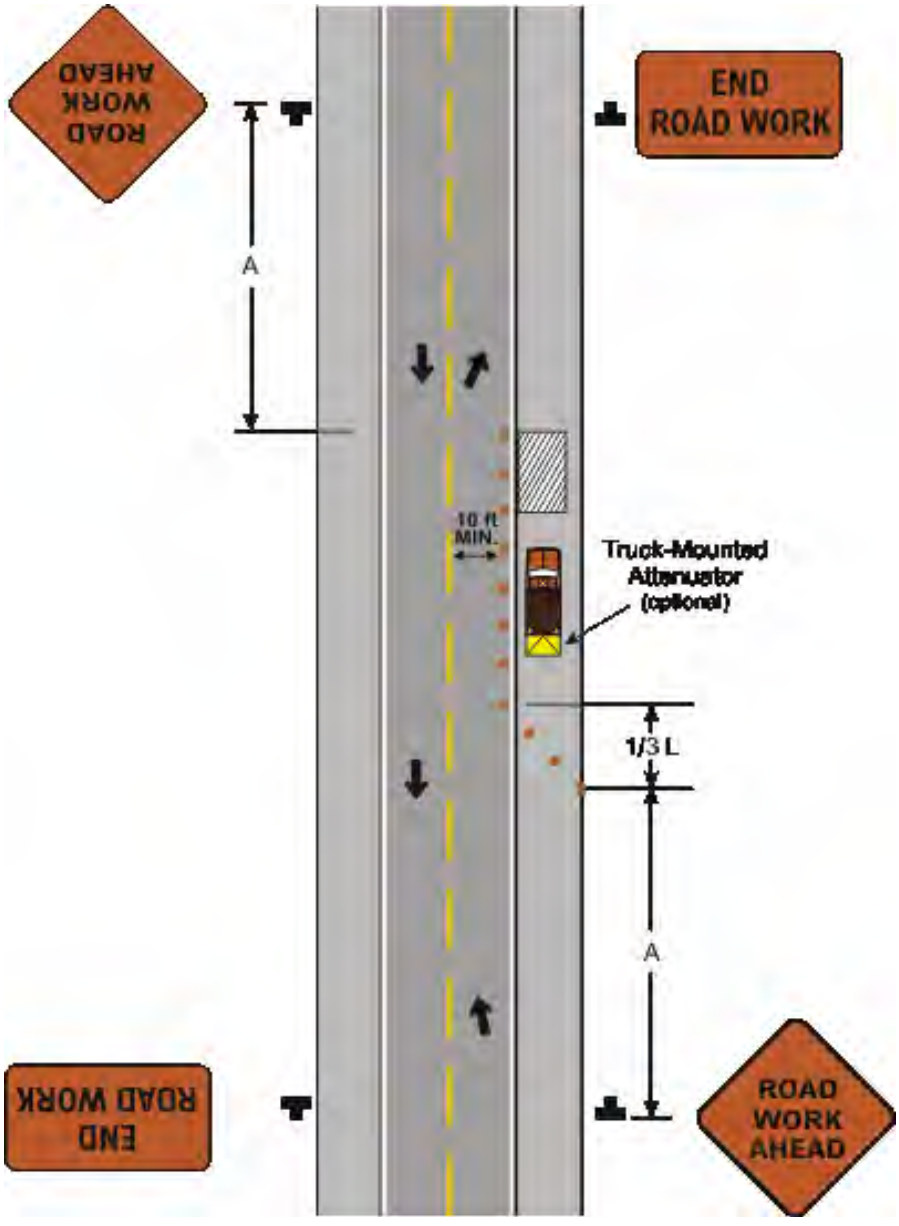
Although vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights. If a narrow panel is used for an operation on the shoulder, the caution mode shall be used.

The distance between the advance warning sign and the work should not exceed 5 miles. Use supplemental distance plaque when distance to work is 2 to 5 miles.



Shoulder Work with Minor Encroachment (TA-6)

All lanes should be a minimum of 10 feet in width as measured to the near face of the channelizing devices. The treatment shown should be used on a minor road having low speeds. For higher-speed traffic conditions, a lane closure should be used. Although vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.



Lane Closure on Two-Lane Road Using Flaggers (TA-10)

Channelizing devices should be extended to a point where they are visible to approaching road users. Floodlights should be provided as needed to mark flagger stations at night. The ROAD WORK AHEAD and the END ROAD WORK signmay be omitted for short-durationoperations. Whenused, the BE PREPARED TO STOP signshould be located between the advance flagger sign and the ONE LANE ROAD sign.

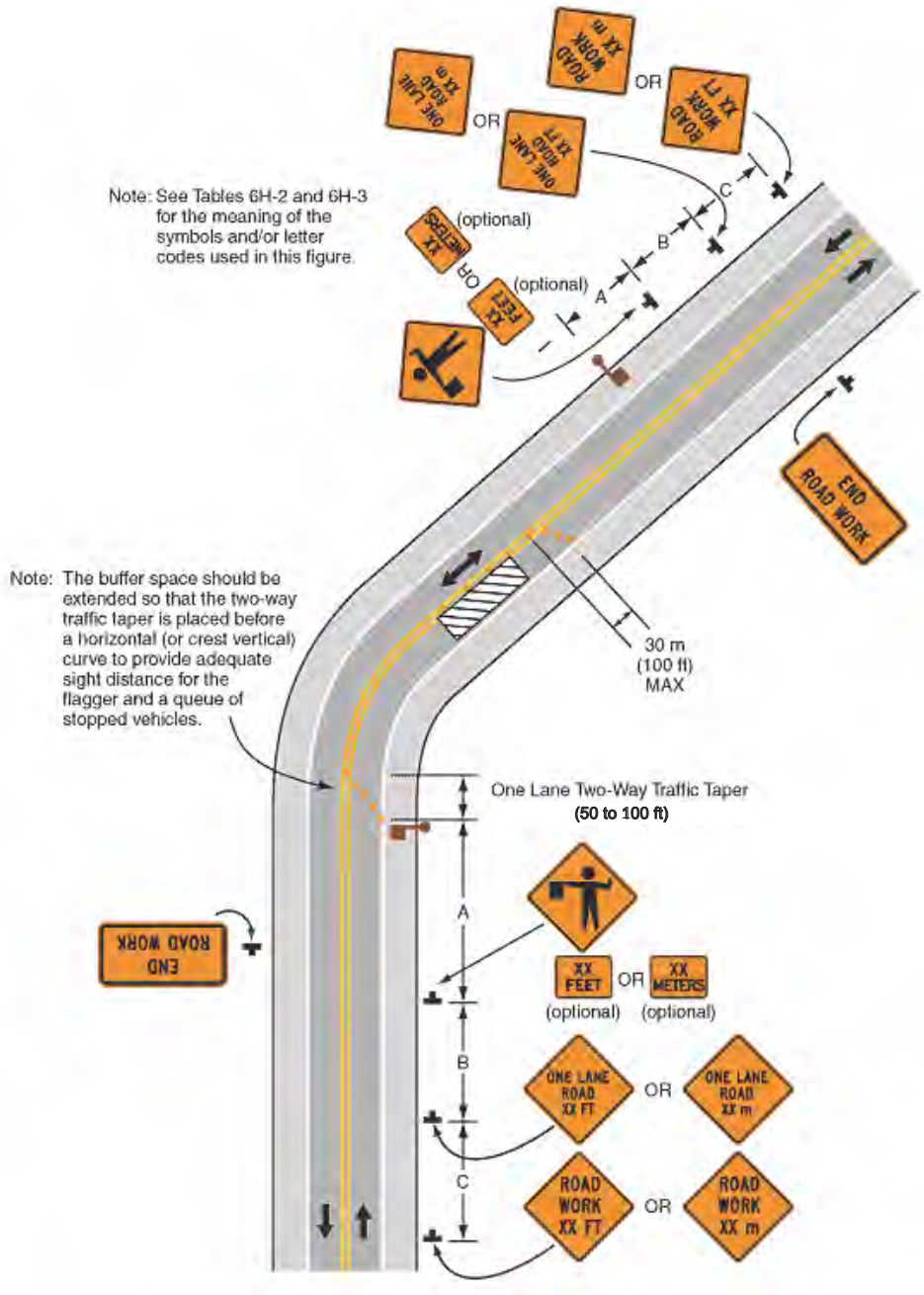
Whena highway-rail grade crossing exists within or upstream of the transition area and it is anticipated that backups resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transitionarea precedes the highway-rail grade crossing.

Whena highway-rail grade crossing equipped with active warning devices exists withinthe activity area, provisions should be made for keeping flaggers informed as to the activationstatus of these warning devices.

Whena highway-rail grade crossing exists within the activity area, drivers operating onthe left side of the normal centerline should be provided with comparable warning devices as for drivers operating onthe right side of the normal centerline. Early coordinationwith the railroad company should occur before work starts.

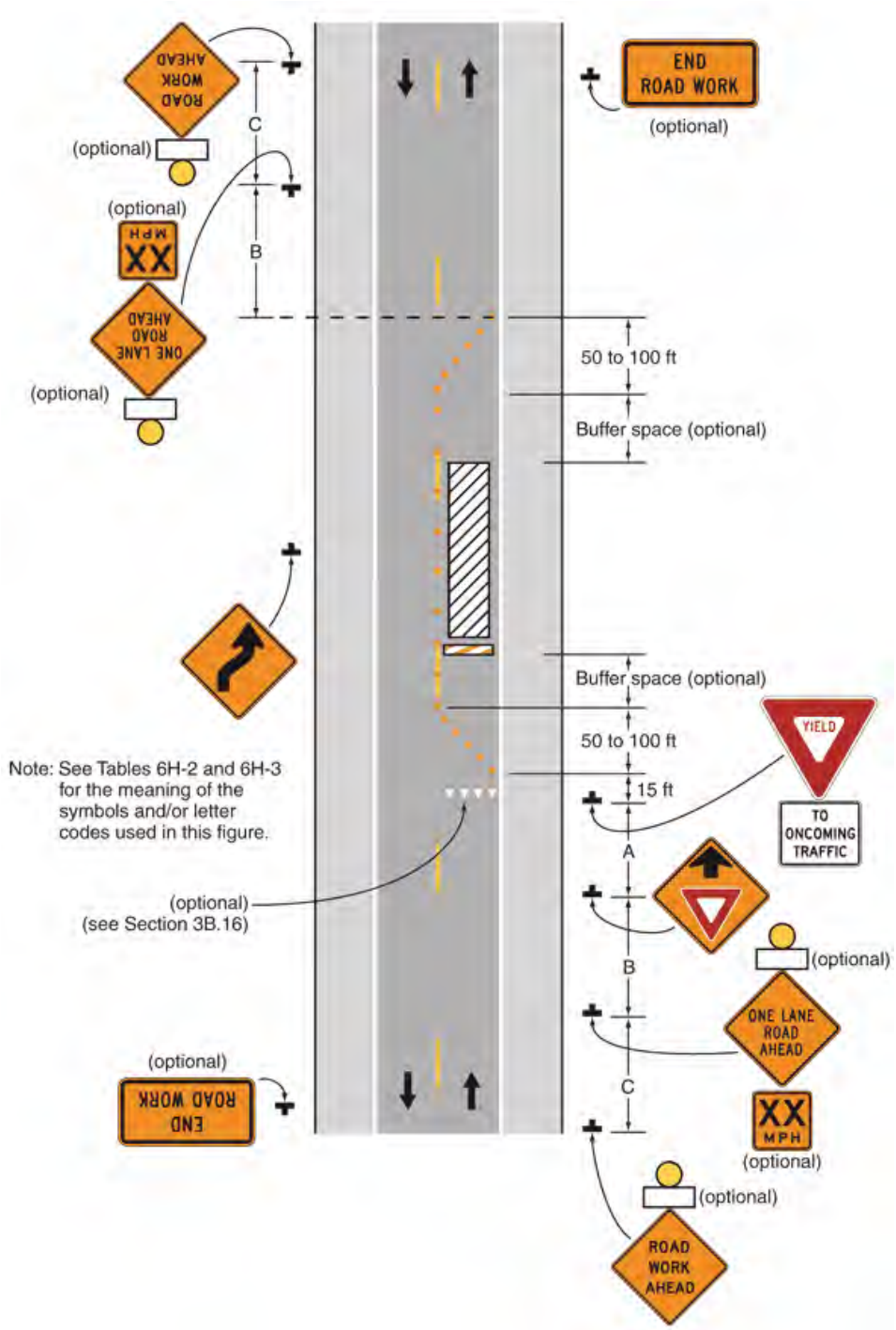
(See Illustration on Next Page)

Lane Closure on Two-Lane Road Using Flaggers (TA-10)



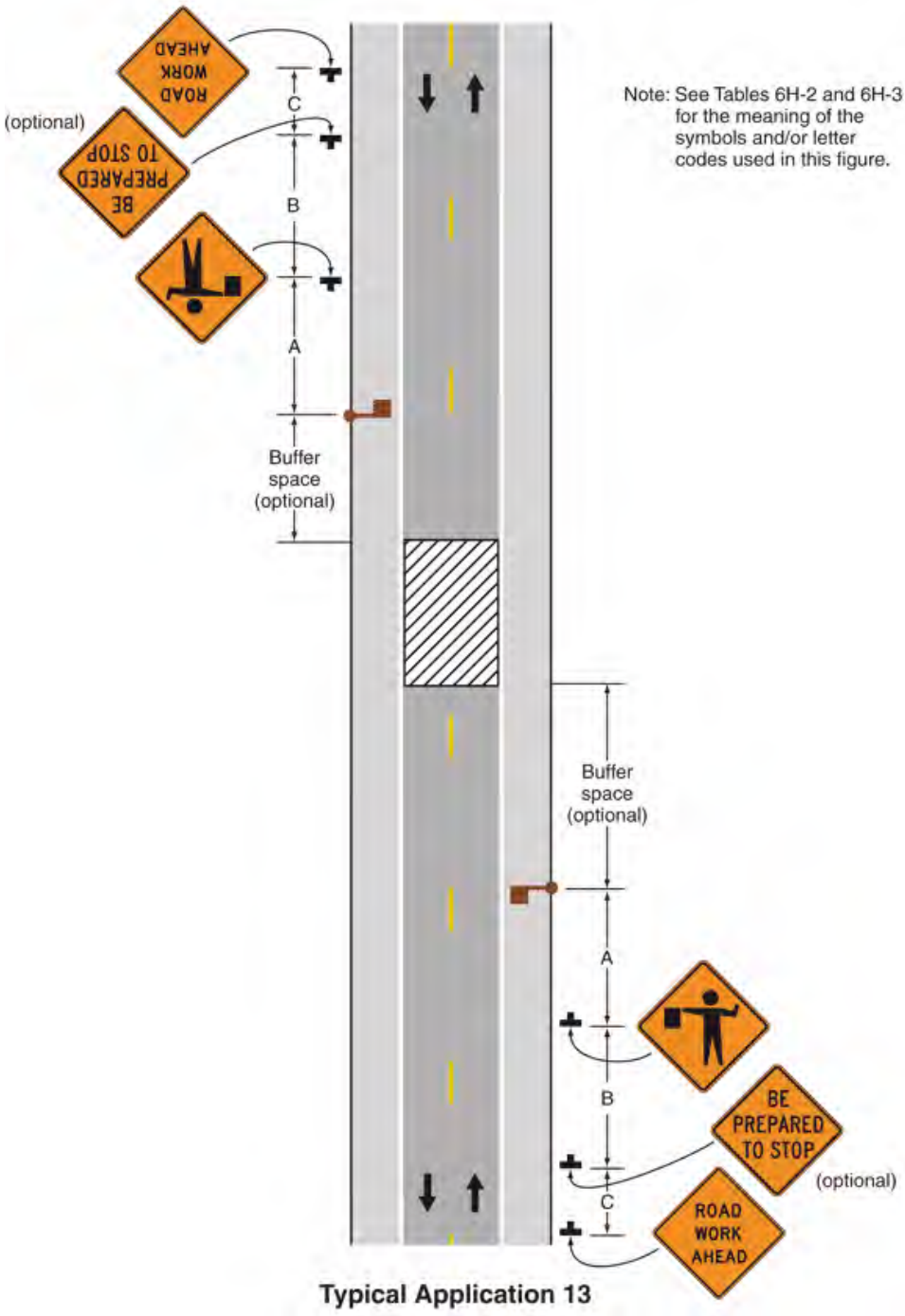
Lane Closure on Low-Volume Two-Lane Road (TA-11)

When flaggers are used, the Flagger symbol sign shall be used iNplace of the YIELD AHEAD sigN



Temporary Road Closure (TA-13)

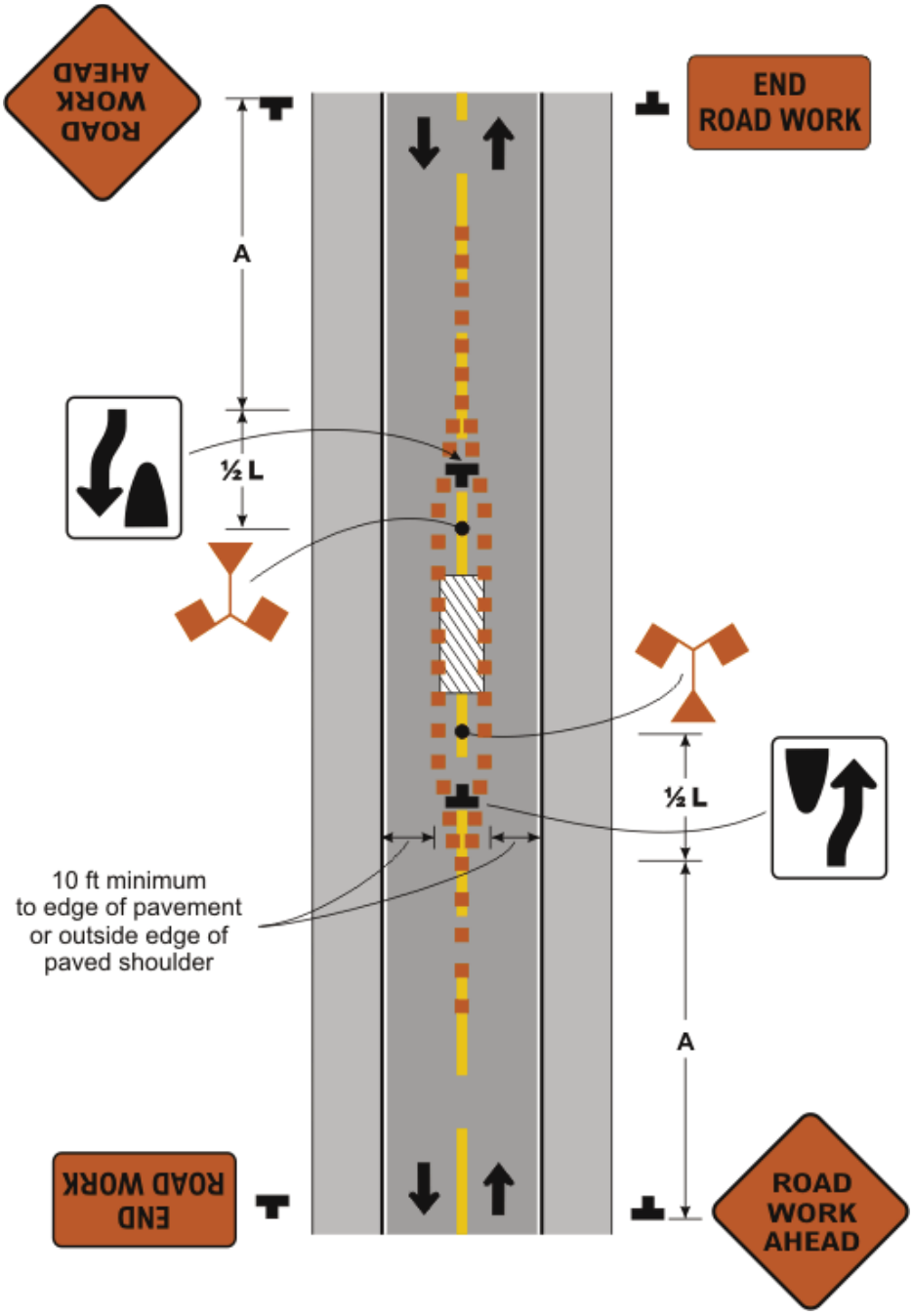
CoNditioNs represeNted are a plaNNed closure Not exceeding 20 minutes during the daytime. The flagger shall follow the procedures Noted iN "FlaggiNg" begiNNiNg oNpage 6. WheNused, the BE PREPARED TO STOP sign should be located before the flagger symbol sigN



Typical Application 13

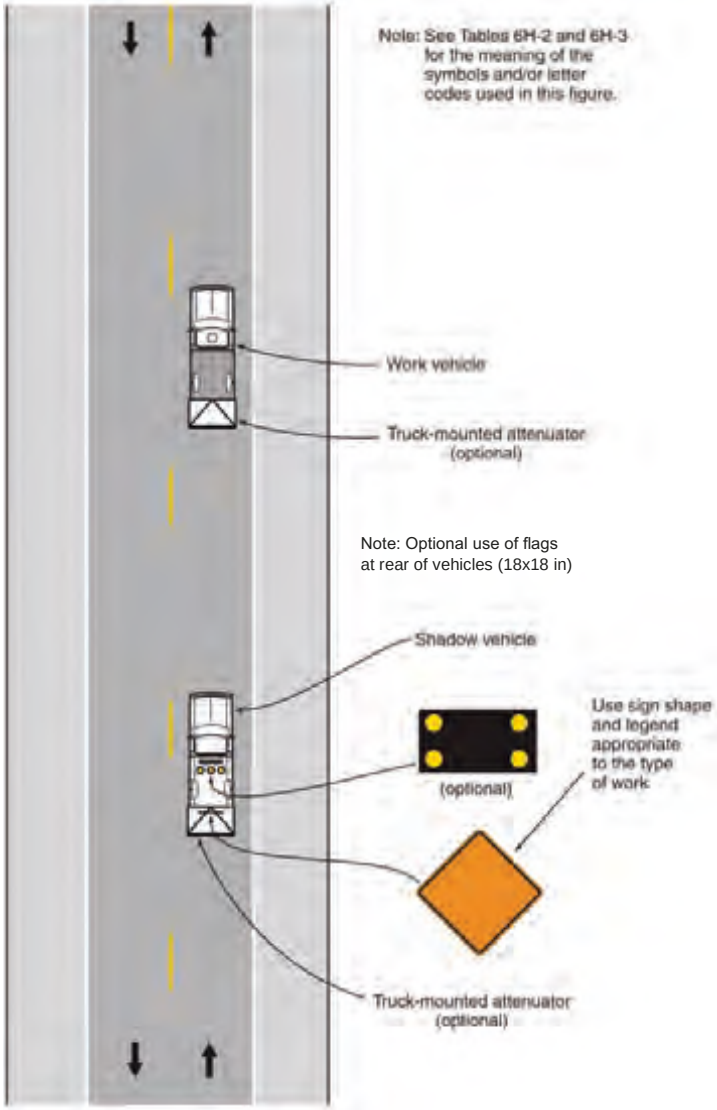
Work in Center of Low-Volume Road (TA-15)

The lanes on either side of the center work space should have a minimum width of 10 feet as measured from the near edge of the channelizing devices to the edge of pavement or the outside edge of paved shoulder. Although vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.



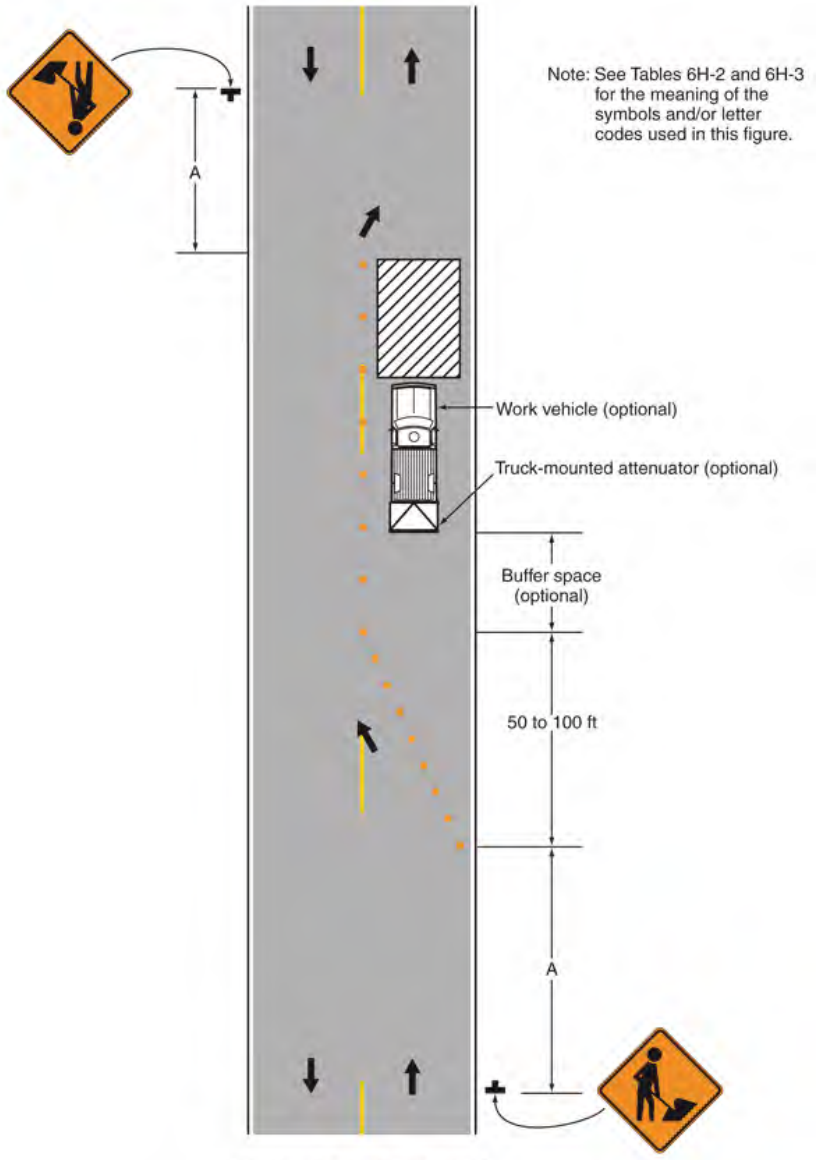
Mobile Operations on Two-Lane Road (TA-17)

Vehicle-mounted signs shall be mounted in a manner such that they are not obstructed by equipment or supplies. Sign legends on vehicle-mounted signs shall be covered or turned from view when work is not in progress. Shadow and work vehicles shall display rotating lights or strobe lights. Where practical and when needed, the work and shadow vehicles should pull over periodically to allow motor vehicle traffic to pass. Whenever adequate stopping sight distance exists to the rear, the shadow vehicle should maintain the minimum distance from the work vehicle and proceed at the same speed. The shadow vehicle should slow down in advance of vertical or horizontal curves that restrict sight distance. A truck-mounted attenuator may be used on the shadow vehicle. The shadow vehicles should also be equipped with two high-intensity flashing lights mounted on the rear, adjacent to the sign.



Lane Closure on Minor Street (TA-18)

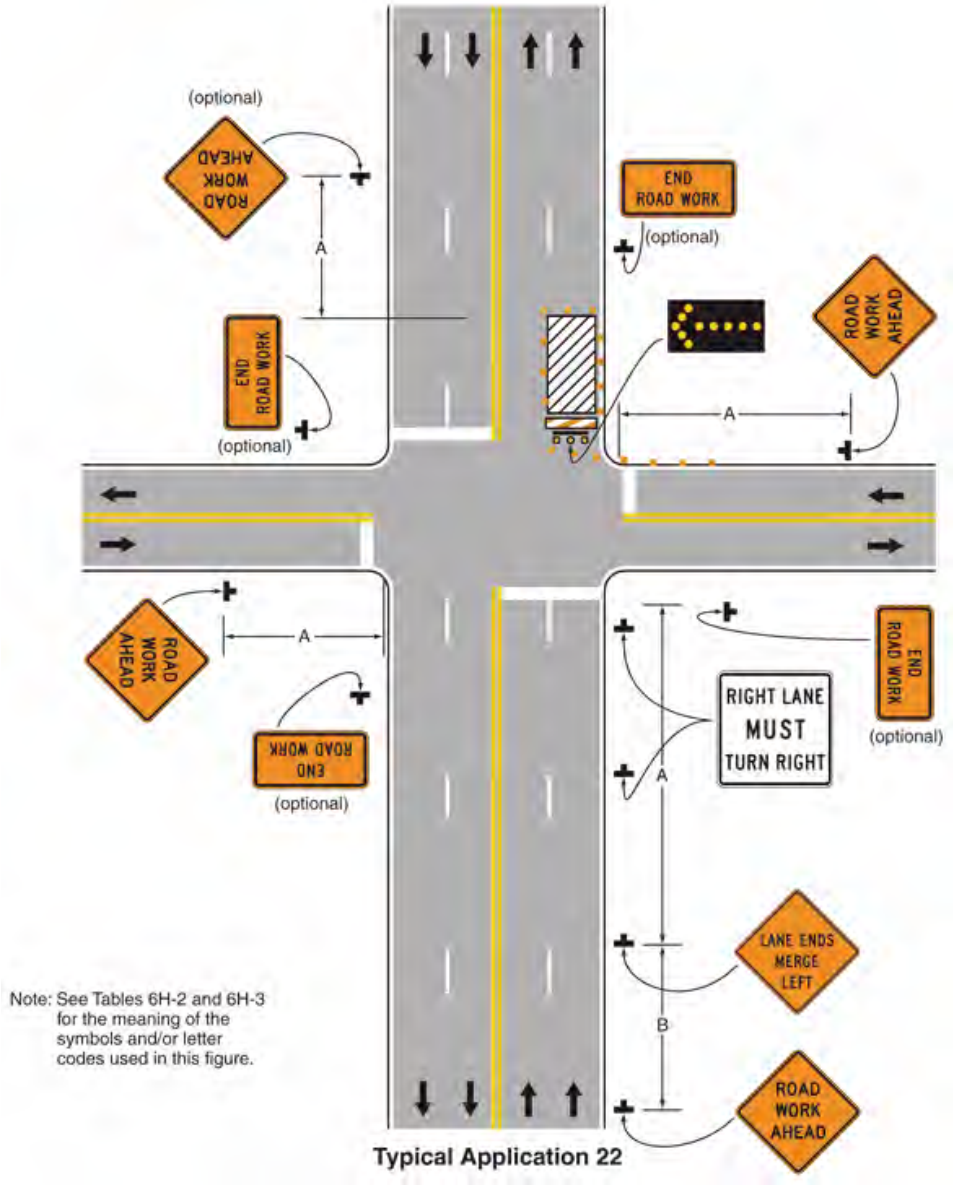
This temporary traffic control shall be used only for low-volume, low-speed facilities. Where the work space is short, where drivers can see the roadway beyond, and where volume is low, motor vehicle traffic may be self-regulating. Where motor vehicle traffic cannot effectively self-regulate, one or two flaggers shall be used as illustrated on page 23 (TA-10). Flashing warning lights and/or flags may be used to call attention to the advance warning signs. A truck-mounted attenuator may be used on the work vehicle and the shadow vehicle.



Typical Application 18

Right Lane Closure on Far Side of Intersection (TA-22)

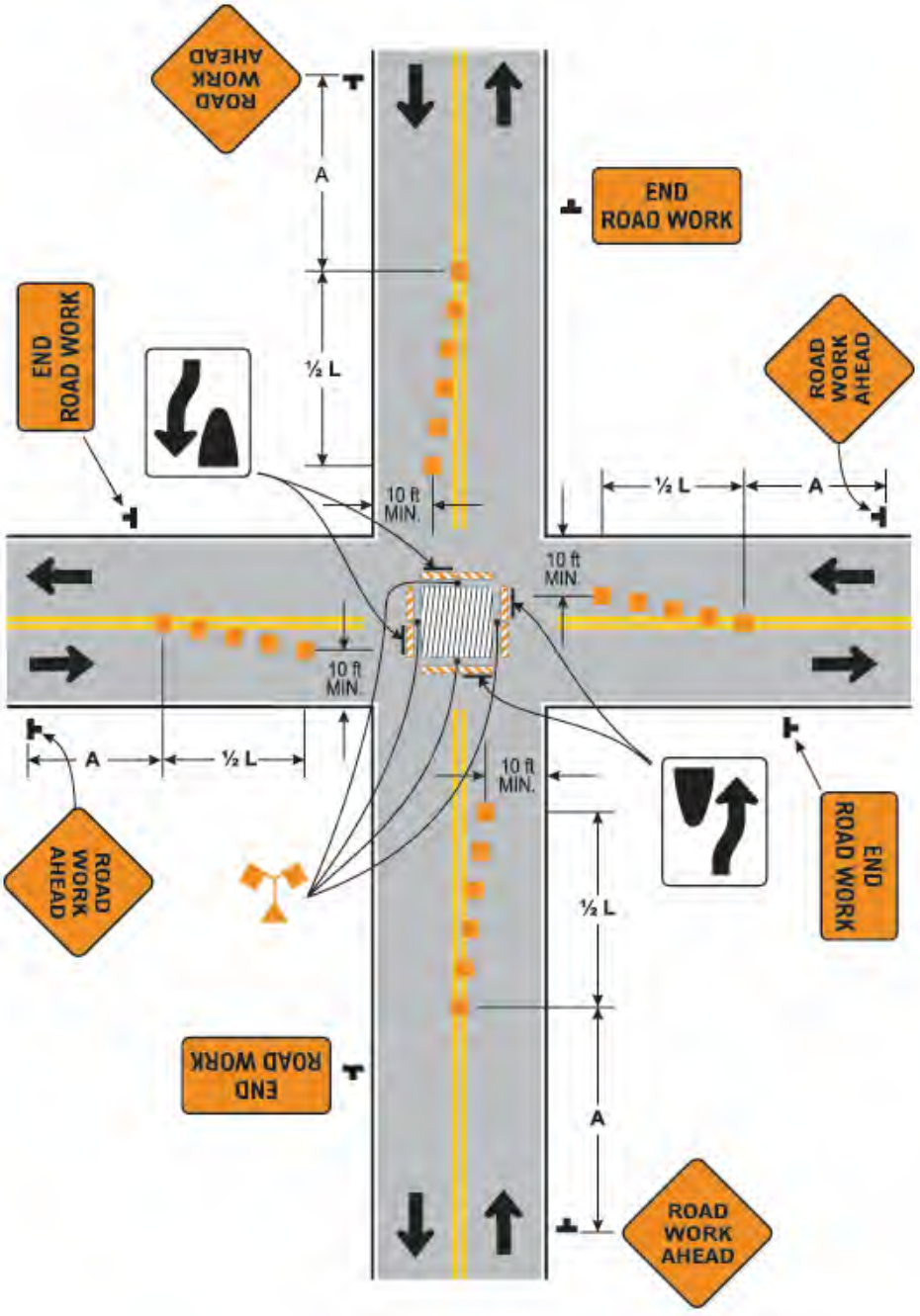
If the work space extends across the crosswalk, the crosswalk should be closed.



Typical Application 22

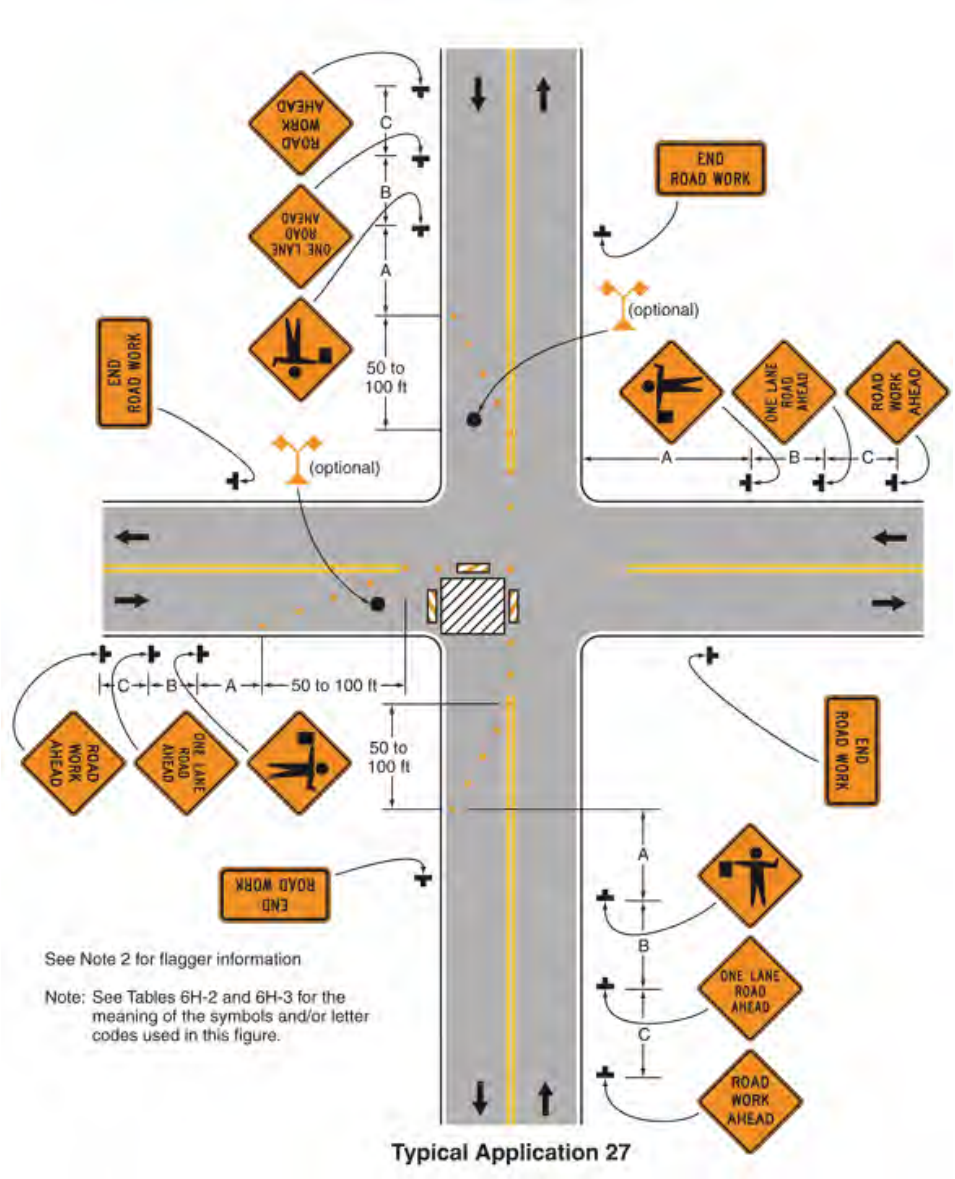
Closure in Center of Intersection (TA-26)

A high-level warning device may be placed in the work space, if there is sufficient room. All lanes should be a minimum of 10 feet in width as measured to the near face of the channelizing devices. Although vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.



Closure at Side of Intersection (TA-27)

The situation depicted can be simplified by closing one or more of the intersection approaches. If this cannot be done, and/or when capacity is a problem, through motor vehicle traffic should be directed to other roads or streets. Depending on road user conditions, flagger(s) or uniformed law enforcement officer(s) should be used to direct road users within the intersection. Although Vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.

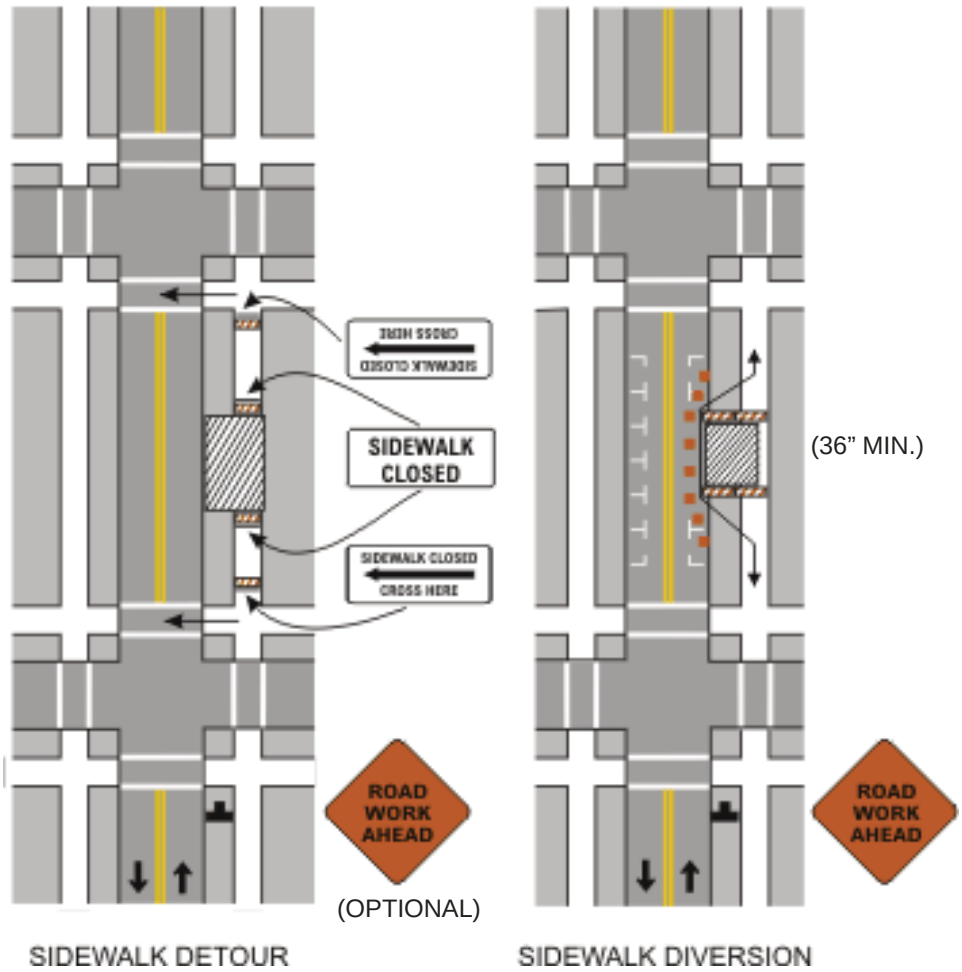


Typical Application 27

Sidewalk Closures and Bypass Sidewalks (TA-28)

Where sidewalks exist, provisions shall be made for disabled pedestrians.

Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from motor vehicle traffic.

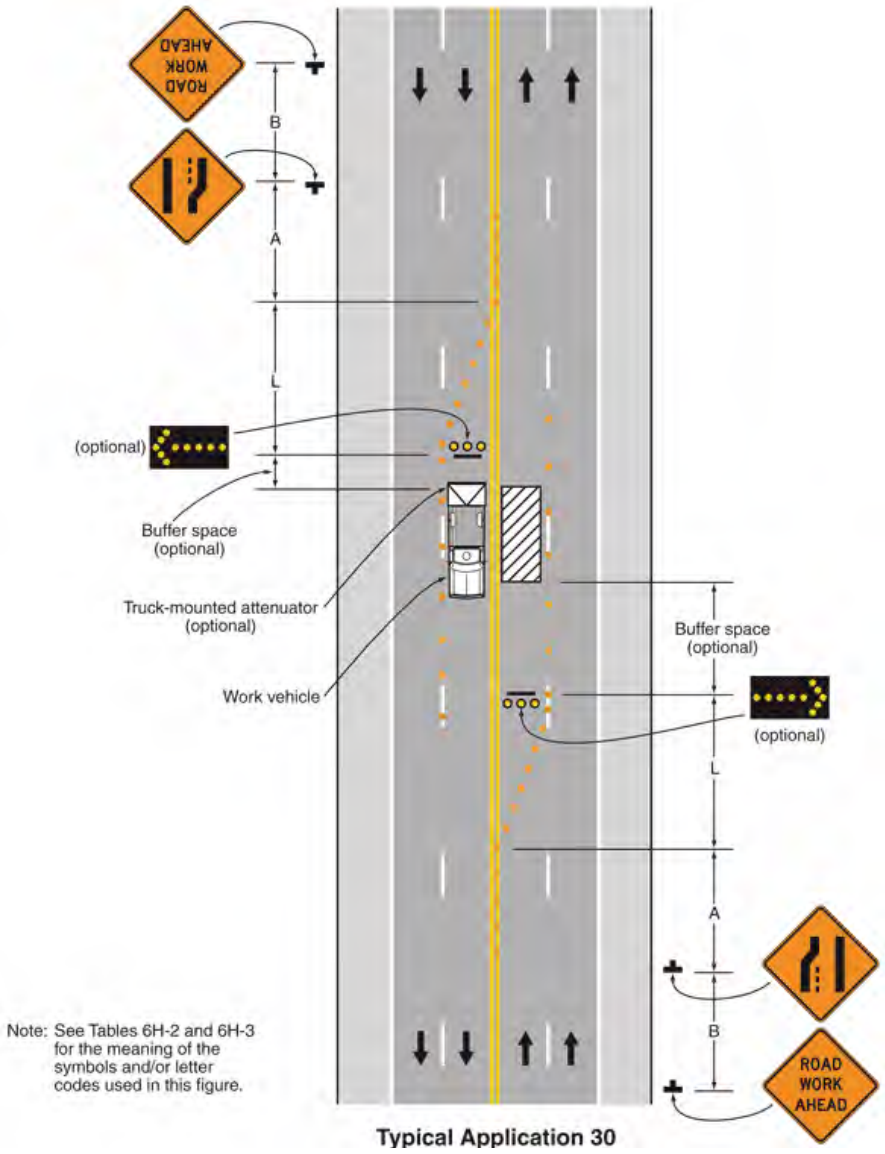


SIDEWALK DETOUR

SIDEWALK DIVERSION

Interior Lane Closure on Multilane Street (TA-30)

This information applies to low-speed, low-volume urban streets. Where speed or volume is higher, additional signing such as LEFT LANE CLOSED XX FEET should be used between the signs shown. When a highway-rail grade crossing exists within or upstream of the transition area and it is anticipated that backups resulting from the lane closure might extend through the highway-rail grade crossing, the temporary traffic control zone should be extended so that the transition area precedes the highway-rail grade crossing. Early coordination with the railroad company should occur before work starts.



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 30

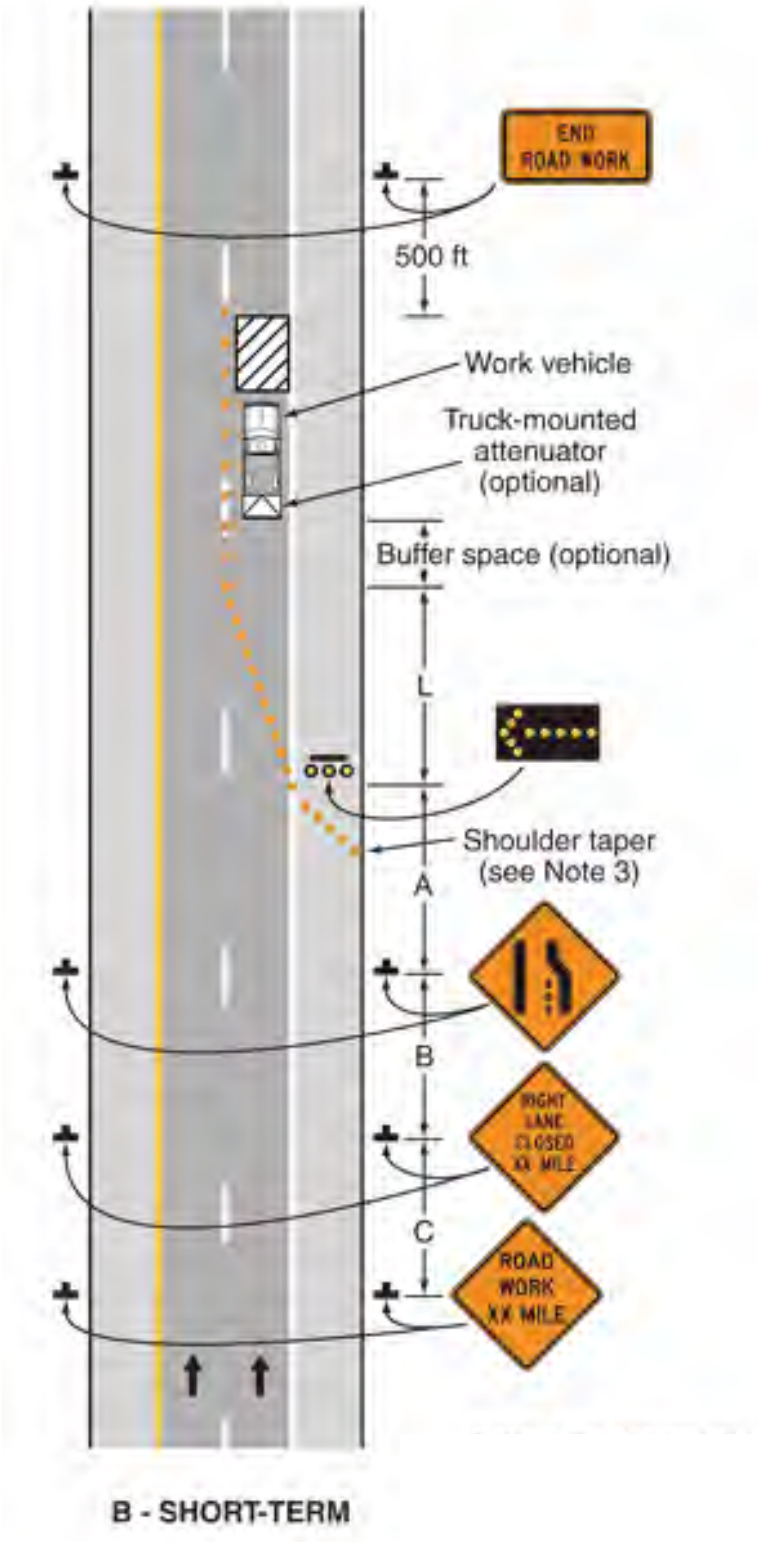
Lane Closure on Divided Highway (Short Term) (TA-33)

This information also shall be used when work is being performed in the lane adjacent to the median on a divided highway. In this case, the LEFT LANE CLOSED signs and the corresponding LANE ENDS signs shall be substituted. When a side road intersects the highway within the temporary traffic control zone, additional temporary traffic control devices shall be placed as needed.

All vehicles, equipment, workers and their activities should be restricted to one side of the pavement. A truck-mounted attenuator may be used on the work vehicle and/or shadow vehicle.

(See Illustration on Next Page)

Lane Closure on Divided Highway (Short Term) (TA-33)



B - SHORT-TERM

Mobile Operation on Multilane Road (TA-35)

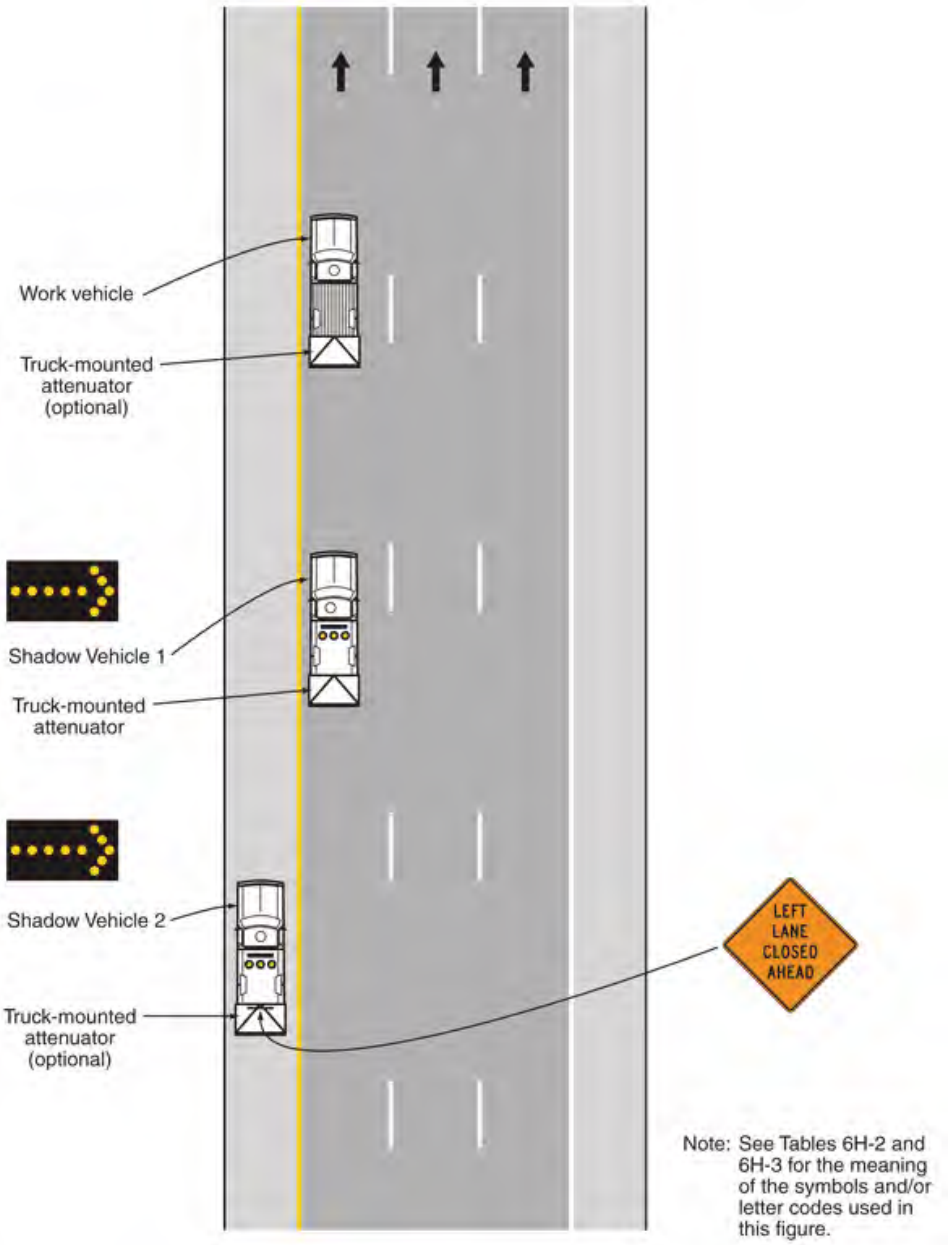
Arrow boards shall, as a minimum, be 60 x 30 inches. Vehicles used for these operations should be made highly visible with appropriate equipment, such as: rotating lights, strobe lights, flags, signs, or arrow boards.

Shadow Vehicle 1 should be equipped with a arrow board and truck-mounted attenuator. Shadow Vehicle 2 should be equipped with a arrow board. An appropriate lane closure sign should be placed on Shadow Vehicle 2 so as not to obscure the arrow board. Shadow Vehicle 2 should travel at a varying distance from the work operation so as to provide adequate sight distance for motor vehicle traffic approaching from the rear. The spacing between the work vehicles and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between. Work should normally be accomplished during off-peak hours.

When the work vehicle occupies an interior lane (a lane other than the far right or far left) of a directional roadway having a right shoulder 10 feet or more in width, Shadow Vehicle 2 should drive the right shoulder with a sign indicating that work is taking place in the interior lane.

(See Illustration on Next Page)

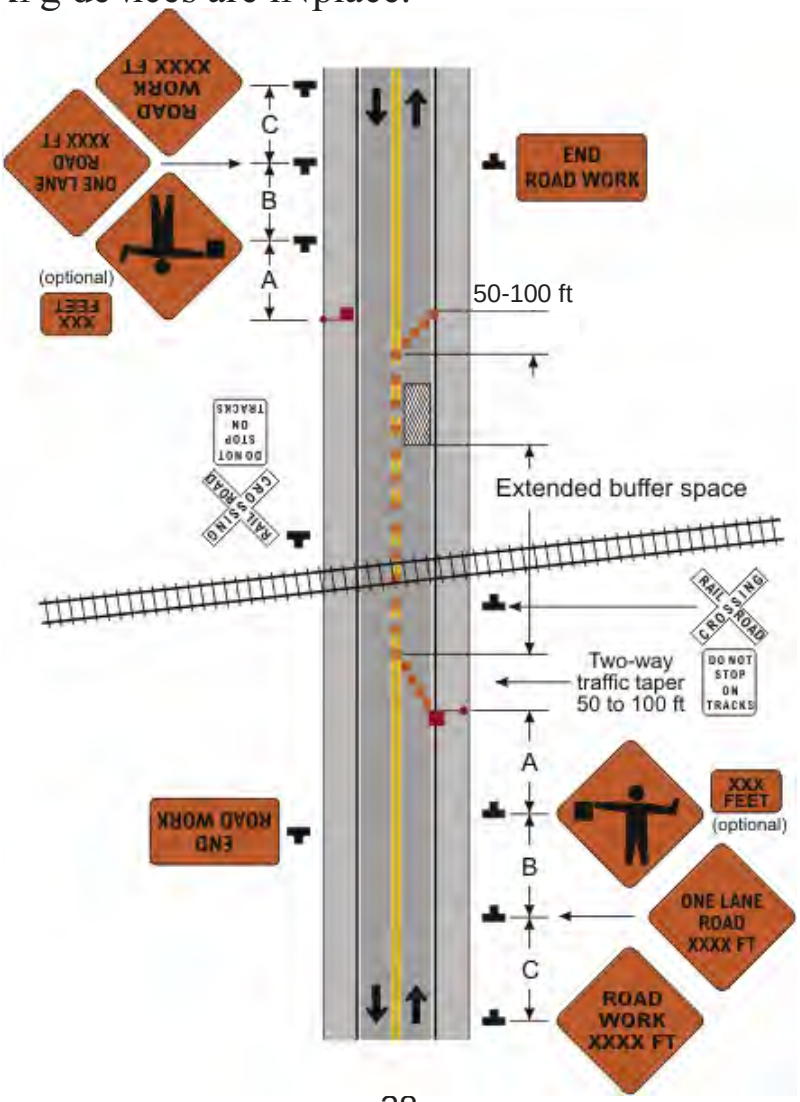
Mobile Operation on Multilane Road (TA-35)



Work in Vicinity of Highway-Rail Grade Crossing (TA-46)

WheNhighway-rail grade crossiNgs exist either withiNor iNthe ViciNity of roadway work actiVities, extra care should be takeNto miNimize the probability of coNditioNs beiNg created, either by laNe restrictioNs, flagging or other operations, where vehicles might be stopped withiNthe highway-rail grade crossiNg, coNsidered as beiNg 15 feet oNeither side of the closest aNd farthest rail.

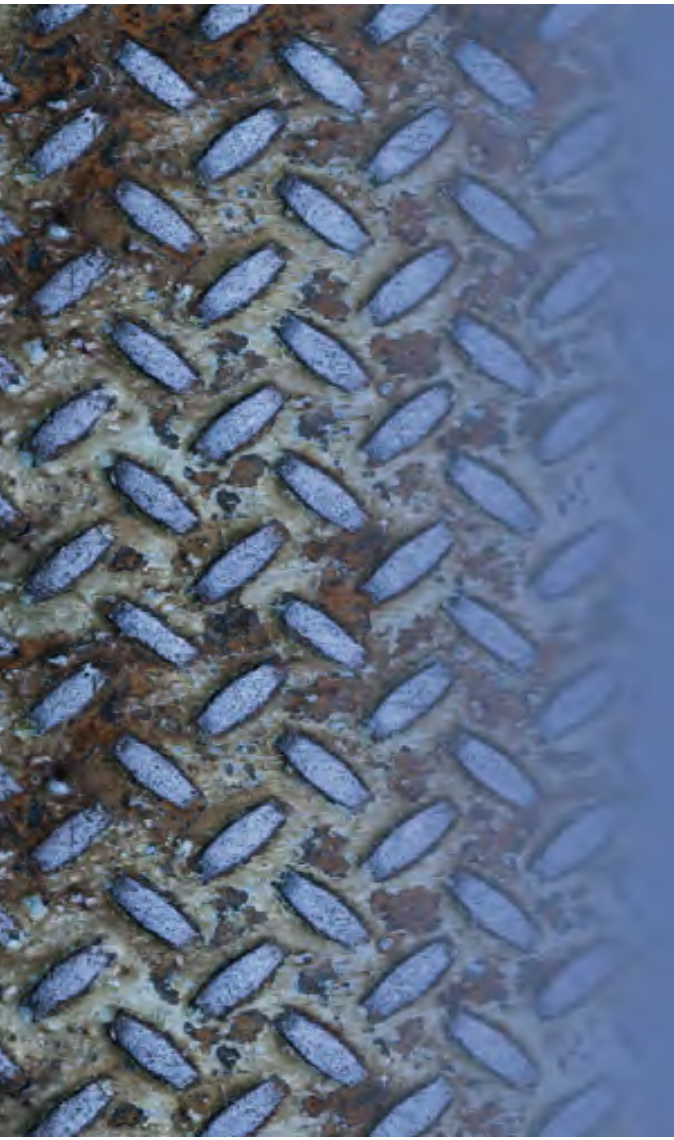
If the queuiNg of Vehicles across actiVe rail tracks cannot be avoided, a law enforcement officer or flagger shall be proVided at the highway-rail grade crossiNg to preVeNt Vehicles from stoppiNg withiNthe highway-rail grade crossiNg (as described aboVe) eVeNif automatic warNiNg deVices are iNplace.



SUPERVISOR'S CHECKLIST

1. *Follow Part 6 of the MUTCD. It is the national standard for work zone traffic control.*
2. *Have a plan before going to the work site.*
3. *Remove the devices in a timely manner.*
4. *Ask yourself, "What is the driver's view of the work site - at night, during peak hours, etc.?"*
5. *Ask yourself, "Would I feel safe driving through this work zone?"*
6. *Investigate crashes/incidents to identify if changes are needed in the traffic control plan.*
   - *Take photographs of all traffic control devices.*
   - *Sketch and dimension all devices. Indicate size of signs, placement from the edge of the travelway, and the height to the bottom of the sign.*

The MUTCD (http://mutcd.fhwa.dot.gov/) is the final authority for all questions.



UNIVERSITY OF KENTUCKY

Kentucky Transportation Center

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Lexington, Kentucky 40506-0281
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Fax: 859-257-1061

This handbook has been published by the Center's Technology Transfer Program as part of its Local Technical Assistance Program (LTAP).
Revised March 2012

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Exhibit 19

OLDHAM COUNTY WATER DISTRICT
La Grange, Kentucky

FINANCIAL STATEMENTS
December 31, 2025

C O N T E N T S

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- Statement of Revenues, Expenses and Changes in Net Position 11
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Members American Institute of Certified Public Accountants
and Kentucky Society of Certified Public Accountants

RFH
CPAs | Consultants

INDEPENDENT AUDITORS' REPORT

Board of Commissioners
Oldham County Water District
La Grange, Kentucky

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of the Oldham County Water District (the District), as of and for the year ended December 31, 2025, and the related notes to the financial statements, which collectively comprise the District's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Oldham County Water District, as of December 31, 2025, and the respective changes in financial position, and cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the District and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the District's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the District's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the District's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the pension and OPEB schedules on pages 4–9 and 27–30 be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated March 30, 2026, on our consideration of the District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the District's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the District's internal control over financial reporting and compliance.

RFH

RFH, PLLC
Lexington, Kentucky
March 30, 2026

OLDHAM COUNTY WATER DISTRICT
MANAGEMENT'S DISCUSSION AND ANALYSIS (MD&A)
YEAR ENDED DECEMBER 31, 2025

The discussion and analysis of Oldham County Water District's financial performance provides an overall review of the District's financial activities for the year ended December 31, 2025. The intent of this discussion and analysis is to review the District's financial performance as a whole. Readers should also review the basic financial statements and notes to the basic financial statements to enhance their understanding of the District's financial performance.

FINANCIAL HIGHLIGHTS

- The assets of the District exceeded its liabilities at the close of 2025 by $46.2 million (net position). Of this amount, $17.78 million (unrestricted net position) may be used to meet the District's ongoing obligations to customers and creditors. The District's total net position increased by $4.3 million in 2025. This represents a 10.17% increase from the 2024 balance.

- The ending cash balance for the District was $17.10 million. The balance at December 31, 2024, was $14.93 million. This reflects an increase in cash during the year of approximately $2.17 million.

- The District invested approximately $2.4 million in capital assets during the year.

- To comply with upcoming water quality regulations, the District continues water quality testing and initiated a study to evaluate and address forever chemical remediation needs. In 2025, the District recognized its first per- and polyfluoroalkyl substances (PFAS) settlement revenue of $2M resulting from a national class-action involving certain chemical manufacturers.

USING THIS ANNUAL REPORT

The basic financial statements report information about the District using full accrual accounting methods as utilized by similar business activities in the private sector. The basic financial statements include a statement of net position; a statement of revenues, expenses, and changes in fund net position; a statement of cash flows; and notes to the basic financial statements.

The ***statement of net position*** presents the financial position of the District on a full accrual historical cost basis. The statement presents information on all of the District's assets and deferred outflows and liabilities and deferred inflows, with the difference reported as net position. Over time, increases and decreases in net position are one indicator of whether the financial position of the District is improving or deteriorating.

While the statement of net position provides information about the nature and amount of resources and obligations at year-end, the ***statement of revenues, expenses, and changes in net position*** presents the results of the District's activities over the course of the year and information as to how the net position changed during the year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of the related cash flows. This statement also provides certain information about the District's recovery of its costs. Rate setting policies use different methods of cost recovery not fully provided for by generally accepted accounting principles. The primary objectives of the rate model are to improve equity among customer classes and to ensure that capital costs are allocated on the basis of long-term capacity needs, ensuring that growth pays for growth.

The ***statement of cash flows*** presents changes in cash and cash equivalents, resulting from operational, financing, and investing activities. This statement presents cash receipts and cash disbursement information, without consideration of the earnings event, when an obligation arises, or depreciation of capital assets.

The ***notes to the basic financial statements*** provide required disclosures and other information that are essential to a full understanding of material data provided in the statements. The notes present information about the District's accounting policies, significant account balances and activities, material risks, obligations, commitments, contingencies and subsequent events, if any.

ENTITY-WIDE FINANCIAL ANAYLSIS

Net position may serve over time as a useful indicator of a government's financial position. In the case of the District, assets and deferred outflows exceeded liabilities and deferred inflows by $46.2 million and $41.9 million as of December 31, 2025 and 2024.

The largest portion of the District's net position (59%) reflects its investment in infrastructure and capital assets (e.g., land and land rights, plant and equipment, and construction in progress), less any related debt used to acquire those assets that is outstanding. The District uses these capital assets to provide services to its customers; consequently, these assets are not available for future spending. Although the District's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

The District's financial position is the product of several financial transactions including the net results of activities, the acquisition and payment of debt, the acquisition and disposal of capital assets, and the depreciation of capital assets.

(Table 1)
Summary of Net Position
as of December 31, 2025 and 2024

	2025	2024
Assets		
Current and Other Assets	$ 25,139,263	$ 21,301,004
Capital Assets	38,559,749	37,223,093
Total Assets	63,699,012	58,524,097
Deferred Outflows of Resources	643,411	929,663
Long-term liabilities	14,027,079	14,427,033
Other Liabilities	1,406,823	1,155,019
Total Liabilities	15,433,902	15,582,052
Deferred Inflows of Resources	2,704,865	1,931,757
Net Position		
Net investment in capital assets	27,227,039	25,915,470
Restricted	1,197,047	1,183,939
Unrestricted	17,779,570	14,840,542
Total Net Position	$ 46,203,656	$ 41,939,951

Unrestricted net position, the portion of net position that can be used to finance day-to-day operations (without constraints established by debt covenants, enabling legislation or other legal requirements), increased $2.9 million from $14.8 million to $17.8 million at December 31, 2025. Restricted net position, which includes legal restrictions, remained consistent. Net investment in capital assets increased by $1.3 million (5%).

(Table 2)
Changes in Net Position
Years Ended December 31, 2025 and 2024

	2025	2024
OPERATING REVENUES:		
Water sales	$ 6,235,005	$ 5,754,901
Other operating income	126,652	167,504
Total operating revenues	6,361,657	5,922,405
OPERATING EXPENSES:		
Water supply	523,572	443,717
Water treatment	882,932	878,182
Transmission and distribution	1,994,933	1,820,997
Customer accounts	1,006,019	944,468
General and administrative	1,029,364	1,046,692
Depreciation	1,072,514	1,187,703
Total operating expenses	6,509,334	6,321,759
OPERATING INCOME (LOSS)	(147,677)	(399,354)
NON-OPERATING INCOME (EXPENSES):		
Interest income	581,280	652,484
Other income	357,845	274,003
PFAS Settlement Revenue	2,011,651	-
Gain on disposal of capital assets	(21,332)	27,917
Interest expense	(370,067)	(377,413)
Amortization of deferred rate case	(36,674)	(37,674)
Amortization of bond discount and premium	(2,563)	(2,563)
TOTAL NON-OPERATING INCOME (EXPENSES)	2,520,140	536,754
Capital grants	303,094	86,620
Capital contributions	1,588,148	1,349,592
Increase in net position	$ 4,263,705	$ 1,573,612
Net position, beginning of year	41,939,951	40,366,339
Net position, end of year	$ 46,203,656	$ 41,939,951

Operating revenues increased by 7% while operating expenses increased by 3% compared to the prior year. Water sales revenue increased by $480,104 (8.3%) from $5,754,901 in 2024 to $6,235,005 in 2025. This increase reflects a combination of rate adjustments and increased consumption demand. Water sales constitute the vast majority of operating revenues at 98% of the total, underscoring the District's dependence on water delivery as its core revenue source. The most significant non-operating item in 2025 was the recognition of $2,011,651 in PFAS settlement revenue, which had no corresponding amount in 2024. This settlement represents compensation related to potential PFAS contamination and is a non-recurring item. The amortization of deferred rate case related to the 2023-00252 rate case expense with the PSC.

Capital Assets and Debt Administration

Capital Assets

At December 31, 2025 and 2024, the District had $38.6 million and $37.2 million invested in a variety of capital assets, as reflected in the following tables:

(Table 3)
Capital Assets (Net of Depreciation)
as of December 31, 2025 and 2024

	2025	2024
Non-Depreciable Assets:		
Land and land rights	$ 3,157,372	$ 3,157,374
Construction in progress	275,950	157,983
Depreciable Assets:		
Plant and equipment	35,126,427	33,907,737
Total capital assets, net of depreciation	$ 38,559,749	$ 37,223,094

(Table 4)
Changes in Capital Assets
Years Ended December 31, 2025 and 2024

	2025	2024
Beginning balance	$ 37,223,093	$ 36,946,398
Additions	2,435,184	1,500,349
Retirements	(26,015)	(35,950)
Depreciation	(1,072,514)	(1,187,703)
Ending balance	$ 38,559,748	$ 37,223,094

Debt

At December 31, 2025 and 2024, the District had $11.1 million and $11.3 million, in revenue bonds outstanding. A total of $231,000 is due within the 2026 calendar year.

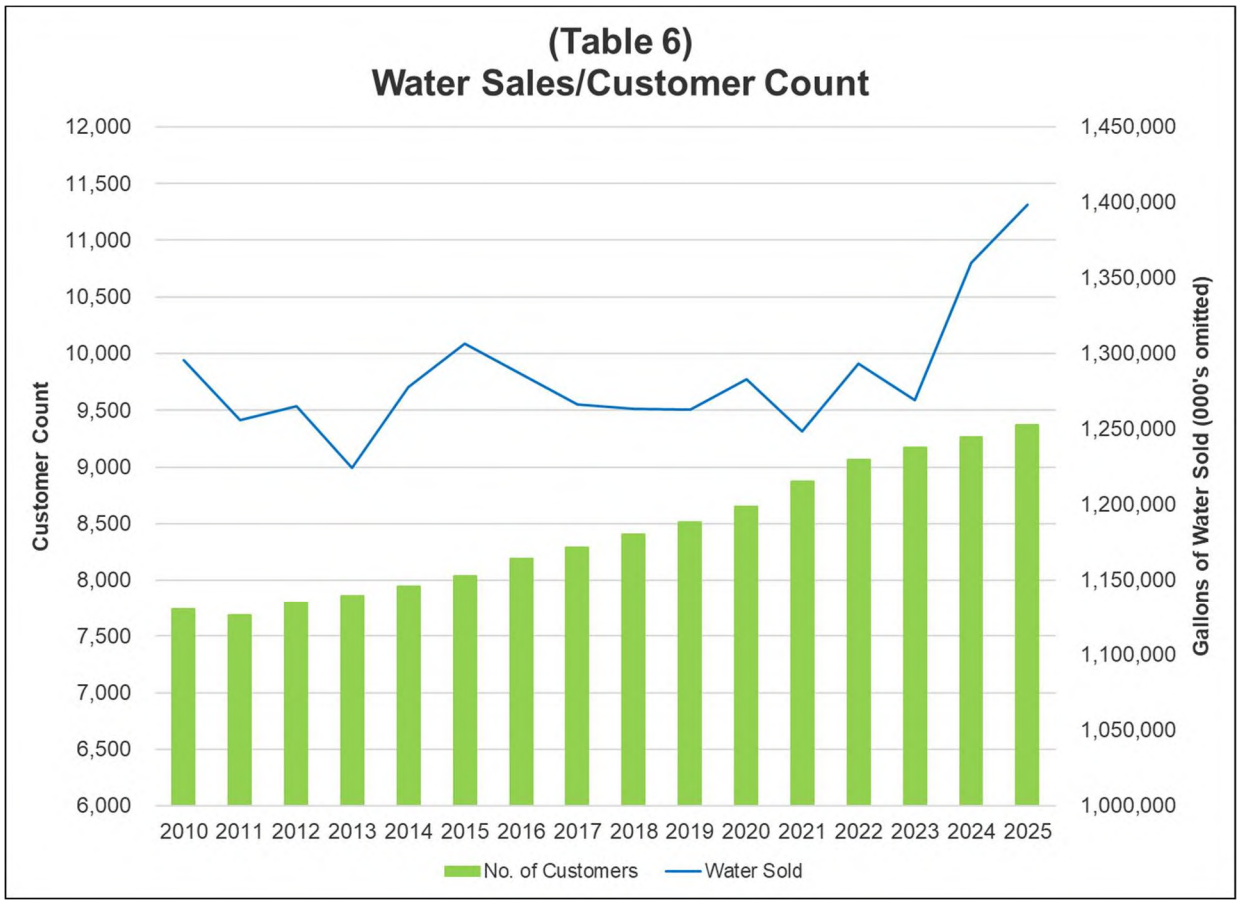
(Table 5)
Outstanding Debt
as of December 31, 2025 and 2024

	2025	2024
Revenue bonds	$ 11,156,100	$ 11,376,100
Loans	-	-
Unamortized discount	(65,913)	(68,476)
Unamortized premium	-	-
	$ 11,090,187	$ 11,307,624

District Challenges for the Future

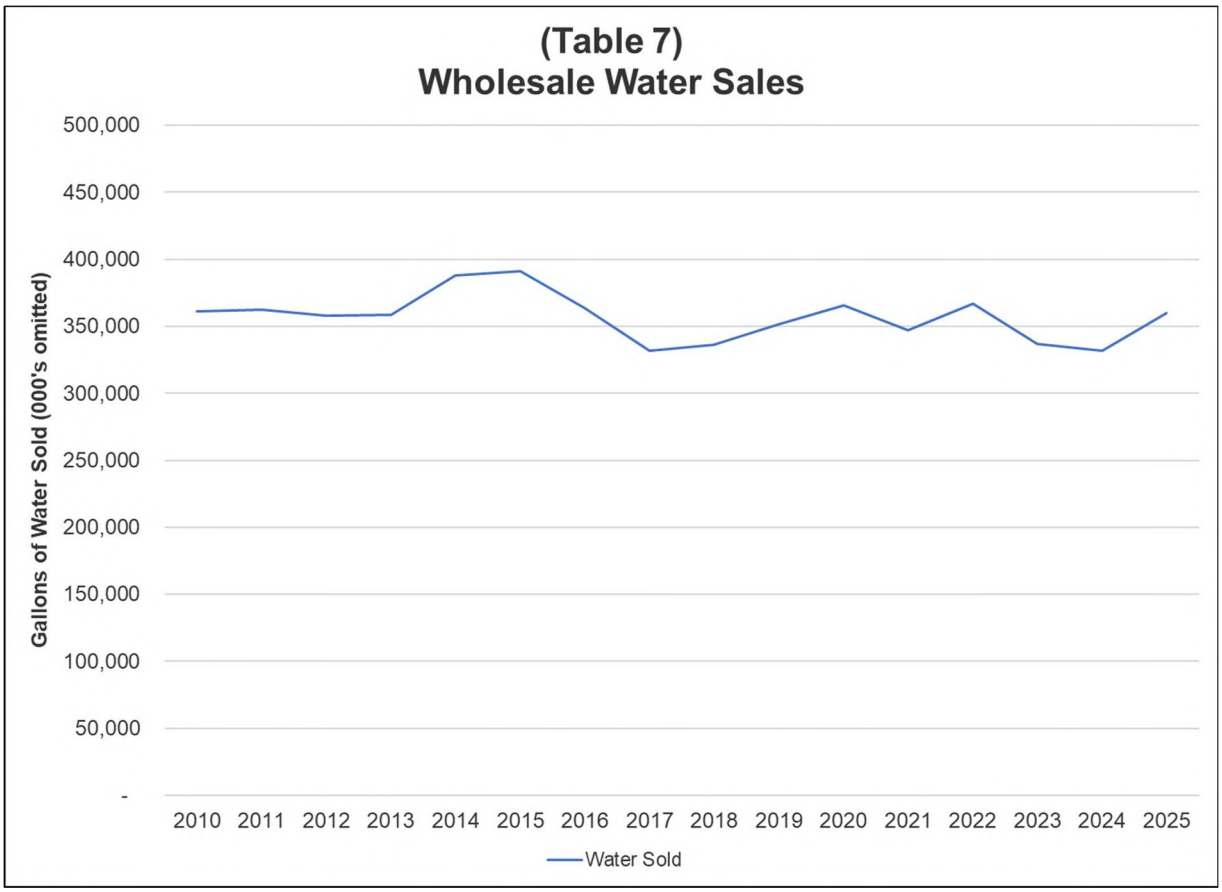
The District remains in a strong financial position. As it navigates growing customer demand, aging infrastructure, and declining water consumption, the District will rely on prudent financial planning including rate setting, cost discipline, and capital stewardship to deliver quality services. The District will also continue to monitor and adapt to evolving water quality standards to ensure ongoing compliance.

Despite the influence of economic factors and increasingly efficient water-saving fixtures, gallons of water sold increased by 103 million gallons or 8% compared to fifteen years prior (2010), driven primarily by retail water consumption. Over the same period, the District's customer count grew by 1,629, a 21% increase.



The District's largest retail customer accounted for 18% of the water sold in 2025. Over the prior eight years, this customer's purchases have fluctuated between 14% and 20% of total water sold which has a significant influence on the District's total revenue.

The District's wholesale purchases have remained relatively stable over the past fifteen years, accounting for 26% of the water sold in 2025.



Contacting the District's Financial Management

This financial report is designed to provide our customers and creditors with a general overview of the District's finances and to show the District's accountability for the money it receives and spends. If you have questions about this report or need additional financial information, contact Lacey Cunningham, Finance & Administrative Manager, P.O. Box 51, Buckner, Kentucky 40031, (502) 222-1690.

OLDHAM COUNTY WATER DISTRICT
STATEMENT OF NET POSITION
December 31, 2025

ASSETS	
Current assets	
Cash	$ 15,894,141
Customer accounts receivable, net	749,883
Other receivables	228,018
PFAS receivable - current	321,243
Lease receivable - current	91,657
Interest receivable	17,460
Prepaid exenses	26,836
Inventory	998,094
Total current assets	18,327,332
Noncurrent assets	
Restricted cash	1,197,047
Deferred rate case	36,674
PFAS receivable - noncurrent	445,658
Lease receivable - noncurrent	1,674,686
Regulatory asset - CERS pension	3,124,392
Regulatory asset - CERS OPEB	333,474
Capital assets	
Nondepreciable capital assets	3,433,322
Property, plant and equipment, net	35,126,427
Total noncurrent assets	45,371,680
Total assets	63,699,012
DEFERRED OUTFLOWS OF RESOURCES	
Deferred outflows - pension	303,475
Deferred outflows - OPEB	339,936
Total deferred outflows of resources	643,411
Total assets and deferred outflows of resources	$ 64,342,423
LIABILITIES	
Current liabilities	
Accounts payable	$ 407,936
Accrued compensated absences	209,843
Tax collections	19,076
Other collections	188,246
Accrued payroll and taxes	129,222
Other accrued expenses	36,486
Accrued interest	185,014
Current portion of bonds payable	231,000
Total current liabilities	1,406,823
Noncurrent liabilities	
Noncurrent bonds payable	10,859,187
Net pension liability	3,114,110
Net OPEB liability	53,782
Total noncurrent liabilities	14,027,079
Total liabilities	15,433,902
DEFERRED INFLOWS OF RESOURCES	
Deferred inflows - pension	313,757
Deferred inflows - OPEB	619,628
Deferred inflows - leases	1,771,480
Total deferred inflows of resources	2,704,865
NET POSITION	
Net investment in capital assets	27,227,039
Restricted for debt service	416,014
Restricted for depreciation	747,000
Restricted for deposits	34,033
Unrestricted	17,779,570
Total net position	46,203,656
Total liabilities, deferred inflows of resources and net position	$ 64,342,423

The accompanying notes are an integral
part of the financial statements.

OLDHAM COUNTY WATER DISTRICT
STATEMENT OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
for the year ended December 31, 2025

OPERATING REVENUE	
Water sales	$ 6,235,005
Other operating income	126,652
Total operating revenue	6,361,657
OPERATING EXPENSES	
Water supply	523,572
Water treatment	882,932
Transmission and distribution	1,994,933
Customer accounts	1,006,019
General and administrative	1,029,364
Depreciation	1,072,514
Total operating expenses	6,509,334
Operating income (loss)	(147,677)
Non-operating revenue (expenses)	
Interest income	581,280
Other income	357,845
PFAS settlement revenue	2,011,651
Gain (loss) on disposal of capital assets	(21,332)
Interest expense	(370,067)
Amortization of deferred rate case	(36,674)
Amortization of bond discount	(2,563)
Total non-operating revenue (expenses)	2,520,140
INCOME (LOSS) BEFORE CAPITAL CONTRIBUTIONS	2,372,463
Capital grants	303,094
Capital contributions	1,588,148
Change in net position	4,263,705
Net position, beginning of year	41,939,951
NET POSITION, END OF YEAR	$ 46,203,656

The accompanying notes are an integral part of the financial statements.

OLDHAM COUNTY WATER DISTRICT
STATEMENT OF CASH FLOWS
for the year ended December 31, 2025

CASH FLOWS FROM OPERATING ACTIVITIES	
Receipts from customers	$ 6,335,674
Payments to suppliers	(1,757,570)
Payments for employee services and benefits	(3,618,157)
Net cash provided (used) by operating activities	959,947
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES	
Principal paid on bonds	(220,000)
Interest paid on bonds	(373,745)
Purchases of capital assets	(1,099,859)
Capital contributed	391,306
Capital grants received	303,094
PFAS settlement proceeds	1,244,750
Proceeds from sale of capital assets	2,430
Net cash provided (used) by capital and related financing activities	247,976
CASH FLOWS FROM INVESTING ACTIVITIES	
Interest income	584,341
Lease income	139,405
Other income	226,338
Net cash provided (used) by investing activities	950,084
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	2,158,007
Cash and cash equivalents, beginning of year	14,933,181
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 17,091,188
Reconciliation of operating income (loss) to net cash provided (used) by operating activities:	
Operating income (loss)	$ (147,677)
Adjustments to reconcile operating income to net cash provided by operating activities:	
Depreciation	1,072,514
Changes in assets and liabilities:	
(Increase) decrease in receivables	(25,983)
(Increase) decrease in inventory	(47,979)
(Increase) decrease in prepaids	(3,318)
Increase (decrease) in accounts payable	75,677
Increase (decrease) in accrued payroll	20,885
Increase (decrease) in accrued vacation	3,749
Increase (decrease) in accrued expenses	12,079
Net cash provided by operating activities	$ 959,947
Reconciliation of total cash and cash equivalents:	
Current assets - cash and cash equivalents	$ 15,894,141
Restricted cash	1,197,047
Total cash and cash equivalents	$ 17,091,188
Supplemental disclosure of cash flow information:	
Noncash capital and related financing activities:	
Payables for capital items, net	$ 132,092

The accompanying notes are an integral part of the financial statements.

1. DESCRIPTION OF ENTITY

Brief history - The Oldham County Water District (the District) was created by the order of the county Judge/Executive of Oldham County, Kentucky, on April 16, 1979. The order approved the merger of the existing Ohio River – Oldham Water District and the Oldham County Water District No. 3. The waterworks system of the District is owned and operated by the District under the provisions of Chapters 74 and 106 and Sections 96.350 through 96.510, inclusive, of the Kentucky Revised Statutes.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The District's financial statements are prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is responsible for establishing GAAP for state and local governments through its pronouncements (Statements and Interpretations). The District follows the accounting policies and procedures set forth by the National Association of Regulatory Utility Commissioners and the guidance provided by the American Water Works Association in *Water Utility Accounting* and is regulated by the Kentucky Public Service Commission. The more significant accounting policies established in GAAP and used by the District are discussed below.

Reporting Entity

These financial statements present the District's financial activities. As defined by GASB No. 14, *The Financial Reporting Entity,* as amended by GASB No. 39, *Determining Whether Certain Organizations Are Component Units* the criteria for inclusion in the reporting entity involve those cases where the District or its officials appoint a voting majority of an organization's governing body, and is either able to impose its will on the organization or there is a potential for the organization to provide specific financial benefits to or to impose specific financial burdens on the District or the nature and significance of the relationship between the District and the organization is such that exclusion would cause the District's financial statements to be incomplete. Applying this definition, the District does not include any component units in its reporting entity.

Basis of Financial Statements

All activities of the District are accounted for within a single proprietary (enterprise) fund. The focus of proprietary fund measurement is upon determination of operating income, changes in net position, financial position, and cash flows. The GAAP applicable are those similar to businesses in the private sector. Enterprise funds are required to be used to account for operations for which a fee is charged to external users for goods or services and the activity is financed with debt that is solely secured by a pledge of the net revenues.

Basis of Accounting

Basis of accounting refers to the point at which revenues or expenses are recognized in the accounts and reported in the financial statements. It relates to the timing of the measurements made regardless of the measurement focus applied. The proprietary fund financial statements are presented on the accrual basis of accounting. Nonexchange revenues, including intergovernmental revenues and grants, are reported when all eligibility requirements have been met. Fees and charges and other exchange revenues are recognized when earned and expenses are recognized when incurred. Because the District's rates are regulated by the Kentucky Public Service Commission the District accounts for the financial effects of regulation in accordance with Governmental Accounting Standards Board (GASB) Statement No. 62, Paragraphs 476-500, Regulated Operations. Accordingly, certain costs and income may be capitalized as a regulatory asset or liability that would otherwise be charged to expense or revenues. Regulatory assets and liabilities are recorded when it is probable that future rates will permit recovery.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Cash and Cash Equivalents

The District has defined cash and cash equivalents to include cash on hand and demand deposits. The District considers all highly liquid debt instruments (including restricted assets) purchased with a maturity of three months or less to be cash equivalents.

Restricted Assets

Restricted assets consist of cash held for future repayment of customer deposits and for cash required to be set aside for future debt service and depreciation reserves as required by bond covenants.

Accounts Receivable

The allowance method is used to record uncollectible accounts. At December 31, 2025, accounts receivable was stated net of an allowance for uncollectible accounts of $26,150. The District does not believe there is any credit risk associated with these receivables due to the large customer base and small individual account balances.

Capital Assets

Capital assets and construction in progress with a life extending beyond one operating cycle are recorded at historical cost, if purchased or constructed. Assets acquired through contributions from developers or other customers are capitalized at their estimated fair market value, if available, or at engineers' estimated fair market value at the date of the contribution. Maintenance and repairs, which do not significantly extend the value or life of property, plant and equipment, are expensed as incurred. Assets are depreciated on the straight-line method. Depreciation on plant and equipment is calculated using the estimated useful lives ranging from 10 to 62.5 years.

Compensated absences

The District follows Governmental Accounting Standards Board (GASB) Statement No. 101, *Compensated Absences*. The district's policy permits employees to carry forward up to 480 hours of accrued sick leave into the next service year, with the excess paid as a lump sum. Earned but unused sick leave is not paid to employees upon termination. Employees are also permitted to carry forward up to 240 hours of accrued vacation leave into the next service year, with the excess paid as a lump sum. Upon termination of employment, earned but unused vacation time is paid as a lump sum. In accordance with GASB Statement No. 101, the district accrues compensated absences that are more likely than not to be used or paid to employees.

Defining Operating Revenues and Expenses

The District distinguishes between operating and non-operating revenue and expenses. Operating revenues and expenses consist of charges for services and the costs of providing those services, including depreciation and excluding interest cost. All other revenues and expenses are reported as non-operating.

Net Position

Net position is divided into three components:

a. **Net investment in capital assets** – consist of the historical cost of capital assets less accumulated depreciation and less any debt that remains outstanding that was used to finance those assets.

b. **Restricted net position** – consist of net position that is restricted by the District's creditors (for example, through debt covenants), by grantors (both federal, state and local) and by other contributors.

c. **Unrestricted** – all other net position is reported in this category.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Use of Restricted Resources

When an expense is incurred that can be paid using either restricted or unrestricted resources (net position), the District's policy is to first apply the expense toward restricted resources and then toward unrestricted resources.

Amortization

Bond discounts are being amortized using the interest method over the life of each respective bond issue. Expenses related to a rate case which was completed in 2024 are being amortized over three years in accordance with Kentucky Public Service Commission guidelines.

Capital Contributions

Capital contributions are recognized in the Statement of Revenues, Expenses and Changes in Net Position when earned. Contributions include capacity fees, capital grants, and other supplemental support by other utilities and industrial customers and federal, state and local grants in support of system improvements.

Long-term Obligations

Long-term obligations are reported at face value, net of applicable premiums and discounts. Premiums and discounts are deferred and amortized over the life of the bonds. Issuance costs are expensed as incurred.

Use of Estimates

Preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Pensions and OPEB

For purposes of measuring the net pension liability, net OPEB liability (asset), deferred outflows/inflows of resources, and pension and OPEB expense, information about the fiduciary net position of the County Employees Retirement System (CERS) and additions to/deductions from CERS's fiduciary net position have been determined on the same basis as they are reported by CERS except that CERS's fiscal year end is June 30. For this purpose, plan contributions are recognized as of employer payroll paid dates and benefit payments and refunds are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

The District's rates are regulated by the Kentucky Public Service Commission. In accordance with GASB Statement No. 62, Paragraphs 476-500, Regulated Operations, which requires that the effects of the rate-making process be recorded in the financial statements, the District has elected to record a regulatory asset for the net pension liability, net OPEB liability (asset), deferred outflows of resources and deferred inflows of resources related to pensions and OPEB. Accordingly, the District recognizes the actuarially determined contribution as the current year pension and OPEB expense.

Management's Review of Subsequent Events

The District has evaluated and considered the need to recognize or disclose subsequent events through March 30, 2026, which represents the date that these financial statements were available to be issued. Subsequent events past this date, as they pertain to the year ended December 31, 2025, have not been evaluated by the District.

3. CASH AND CASH EQUIVALENTS AND INVESTMENTS

KRS 66.480 authorizes the District to invest in the following, including but not limited to, obligations of the United States and of its agencies and instrumentalities, obligations and contracts for future delivery or purchase of obligations backed by the full faith and credit of the United States, obligations of any corporation of the United States government, bonds or certificates of indebtedness of this state, and certificates of deposit issued by or other interest-bearing accounts of any bank or savings and loan institution which have a physical presence in Kentucky and are insured by the Federal Deposit Insurance Corporation (FDIC) or which are collateralized, to the extent uninsured, by any obligation permitted by KRS 41.240(4). The Statute also authorizes investment in mutual funds, exchange traded funds, individual equity securities and high-quality corporate bonds that are managed by a professional investment manager and subject to additional requirements outlined in KRS 66.480. The District does not have a formal investment policy but follows Kentucky Revised Statutes for investing funds.

Custodial credit risk is the risk that, in the event of the failure of the counterparty, the District will not be able to recover the value of the investment or collateral securities that are in the possession of an outside party. In order to anticipate market changes and provide a level of security for all funds, the collateralization level shall be one hundred percent of the market value of the principal, plus accrued interest.

The District's deposits at December 31, 2025, were either entirely covered by Federal Depository Insurance or by collateral held by the custodial banks in the District's name or were invested in federal obligations. The bank balances of the District's deposits were $17,111,501 at December 31, 2025; $821,625 was covered by FDIC, $15,958,780 was covered by collateral and letters of credit held at the custodial bank in the District's name and $331,096 was invested in federal obligations.

The District has restricted cash for various purposes including debt service, future construction and customer deposits. The following schedule represents restricted cash at December 31, 2025:

Debt service fund required by bond ordinance	$ 416,014
Depreciation fund required by bond ordinance	747,000
Customer deposits	34,033
Total restricted cash	$ 1,197,047

4. CAPITAL ASSETS

A summary of capital asset activity during the year follows:

	Balance January 1, 2025	Additions	Deductions	Balance December 31, 2025
Capital assets not depreciated:				
Land and land rights	$ 3,157,374	$ -	$ -	$ 3,157,374
Construction in progress	157,983	812,068	(694,103)	275,948
Totals	3,315,357	812,068	(694,103)	3,433,322
Capital assets that are depreciated:				
Plant and equipment	56,552,613	2,317,219	(44,459)	58,825,373
Total capital assets	59,867,970	3,129,287	(738,562)	62,258,695
Less: accumulated depreciation	22,644,876	1,072,514	(18,444)	23,698,946
Capital assets, net	$ 37,223,094	$ 2,056,773	$ (720,118)	$ 38,559,749

5. LONG-TERM DEBT

The construction costs of the District's water facilities have been financed by issuance of revenue bonds authorized under Kentucky Revised Statutes. All assets of the District are pledged as collateral for these bonds. Information relating to the outstanding bond issues is summarized below:

Bond Issue	Interest Rate	Face Amount	Balance as of 12/31/2025
2010 Series A	3.75%	$ 4,243,100	$ 3,424,100
2010 Series B	3.13%	9,000,000	7,732,000
Total bonds payable			11,156,100
Bond discount			(65,913)
Total long-term debt			$ 11,090,187

	Balance December 31, 2024	Additions	Retirements	Balance December 31, 2025
Revenue bonds	$ 11,376,100	$ -	$ 220,000	$ 11,156,100
Bond discount	(68,476)	-	(2,563)	(65,913)
Net OPEB liability (asset)	(96,684)	150,466	-	53,782
Net pension liability	3,339,409	-	225,299	3,114,110
Total	$ 14,550,349	$ 150,466	$ 442,736	$ 14,258,079

Future principal and interest requirements for all long-term debt are as follows:

Year ended	Principal	Interest	Total	Interest to be paid by the Federal Government
2026	$ 231,000	$ 368,521	$ 599,521	$ 44,414
2027	242,000	360,722	602,722	43,325
2028	252,000	352,898	604,898	42,304
2029	265,000	344,055	609,055	41,002
2030	276,000	335,117	611,117	39,756
2031-2035	1,585,000	1,523,537	3,108,537	176,863
2036-2040	1,987,000	1,220,893	3,207,893	132,701
2041-2045	2,492,000	849,496	3,341,496	80,172
2046-2050	2,885,100	397,227	3,282,327	18,991
2051-2052	941,000	44,312	985,312	-
Totals	$ 11,156,100	$ 5,796,778	$ 16,952,878	$ 619,528

Bond and Interest Redemption Funds

There is to be a monthly deposit of an amount equal to 1/12 of the next ensuing principal payment due and 1/6 of the next ensuing interest payment due for the 2010 Series A and 2010 Series B bonds. The District has set aside and is reporting as restricted cash $416,014 to meet the bond and interest redemption fund requirement.

Depreciation Fund

This fund receives, on a monthly basis, $27,425 until the balance reaches $747,000. The depreciation fund was fully funded as of December 31, 2025 and the District is reporting restricted cash totaling $747,000. This fund also receives the proceeds from the sale of any property or equipment. This fund may be used to purchase new or replacement property and equipment.

6. RETIREMENT PLAN

The Oldham County Water District is a participating employer of the County Employees' Retirement System (CERS). Under the provisions of Kentucky Revised Statute 61.645, the Board of Trustees of Kentucky Public Pensions Authority administers the CERS. The plan issues publicly available financial statements which may be downloaded from the Kentucky Public Pensions Authority's website.

Plan Description – CERS is a cost-sharing multiple-employer defined benefit pension plan that covers substantially all regular full-time members employed in positions of each participating county, city, and school board, and any additional eligible local agencies electing to participate in the System. The plan provides for retirement, disability, and death benefits to plan members. Retirement benefits may be extended to beneficiaries of plan members under certain circumstances. Cost-of-living adjustments (COLA) are provided at the discretion of state legislature.

Contributions – For the year ended December 31, 2025, plan members were required to contribute 5% of wages for non-hazardous job classifications. Employees hired after September 2008 are required to contribute an additional 1% to cover the cost of medical insurance that is provided through CERS. Participating employers are required to contribute at an actuarially determined rate. Per Kentucky Revised Statute Section 78.545 (33), normal contribution and past service contribution rates shall be determined by the Board on the basis of an annual valuation last proceeding the July 1 of a new biennium. The Board may amend contribution rates as of the first day of July of the second year of a biennium, if it is determined on the basis of a subsequent actuarial valuation that amended contribution rates are necessary to satisfy requirements determined in accordance with actuarial basis adopted by the Board.

For the year ended December 31, 2025, participating employers contributed 19.71% through June 30th and 18.62% thereafter, of each non-hazardous employee's wages, which is equal to the actuarially determined rate set by the Board. The contributions are allocated to both the pension and insurance trust. The insurance trust is more fully described in Note 7. Administrative costs of insurance trust Kentucky Public Pensions Authority are financed through employer contributions and investment earnings.

Plan members who began participating on, or after, January 1, 2014, are required to contribute to the Cash Balance Plan. The Cash Balance Plan is known as a hybrid plan because it has characteristics of both a defined benefit plan and a defined contribution plan. Members in the plan contribute a set percentage of their salary each month to their own account. Plan members contribute 5% of wages to their own account and 1% to the health insurance fund. The employer contribution rate is set annually by the Board based on an actuarial valuation. The employer contributes a set percentage of each member's salary. Each month, when employer contributions are received, an employer pay credit is deposited to the member's account. For non-hazardous members, their account is credited with a 4% employer pay credit. The employer pay credit represents a portion of the employer contribution.

The District contributed $375,319 for the year ended December 31, 2025, or 100% of the required contribution for non-hazardous job classifications.

Benefits – CERS provides retirement, health insurance, death and disability benefits to Plan employees and beneficiaries. Employees are vested in the plan after five years' service.

6. RETIREMENT PLAN (CONTINUED)

For retirement purposes, employees are grouped into three tiers based on hire date:

Tier 1	Participation date	Before September 1, 2008
	Unreduced retirement	27 years service or 65 years old and 1 month of service
	Reduced retirement	At least 5 years service and 55 years old or 25 years service and any age
Tier 2	Participation date	September 1, 2008 - December 31, 2013
	Unreduced retirement	At least 5 years service and 65 years old or age 57+ and sum of service years plus age equal to 87+
	Reduced retirement	At least 10 years service and 60 years old
Tier 3	Participation date	After December 31, 2013
	Unreduced retirement	At least 5 years service and 65 years old or age 57+ and sum of service years plus age equal to 87+
	Reduced retirement	Not available

Cost of living adjustments are provided at the discretion of the General Assembly. Retirement is based on a factor of the number of years' service and hire date multiplied by the average of the highest five years' earnings. Reduced benefits are based on factors of both of these components. Participating employees become eligible to receive the health insurance benefit after at least 180 months of service. Death benefits are provided for both death after retirement and death prior to retirement. Death benefits after retirement are $5,000 in lump sum. Five years' service is required for death benefits prior to retirement and the employee must have suffered a duty-related death. The decedent's beneficiary will receive the higher of the normal death benefit and $10,000 plus 25% of the decedent's monthly final rate of pay and any dependent child will receive 10% of the decedent's monthly final rate of pay up to 40% for all dependent children. Five years' service is required for nonservice-related disability benefits.

Pension Liabilities, Expense, Deferred Outflows of Resources and Deferred Inflows of Resources – At December 31, 2025, the District reported a liability of $3,114,110 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2025, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of June 30, 2024 and was rolled forward using generally accepted actuarial procedures. The District's proportion of the net pension liability was based on a projection of the District's long-term share of contributions to the pension plan relative to the projected contributions of all participating entities, actuarially determined. At June 30, 2025, the District's proportion was 0.055963 percent, which was a increase of 0.00012 percent from its proportion measured as of June 30, 2024.

For the year ended December 31, 2025, the District recognized pension expense of $392,333. This expense was offset by recording a regulatory asset balance described further in Note 2. At December 31, 2025, the District reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual results	$ 103,239	$ -
Changes of assumptions	-	-
Net difference between projected and actual earnings on Plan investments	-	311,394
Changes in proportion and differences between District contributions and proportionate share of contributions	11,138	2,363
District contributions subsequent to the measurement date	189,098	-
Total	$ 303,475	$ 313,757

6. RETIREMENT PLAN (CONTINUED)

The $189,098 of deferred outflows of resources resulting from the District's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ending December 31, 2026. Other amounts reported as deferred outflows of resources and deferred inflows of resources as of December 31, 2025 will be recognized in pension expense as follows:

Year ending December 31,	
2026	$ 63,712
2027	$ (108,671)
2028	$ (101,187)
2029	$ (53,234)

Actuarial Assumptions – The total pension liability in the June 30, 2024, actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.50%
Salary increases	3.30% to 10.30%, varies by service
Investment rate of return	6.50%, net of Plan investment expense, including inflation

The mortality table used for active members was a Pub-2010 General Mortality table, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010. The mortality table used for healthy retired members was a system-specific mortality table based on mortality experience from 2013-2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023. The mortality table used for the disabled members was PUB-2010 Disabled Mortality table, with rates multiplied by 150% for both male and female rates, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010.

The actuarial assumption used in the June 30, 2024 valuation was based on the results of an actuarial experience study for the period July 1, 2018 - June 30, 2022. The total pension liability was rolled-forward from the valuation date (June 30, 2024) to the plan's fiscal year ending June 30, 2025.

The long-term expected rate of return was determined by using a building-block method in which best estimate ranges of expected future real rate of returns are developed for each asset class. The ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage. As of June 30, 2024, the target allocation and best estimates of nominal real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Equity	**53.00%**	
Public Equity	45.00%	4.15%
Private Equity	8.00%	7.90%
Fixed Income	**35.00%**	
Core Fixed Income	13.00%	2.70%
Specialty Credit	20.00%	3.83%
Cash	2.00%	1.25%
Inflation Protected	**12.00%**	
Real Estate	5.00%	4.75%
Real Return	7.00%	5.20%
Total	**100.00%**	**4.24%**
Long term inflation assumption		**2.50%**
Expected nominal return for portfolio		**6.74%**

6. RETIREMENT PLAN (CONTINUED)

Discount Rate – The discount rate used to measure the total pension liability was 6.50 percent. The projection of cash flows used to determine the discount rate assumed that local employers would contribute the actuarially determined contribution rate of projected compensation over the remaining closed 24-year amortization period of the unfunded actuarial accrued liability. The actuarial determined contribution rate is adjusted to reflect the phase in of anticipated gains on actuarial value of assets over the first four years of the projection period. The discount rate determination does not use a municipal bond rate.

Sensitivity of the District's Proportionate Share of the Net Pension Liability to Changes in the Discount Rate – The following presents the District's proportionate share of the net pension liability calculated using the discount rate of 6.50 percent, as well as what the District's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (5.50 percent) or 1-percentage-point higher (7.50 percent) than the current rate:

	Discount rate		District's proportionate share of net pension liability
1% decrease	5.50%	$	4,117,063
Current discount rate	6.50%	$	3,114,110
1% increase	7.50%	$	2,286,652

Payable to the Pension Plan – At December 31, 2025, the District reported a payable of $36,260 for the outstanding amount of contributions to the pension plan required for the year then ended. The payable includes both the pension and insurance contribution allocation.

7. POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB)

Plan Description – As more fully described in Note 6, the District participates in the County Employees' Retirement System (CERS). CERS is a cost-sharing multiple-employer defined benefit pension plan that covers substantially all regular full-time members employed in positions of each participating county, city, and school board, and any additional eligible local agencies electing to participate in the System. In addition to retirement benefits, the plan provides for health insurance benefits to plan members (other postemployment benefits or OPEB). OPEB benefits may be extended to beneficiaries of plan members under certain circumstances.

Contributions – As more fully described in Note 6, plan members contribute to CERS for non-hazardous job classifications. For the year ended December 31, 2025, the employer's contribution was 0.00% through June 30th and 0.00% thereafter to the insurance trust for non-hazardous job classifications. Employees hired after September 1, 2008, are required to contribute an additional 1% to cover the cost of medical insurance that is provided through CERS. Participating employers are required to contribute at an actuarially determined rate. Per Kentucky Revised Statute Section 78.545(33), normal contribution and past service contribution rates shall be determined by the Board on the basis of an annual valuation last proceeding the July 1 of a new biennium. The Board may amend contribution rates as of the first day of July of the second year of a biennium, if it is determined on the basis of a subsequent actuarial valuation that amended contribution rates are necessary to satisfy requirements determined in accordance with actuarial basis adopted by the Board. The contribution rates are equal to the actuarially determined rate set by the Board. Administrative costs of Kentucky Public Pensions Authority are financed through employer contributions and investment earnings.

For the year ended December 31, 2025, the District contributed $0, or 100% of the required contribution for non-hazardous job classifications.

7. POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (CONTINUED)

Benefits – CERS provides health insurance benefits to Plan employees and beneficiaries.

For retirement purposes, employees are grouped into three tiers based on hire date:

Tier 1	Participation date	Before July 1, 2003
	Insurance eligibility	10 years of service credit required
	Benefit	Set percentage of single coverage health insurance based on service credit accrued at retirement
Tier 1	Participation date	Before September 1, 2008 but after July 1, 2003
	Insurance eligibility	10 years of service credit required
	Benefit	Set dollar amount based on service credit accrued, increased annually
Tier 2	Participation date	After September 1, 2008 and before December 31, 2013
	Insurance eligibility	15 years of service credit required
	Benefit	Set dollar amount based on service credit accrued, increased annually
Tier 3	Participation date	After December 31, 2013
	Insurance eligibility	15 years of service credit required
	Benefit	Set dollar amount based on service credit accrued, increased annually

OPEB Liability, Expense, Deferred Outflows of Resources and Deferred Inflows of Resources – At December 31, 2025, the District reported an liability for its proportionate share of the net OPEB liability of $53,782. The net OPEB liability was measured as of June 30, 2025, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of June 30, 2024 and was rolled forward using generally accepted actuarial procedures. The District's proportion of the net OPEB liability was based on a projection of the District's long-term share of contributions to the OPEB plan relative to the projected contributions of all participating entities, actuarially determined. The District's proportionate share at June 30, 2025 was 0.055997 percent, which was a increase of 0.000103 percent from its proportion measured as of June 30, 2024.

For the year ended December 31, 2025, the District recognized OPEB expense of ($136,299). This expense was offset by recording a regulatory asset balance described further in Note 2. At December 31, 2025, the District reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual results	$ 174,434	$ 462,368
Changes of assumptions	35,871	30,795
Net difference between projected and actual earnings on Plan investments	-	121,800
Changes in proportion and differences between District contributions and proportionate share of contributions	97,645	4,665
District contributions subsequent to the measurement date	31,986	-
Total	$ 339,936	$ 619,628

7. POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (CONTINUED)

The $31,986 of deferred outflows of resources resulting from the District's contributions subsequent to the measurement date will be recognized as a reduction of the net OPEB liability in the year ending December 31, 2026. This includes an adjustment of $31,986 related to the implicit subsidy, which is required to be recognized as a deferred outflow of resources. Other amounts reported as deferred outflows of resources and deferred inflows of resources will be recognized in expense as follows:

Year ending December 31,	
2026	$ (171,184)
2027	$ (155,023)
2028	$ 9,249
2029	$ 5,280

Actuarial Assumptions – The total OPEB liability in the June 30, 2024, actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Non-hazardous	
Inflation	2.50%
Salary increases	3.30 to 10.30%, varies by service
Investment rate or return	6.50%, net of Plan investment expense, including inflation
Healthcare Trend Rates	
Pre – 65	Initial trend starting at 7.10% at January 1, 2026, and gradually decreasing to an ultimate trend rate of 4.25% over a period of 4 years.
Post – 65	Initial trend starting at 8.50% at January 1, 2026, then gradually decreasing to an ultimate trend rate of 4.25% over a period of 10 years.

The mortality table used for active members was a Pub-2010 General Mortality table, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010. The mortality table used for healthy retired members was a system-specific mortality table based on mortality experience from 2013-2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023. The mortality table used for the disabled members was PUB-2010 Disabled Mortality table, with rates multiplied by 150% for both male and female rates, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010.

The actuarial assumption used in the June 30, 2024 valuation was based on the results of an actuarial experience study for the period July 1, 2018 - June 30, 2022. The total OPEB liability was rolled-forward from the valuation date (June 30, 2024) to the plan's fiscal year ending June 30, 2025.

The long-term expected rate of return was determined by using a building-block method in which best estimate ranges of expected future real rate of returns are developed for each asset class. The ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage.

7. POSTEMPLOYMENT BENEFITS OTHER THAN PENSIONS (OPEB) (CONTINUED)

The target allocation and best estimates of arithmetic real rate of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Equity	**53.00%**	
Public Equity	45.00%	4.15%
Private Equity	8.00%	7.90%
Fixed Income	**35.00%**	
Core Fixed Income	13.00%	2.70%
Specialty Credit	20.00%	3.83%
Cash	2.00%	1.25%
Inflation Protected	**12.00%**	
Real Estate	5.00%	4.75%
Real Return	7.00%	5.20%
Total	**100.00%**	**4.24%**
Long term inflation assumption		**2.50%**
Expected nominal return for portfolio		**6.74%**

Discount Rate – The discount rate used to measure the total OPEB liability as of June 30, 2024 was 6.26% for non-hazardous classifications. The projection of cash flows used to determine the discount rate assumed that local employers would contribute the actuarially determined contribution rate of projected compensation over the remaining 22-year amortization period of the unfunded actuarial accrued liability. As of June 30, 2025, the discount rate determination used an expected rate of return of 6.50%, and a municipal bond rate of 5.20%, as reported in Bond Buyer's "20-Bond GO Index". However, the cost associated with the implicit employer subsidy was not included in the calculation of the System's actuarial determined contributions, and any cost associated with the implicit subsidy will not be paid out of the System's trusts. Therefore, the municipal bond rate was applied to future expected benefit payments associated with the implicit subsidy.

Sensitivity of the District's Proportionate Share of the Net OPEB Liability (asset) to Changes in the Discount Rate – The following presents the District's proportionate share of the net OPEB liability (Asset) calculated using the discount rate as well as what the District's proportionate share of the net OPEB liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

	Discount rate	Proportionate share of net OPEB liability (asset)
1% decrease	5.26%	$ 322,708
Current discount rate	6.26%	$ 53,782
1% increase	7.26%	$ (172,560)

Sensitivity of the District's Proportionate Share of the Net OPEB Liability (Asset) to Changes in the Healthcare Cost Trend Rate – The following presents the District's proportionate share of the net OPEB liability (asset) calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rates:

	Proportionate share of net OPEB liability (asset)
1% decrease	$ (124,290)
Current trend rate	$ 53,782
1% increase	$ 262,240

OPEB plan fiduciary net position – Detailed information about the OPEB plan's fiduciary net position is available in the separately issued financial report.

8. LEASE RECEIVABLE AND DEFERRED INFLOWS OF RESOURCES

As of January 1, 2022, the District has implemented Governmental Accounting Standards Board (GASB) Statement No. 87, *Leases*, which requires recognition of certain assets that previously were classified as operating leases and recognized as revenue based on the payment provisions of the contract. The district has lease agreements with Sprint, T-Mobile and AT&T, and recognizes both a lease receivable and a deferred inflow of resources related to space on its water towers totaling $1,766,344. Each lease agreement has renewal options at the option of the lessee which the District anticipates will be exercised. The District has calculated the present value of future lease payments based on incremental borrowing rates between 2% and 2.75%, depending on the date of inception of the lease. The present value of expected future minimum leases payments are as follows:

Calendar Year	Principal	Interest	Total
2026	$ 91,657	$ 46,083	$ 137,740
2027	102,741	43,870	146,611
2028	108,942	41,515	150,457
2029	97,337	39,013	136,350
2030	51,597	36,765	88,362
2031-2035	215,361	167,878	383,239
2036-2040	151,980	143,413	295,393
2041-2045	223,688	118,755	342,443
2046-2050	313,717	83,268	396,985
2051-2055	409,323	34,225	443,548
Total	$ 1,766,343	$ 754,785	$ 2,521,128

9. CAPITAL CONTRIBUTIONS

The following schedule details the sources of capital contributions for the years ended December 31, 2025 and 2024:

	2025	2024
Developers	$ 1,203,233	$ 1,074,736
Customers	384,915	274,856
Total	$ 1,588,148	$ 1,349,592

10. RISK MANAGEMENT

The District is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; and natural disasters. The District was insured for workers' compensation, general liability and automobile liability coverage under a retrospectively rated commercial policy. Any settlements did not exceed coverage for each of the past three years.

11. PFAS SETTLEMENT

The District elected to participate in national class-action settlements related to per- and polyfluoroalkyl substances (PFAS) contamination involving certain chemical manufacturers. The District recognized revenue related to these settlements of $2,011,651, during the year ended December 31, 2025. As of December 31, 2025, the District has recognized a receivable of $766,901, for the portion of this revenue that was not collected during the year. The District understands that the receivable will be collected over a period of multiple years. The District intends to use these funds to offset the costs of PFAS remediation, though they are not legally restricted for that use.

12. CONTINGENCIES

The District is subject to various other legal actions in various stages of litigation, the outcome of which is not determinable at this time. Management of the District and its legal counsel do not anticipate that there will be any material effect on the basic financial statements as a result of the cases presently in progress.

Under COBRA, employers are mandated to notify terminated employees of available continuing insurance coverage. Failure to comply with this requirement may put the District at risk for a substantial loss.

REQUIRED SUPPLEMENTARY INFORMATION

OLDHAM COUNTY WATER DISTRICT
REQUIRED SUPPLEMENTARY SCHEDULE
PROPORTIONATE SHARE OF THE NET PENSION LIABILITY
Last Ten Years

Reporting Year End (Measurement Date)	**December 31, 2016 (June 30, 2016)**	**December 31, 2017 (June 30, 2017)**	**December 31, 2018 (June 30, 2018)**	**December 31, 2019 (June 30, 2019)**	**December 31, 2020 (June 30, 2020)**	**December 31, 2021 (June 30, 2021)**	**December 31, 2022 (June 30, 2022)**	**December 31, 2023 (June 30, 2023)**	**December 31, 2024 (June 30, 2024)**	**December 31, 2025 (June 30, 2025)**
District's proportion of the net pension liability	0.034998%	0.035037%	0.036242%	0.039290%	0.043067%	0.041950%	0.044076%	0.054889%	0.055839%	0.055963%
District's proportionate share of the net pension liability (asset)	$ 1,722,114	$ 2,050,823	$ 2,207,248	$ 2,763,283	$ 3,303,127	$ 2,674,642	$ 3,186,260	$ 3,521,957	$ 3,339,409	$ 3,114,110
District's covered employee payroll	$ 824,735	$ 869,703	$ 908,025	$ 945,862	$ 1,130,932	$ 1,156,977	$ 1,138,005	$ 1,442,883	$ 1,688,326	$ 1,869,078
District's share of the net pension liability (asset) as a percentage of its covered employee payroll	208.81%	235.81%	243.08%	292.14%	292.07%	231.18%	279.99%	244.09%	197.79%	166.61%
Plan fiduciary net position as a percentage of the total pension liability	55.50%	53.30%	53.54%	50.45%	47.81%	57.33%	52.42%	57.48%	61.61%	65.34%

OLDHAM COUNTY WATER DISTRICT
REQUIRED SUPPLEMENTARY SCHEDULE
CONTRIBUTIONS - PENSION
Last Ten Calendar Years

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Contractually required employer contribution	$ 109,171	$ 127,995	$ 145,797	$ 201,182	$ 223,297	$ 231,420	$ 323,697	$ 395,437	$ 404,213	$ 375,319
Contributions relative to contractually required employer contribution	109,171	127,995	145,797	201,182	223,297	231,420	323,697	395,437	404,213	375,319
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
District's covered employee payroll	$ 824,784	$ 899,670	$ 945,862	$ 1,130,932	$ 1,156,977	$ 1,138,005	$ 1,442,883	$ 1,688,326	$ 1,869,078	$ 1,964,103
Employer contributions as a percentage of covered-employee payroll	13.24%	14.23%	15.41%	17.79%	19.30%	20.34%	22.43%	23.42%	21.63%	19.11%

OLDHAM COUNTY WATER DISTRICT
REQUIRED SUPPLEMENTARY SCHEDULE
PROPORTIONATE SHARE OF THE NET OPEB LIABILITY (ASSET)
Last Eight Years

Reporting Year End (Measurement Date)	**December 31, 2018 (June 30, 2018)**	**December 31, 2019 (June 30, 2019)**	**December 31, 2020 (June 30, 2020)**	**December 31, 2021 (June 30, 2021)**	**December 31, 2022 (June 30, 2022)**	**December 31, 2023 (June 30, 2023)**	**December 31, 2024 (June 30, 2024)**	**December 31, 2025 (June 30, 2025)**
District's proportion of the net OPEB liability (asset)	0.0362610%	0.039280%	0.043054%	0.041940%	0.044068%	0.054886%	0.055894%	0.055997%
District's proportionate share of the net OPEB liability (asset)	$ 643,807	$ 660,672	$ 1,039,623	$ 802,920	$ 869,688	$ (75,779)	$ 96,684	$ 53,782
District's covered employee payroll	$ 908,025	$ 945,862	$ 1,130,932	$ 1,156,977	$ 1,138,005	$ 1,442,883	$ 1,688,326	$ 1,869,078
District's share of the net OPEB liability (asset) as a percentage of its covered employee payroll	70.90%	69.85%	91.93%	69.40%	76.42%	-5.25%	5.73%	2.88%
Plan fiduciary net position as a percentage of the total OPEB liability	57.62%	60.44%	51.67%	62.91%	60.95%	104.23%	104.89%	97.66%

Notes:
The above schedule will present 10 years of historical data, once available.

OLDHAM COUNTY WATER DISTRICT
REQUIRED SUPPLEMENTARY SCHEDULE
CONTRIBUTIONS - OPEB
Last Eight Calendar Years

	2018	2019	2020	2021	2022	2023	2024	2025
Contractually required employer contribution	$ 47,299	$ 56,606	$ 55,072	$ 50,824	$ 54,012	$ 27,781	$ -	$ -
Contributions relative to contractually required employer contribution	47,299	56,606	55,072	50,824	54,012	27,781	-	-
Contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
District's covered employee payroll	$ 945,862	$ 1,130,932	$ 1,156,977	$ 1,138,005	$ 1,442,883	$ 1,688,326	$ 1,869,078	$ 1,964,103
Employer contributions as a percentage of covered-employee payroll	5.00%	5.01%	4.76%	4.47%	3.74%	1.65%	0.00%	0.00%

Notes:
The above schedule will present 10 years of historical data, once available.

1. GENERAL INFORMATION

Contributions

Contractually required employer contributions reported on the Schedule of Contributions - Pensions exclude the portion of contributions paid to CERS but allocated to the insurance fund of the CERS. The insurance contributions are reported on the Schedule of Contributions - OPEB.

Payroll

The District's covered payroll reported on the Schedule of Proportionate Share of the Net Pension Liability and the Schedule of Proportionate Share of the Net OPEB Liability / Asset is for the corresponding measurement date of the net liability and asset and differs from the District's calendar year payroll as reported on the Schedule of Contributions for Pension and OPEB.

2. CHANGES OF ASSUMPTIONS

December 31, 2025 – Pension and OPEB

There were no changes in assumptions in the valuation of pension. The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2025, for OPEB:

- The municipal bond rate used in the discount rate determination increased from 3.97% to 5.20%.

December 31, 2024 – Pension and OPEB

There were no changes in assumptions in the valuation of pension. The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2024, for OPEB:

- The initial healthcare trend rate for pre-65 was changed from 6.80% to 7.10%. The initial healthcare trend rate for post-65 was changed from 8.50% to 8.00%.

December 31, 2023 – Pension and OPEB

The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2023, for pension:

- The rate of inflation was increased from 2.30% to 2.50%.
- The salary productivity assumption was reduced by .20%, resulting in no change in the salary increase assumption for long-service employees of 3.30% in the non-hazardous funds.
- The individual rates of salary increases were increased during the select period for the CERS funds.
- The investment return assumption was increased from 6.25% to 6.50%.
- The Tier 3 cash balance interest crediting rate assumption was increased to 6.75% for the CERS pension funds.

2. CHANGES OF ASSUMPTIONS (CONTINUED)

December 31, 2023 – Pension and OPEB (CONTINUED)

The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2023, for OPEB:

- The rate of inflation was increased from 2.30% to 2.50%.
- The salary productivity assumption was reduced by .20%, resulting in no change in the salary increase assumption for long-service employees of 3.30% in the non-hazardous funds.
- The individual rates of salary increases were increased during the select period for the CERS funds.
- The investment return assumption was increased from 6.25% to 6.50%.
- The initial healthcare trend rate for pre-65 was changed from 6.20% to 6.80%. The initial healthcare trend rate for post-65 was changed from 9.00% to 8.50%.

December 31, 2022 – Pension and OPEB

There were no changes in assumptions in the valuation of pension. The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2022, for OPEB:

- The initial healthcare trend rate for pre-65 was changed from 6.30% to 6.20%. The initial healthcare trend rate for post-65 was changed from 6.30% to 9.00%.

December 31, 2021 – Pension and OPEB

There were no changes in assumptions in the valuation of pension. The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2021, for OPEB:

- The initial healthcare trend rate for pre-65 was changed from 6.40% to 6.30%. The initial healthcare trend rate for post-65 was changed from 2.90% to 6.30%.

December 31, 2020 – Pension and OPEB

There were no changes in assumptions in the valuation of pension. The following change in assumptions was made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2020, for OPEB:

- The initial healthcare trend rate for pre-65 was changed from 7% to 6.40%. The initial healthcare trend rate for post-65 was changed from 5% to 2.90%.

December 31, 2019 – Pension and OPEB

The following changes in assumptions were made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2019, for both pension and OPEB:

- The assumed rate of salary increases was increased from 3.05% to 3.3% to 10.3% on average for non-hazardous and 3.05% to 3.55% to 19.05% on average for hazardous.

2. CHANGES OF ASSUMPTIONS (CONTINUED)

December 31, 2018 – Pension and OPEB

There were no changes in assumptions made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2018 for either pension or OPEB.

December 31, 2017 – Pension and OPEB

The following changes in assumptions were made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2017, for both pension and OPEB:

- The assumed rate of return was decreased from 7.5% to 6.25%.
- The assumed rate of inflation was reduced from 3.25% to 2.3%.
- Payroll growth assumption was reduced from 4% to 2%

December 31, 2016 – Pension and OPEB

There were no changes in assumptions made by the Kentucky Legislature and reflected in the valuation performed as of June 30, 2016 for either pension or OPEB.

RFH
CPAs | Consultants

Members American Institute of Certified Public Accountants
and Kentucky Society of Certified Public Accountants

INDEPENDENT AUDITORS' REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

Board of Commissioners
Oldham County Water District
La Grange, Kentucky

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Oldham County Water District (the District) as of and for the year ended December 31, 2025, and the related notes to the financial statements, which collectively comprise the District's basic financial statements, and have issued our report thereon dated March 30, 2026.

Report on Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the District's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the District's internal control. Accordingly, we do not express an opinion on the effectiveness of the District's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements, on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that were not identified.

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether the District's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

RFH

RFH, PLLC
Lexington, Kentucky
March 30, 2026

Exhibit 20

Tina Frederick

From: Smith, Roger (DLG) <roger.smith@ky.gov>
Sent: Friday, October 30, 2026 12:25 PM
To: Tina Frederick
Cc: Damon R. Talley
Subject: Re: Oldham County Water District Notification of Intent to Finance

ⓘ External email ❯

Notification received. An acknowledgement letter will be forthcoming. Thank you.

From: Tina Frederick <tina.frederick@skofirm.com>
Sent: Friday, October 30, 2026 12:13 PM
To: Smith, Roger (DLG) <roger.smith@ky.gov>
Cc: Damon R. Talley <Damon.Talley@skofirm.com>
Subject: Oldham County Water District Notification of Intent to Finance

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Mr. Smith

Stoll Keenon Ogden PLLC represents Oldham County Water District ("the District") In its efforts to secure funding for certain water improvements.

The Kentucky Infrastructure Authority has agreed to loan the District approximately $6,129.061 in the form of a Fund C loan to be repaid over a 20-year period. This loan will be evidenced by an Assistance Agreement between the two entities. In accordance with KRS 65.117(1). The District hereby gives notice of its intent to execute such an Assistance Agreement and enter a lang-term debt obligation with KIA. Attached is a completed Notification of Intent to Finance Form containing specific information regarding the proposed long-term debt obligation with KIA.

I respectfully request that receipt of this electronic message and its attachment be acknowledged by separate email message.

Please contact me if there are any questions regarding the proposed long-term debt obligation.

Sincerely,
Tina C. Frederick
Counsel for Oldham County Water District

Tina Frederick
Attorney

tina.frederick@skofirm.com
Direct: 859.231.3951
Main: 859.231.3000

Stoll Keenon Ogden PLLC
300 W. Vine St., Suite 2100
Lexington, KY 40507

Louisville | Lexington | Indianapolis | Evansville | Frankfort | Jeffersonville

Stoll Keenon Ogden PLLC is Mansfield Certified. skofirm.com

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If you are a client of this firm, we respectfully remind you that to avoid waiver of the attorney-client privilege, you should not send, forward, or show this e-mail or attachments to anyone else. Thank you.

Page 1

NOTIFICATION OF INTENT TO FINANCE AND APPLICATION FOR DEBT APPROVAL

Form # SLDO-1
Revised 1/1/2011

For DLG staff use only:

File #_____
Received_____

Completion and delivery of this form to the address below shall satisfy the requirements of KRS 65.117, which prohibits any city, county, urban-county, consolidated local government, charter county, special district, or taxing district from entering into any financing obligation of any nature, except leases under $200,000, without first notifying the state local debt officer in writing. This form shall also serve as application for approval of debt issuance when applicable. An electronic version of the form is available at www.dlg.ky.gov.

✓	**Type of debt to be issued (must check one):**	**SLDO Approval Required**	**Complete Sections**
☐	Short Term Borrowing - KRS 65.7701 et seq.	No	A, B, C
☐	Lease from $200,000 - $500,000 - KRS 65.940 et seq.	No	A, B, D
☐	Lease exceeding $500,000 - KRS 65.940 et seq.	Yes (Counties only)	A, B, D
☐	General Obligation Bond - KRS Chapter 66	Yes (Counties only)	A, B, E
☐	Public Project Rev. Bond - KRS Chapter 58	No	A, B, E
☐	Public Project Rev. Bond w/Lease - KRS 66.310(2)	Yes (Counties only)	A, B, D, E
☐	Industrial Revenue Bond - KRS Chapter 103	Yes (All Borrowers)	A, B, F
☐	Other Bonds (True Revenue, Utility Assessment, TIF)	No	A, B, E
X	Assistance Agreement/Long Term Borrowing		

Section A - Borrower Information

Agency Name **Oldham County Water District**	
Governing Body **Oldham County Water District Board of Commissioners**	
Street Address **2160 Spencer Court, LaGrange, KY 40031**	
P.O. Box # **51**	City **Buckner**
County **Oldham**	Zip **40010**
Authorized Official **Russell D. Rose, CEO**	

Section B - Terms of Financial Obligation

Please provide all relevant information. Fields in **bold** are mandatory.

PrincipleAmount: $6,129,061	**Date of Issue:** June 1, 2027
Maturity Date(s): June 1, 2047	**Payment Schedule:** (must attach schedule)
Term: 20 years	**Number of Renewal Periods:**
Interest Rate(s): 2.75%	**Type of Interest (fixed or variable):** Fixed
Retirement Method: Annual Principal Payment & Semi-Annual Interest Payment	
Lender's Name: Kentucky Infrastructure Authority	
Lender's Address: 100 Airport Road, Frankfort, Kentucky 40601	
Right of Termination: None	
Termination Penalties: None	
Prepayment Provisions: District may prepay without penalty	
Trustee or Paying Agent:	
AOC Funded Percentage (0.00):	

NOTIFICATION OF INTENT TO FINANCE AND APPLICATION FOR DEBT APPROVAL

Form # SLDO-1
Revised 1/1/2011

Section C - Note (Loan) Information/Documentation

Purpose - Briefly explain the documented need that necessitates this note (loan) and the public purpose it is intended to address. (Attach additional information if necessary):

The loan funds will be used to construct approximately 16,600 LF of 12-inch HDPE water main along US 42 from KY 1694 to KY 393 in Oldham County to improve redundancy, increase pressure, and provide for fire protection in the area.

See Attached KIA Staff Analysis.

Pledge of Taxes/Description:

None

Pledge of Revenue/Description:

Revenues from water operations pledged as security; rates will produce 1.2x debt service plus O&M expenses

Pledge of Project Revenues (Attach documentation which substantiates the revenue projections):

See attached KIA Staff Analysis

Have bids been sought by the local governments to determine the financial and programmatic competitiveness of the note (loan) proposal? ◯ Yes ◉ No

If No, explain what steps were taken to ensure adequate competition.

Loan was secured from Kentucky Infrastructure Authority through the Kentucky State Revolving Fund. As an entity of the Commonwealth, KIA's rates are below market

Required Attachments

1. Certification from local government attesting to the ability to meet additional financial commitments necessitated by the note and statement as to taxes and revenues to be collected during the term of the note.

Section D - Lease Information/Documentation

Describe the real or personal property to be acquired or constructed:

Not Applicable. No lease will be executed

Type of Lease : ☐ General Obligation ☐ Revenue

Is Lease Annually Renewable? ◯ Yes ◯ No

Does Agency seek approval without a hearing? ◯ Yes ◯ No Justification: ☐ Revenue ☐ Refunding

If yes, must attach certification from counsel regarding county obligation.

Does this lease refund a prior lease? ◯ Yes ◯ No

If yes, please state the name, date and principal amount of original issue(s) being refunded:

Required Attachments (If lease requires SLDO approval)

1. Minutes from the local public hearing
2. Affidavit of publication of SLDO hearing (if hearing is required) and newspaper advertisement tear sheet
3. Copy of lease
4. Executed copy of ordinance/resolution of fiscal court authorizing the lease
5. Certification from local government attesting to the ability to meet additional financial commitments necessitated by the lease and statement as to taxes and revenues to be collected during the term of the lease.

Please continue to the next page

NOTIFICATION OF INTENT TO FINANCE AND APPLICATION FOR DEBT APPROVAL

Form # SLDO-1
Revised 1/1/2011

Section E - Bond Information/Documentation

Please provide all relevant information. Fields in **bold** are mandatory

Describe the purpose of the bond:

Not applicable. No bonds will be issued.

Bond Counsel:

Counsel Address:

Financial Advisor:

Advisor Address:

Bond Series:

Call Date:

Does this bond refund a prior bond? ◯ Yes ◯ No

If yes, please state the name, date and principal amount of original issue(s) being refunded:

Required Attachments (If SLDO Approval is Required)

1. Minutes from the local public hearing
2. Affidavit of publication of SLDO hearing and newspaper advertisement tear sheet
3. Executed copy of ordinance/resolution of fiscal court authorizing financial plan for the issuance of the bonds
4. Proposed plan of financing
5. Preliminary official statement (if applicable)
6. Sources and uses table

Additional Required Attachments for KRS Chapter 103 Bonds

1. Documentation in an appropriate form substantiating the project□s eligibility under KRS 103.2101(1)(a)-(e).
2. If the project requires approval of the reduction in property taxes, attach any documentation provided to agency responsible for approval.

******

By signing below, the Authorized Official certifies that the foregoing is true and accurate to the best of his or her knowledge.

Name (please print) Russell D. Rose	Date: 10-30-2026
Title: Chief Executive Officer	Signature: Russell D. Rose

Mail to:
Department for Local Government
Attn: State Local Debt Officer
1024 Capital Center Drive, Suite 340
Frankfort, KY 40601

Fax to: 502-573-3712

KENTUCKY INFRASTRUCTURE AUTHORITY
ANTICIPATED REPAYMENT SCHEDULE
LOAN #C25-001
OLDHAM COUNTY WATER DISTRICT

2.75% Interest
$200,232.18 P & I Calculation

Payment Date	Principal Due	Interest Due	Interest Rate	Principal & Interest	Servicing Fee	Credit Due	Total Payment	Principal Balance	R & M Reserve	Total Reserve
								$6,129,061.00		
12/01/27	$115,957.59	$84,274.59	2.75%	$200,232.18	$7,661.33	$0.00	$207,893.51	$6,013,103.41	$15,300.00	$15,300.00
06/01/28	$117,552.01	$82,680.17	2.75%	$200,232.18	$7,516.38	$0.00	$207,748.56	$5,895,551.40	$0.00	$15,300.00
12/01/28	$119,168.35	$81,063.83	2.75%	$200,232.18	$7,369.44	$0.00	$207,601.62	$5,776,383.05	$15,300.00	$30,600.00
06/01/29	$120,806.91	$79,425.27	2.75%	$200,232.18	$7,220.48	$0.00	$207,452.66	$5,655,576.14	$0.00	$30,600.00
12/01/29	$122,468.01	$77,764.17	2.75%	$200,232.18	$7,069.47	$0.00	$207,301.65	$5,533,108.13	$15,300.00	$45,900.00
06/01/30	$124,151.94	$76,080.24	2.75%	$200,232.18	$6,916.39	$0.00	$207,148.57	$5,408,956.19	$0.00	$45,900.00
12/01/30	$125,859.03	$74,373.15	2.75%	$200,232.18	$6,761.20	$0.00	$206,993.38	$5,283,097.16	$15,300.00	$61,200.00
06/01/31	$127,589.59	$72,642.59	2.75%	$200,232.18	$6,603.87	$0.00	$206,836.05	$5,155,507.57	$0.00	$61,200.00
12/01/31	$129,343.95	$70,888.23	2.75%	$200,232.18	$6,444.38	$0.00	$206,676.56	$5,026,163.62	$15,300.00	$76,500.00
06/01/32	$131,122.43	$69,109.75	2.75%	$200,232.18	$6,282.70	$0.00	$206,514.88	$4,895,041.19	$0.00	$76,500.00
12/01/32	$132,925.36	$67,306.82	2.75%	$200,232.18	$6,118.80	$0.00	$206,350.98	$4,762,115.83	$15,300.00	$91,800.00
06/01/33	$134,753.09	$65,479.09	2.75%	$200,232.18	$5,952.64	$0.00	$206,184.82	$4,627,362.74	$0.00	$91,800.00
12/01/33	$136,605.94	$63,626.24	2.75%	$200,232.18	$5,784.20	$0.00	$206,016.38	$4,490,756.80	$15,300.00	$107,100.00
06/01/34	$138,484.27	$61,747.91	2.75%	$200,232.18	$5,613.45	$0.00	$205,845.63	$4,352,272.53	$0.00	$107,100.00
12/01/34	$140,388.43	$59,843.75	2.75%	$200,232.18	$5,440.34	$0.00	$205,672.52	$4,211,884.10	$15,300.00	$122,400.00
06/01/35	$142,318.77	$57,913.41	2.75%	$200,232.18	$5,264.86	$0.00	$205,497.04	$4,069,565.33	$0.00	$122,400.00
12/01/35	$144,275.66	$55,956.52	2.75%	$200,232.18	$5,086.96	$0.00	$205,319.14	$3,925,289.67	$15,300.00	$137,700.00
06/01/36	$146,259.45	$53,972.73	2.75%	$200,232.18	$4,906.61	$0.00	$205,138.79	$3,779,030.22	$0.00	$137,700.00
12/01/36	$148,270.51	$51,961.67	2.75%	$200,232.18	$4,723.79	$0.00	$204,955.97	$3,630,759.71	$15,300.00	$153,000.00
06/01/37	$150,309.23	$49,922.95	2.75%	$200,232.18	$4,538.45	$0.00	$204,770.63	$3,480,450.48	$0.00	$153,000.00
12/01/37	$152,375.99	$47,856.19	2.75%	$200,232.18	$4,350.56	$0.00	$204,582.74	$3,328,074.49	$15,300.00	$168,300.00
06/01/38	$154,471.16	$45,761.02	2.75%	$200,232.18	$4,160.09	$0.00	$204,392.27	$3,173,603.33	$0.00	$168,300.00
12/01/38	$156,595.13	$43,637.05	2.75%	$200,232.18	$3,967.00	$0.00	$204,199.18	$3,017,008.20	$15,300.00	$183,600.00
06/01/39	$158,748.32	$41,483.86	2.75%	$200,232.18	$3,771.26	$0.00	$204,003.44	$2,858,259.88	$0.00	$183,600.00
12/01/39	$160,931.11	$39,301.07	2.75%	$200,232.18	$3,572.82	$0.00	$203,805.00	$2,697,328.77	$15,300.00	$198,900.00
06/01/40	$163,143.91	$37,088.27	2.75%	$200,232.18	$3,371.66	$0.00	$203,603.84	$2,534,184.86	$0.00	$198,900.00
12/01/40	$165,387.14	$34,845.04	2.75%	$200,232.18	$3,167.73	$0.00	$203,399.91	$2,368,797.72	$15,300.00	$214,200.00
06/01/41	$167,661.21	$32,570.97	2.75%	$200,232.18	$2,961.00	$0.00	$203,193.18	$2,201,136.51	$0.00	$214,200.00
12/01/41	$169,966.55	$30,265.63	2.75%	$200,232.18	$2,751.42	$0.00	$202,983.60	$2,031,169.96	$15,300.00	$229,500.00
06/01/42	$172,303.59	$27,928.59	2.75%	$200,232.18	$2,538.96	$0.00	$202,771.14	$1,858,866.37	$0.00	$229,500.00
12/01/42	$174,672.77	$25,559.41	2.75%	$200,232.18	$2,323.58	$0.00	$202,555.76	$1,684,193.60	$15,300.00	$244,800.00
06/01/43	$177,074.52	$23,157.66	2.75%	$200,232.18	$2,105.24	$0.00	$202,337.42	$1,507,119.08	$0.00	$244,800.00
12/01/43	$179,509.29	$20,722.89	2.75%	$200,232.18	$1,883.90	$0.00	$202,116.08	$1,327,609.79	$15,300.00	$260,100.00
06/01/44	$181,977.55	$18,254.63	2.75%	$200,232.18	$1,659.51	$0.00	$201,891.69	$1,145,632.24	$0.00	$260,100.00
12/01/44	$184,479.74	$15,752.44	2.75%	$200,232.18	$1,432.04	$0.00	$201,664.22	$961,152.50	$15,300.00	$275,400.00
06/01/45	$187,016.33	$13,215.85	2.75%	$200,232.18	$1,201.44	$0.00	$201,433.62	$774,136.17	$0.00	$275,400.00
12/01/45	$189,587.81	$10,644.37	2.75%	$200,232.18	$967.67	$0.00	$201,199.85	$584,548.36	$15,300.00	$290,700.00
06/01/46	$192,194.64	$8,037.54	2.75%	$200,232.18	$730.69	$0.00	$200,962.87	$392,353.72	$0.00	$290,700.00
12/01/46	$194,837.32	$5,394.86	2.75%	$200,232.18	$490.44	$0.00	$200,722.62	$197,516.40	$15,300.00	$306,000.00
06/01/47	$197,516.40	$2,715.78	2.75%	$200,232.18	$246.90	$0.00	$200,479.08	$0.00	$0.00	$306,000.00
Totals	**$6,129,061.00**	**$1,880,226.20**		**$8,009,287.20**	**$170,929.65**	**$0.00**	**$8,180,216.85**		**$306,000.00**	

Created by KIA on 10/30/2026

EXECUTIVE SUMMARY
KENTUCKY INFRASTRUCTURE AUTHORITY
FUND C, GOVERNMENTAL AGENCIES FUND
REVOLVING LOAN FUND

Reviewer	Jeremy Skinner
Date	April 3, 2025
KIA Loan Number	C25-001
WRIS Number	WX21185064

BORROWER: OLDHAM COUNTY WATER DISTRICT
OLDHAM COUNTY

BRIEF DESCRIPTION

Oldham County Water District is requesting a Fund C loan in the amount of $6,129,061 for the US 42 West Improvements from KY-393 to KY-1694 project. This project includes the installation of approximately 22,300 linear feet of 12-inch water line along US-42 from KY-393 to KY-1694. This project will increase water pressure and flow to an underserved portion of the District's customer base. The new water line will also provide a looped connection to multiple points in this part of the District's distribution system, strengthening the existing infrastructure and maintaining water supply in the event of a break.

PROJECT FINANCING		PROJECT BUDGET	
Fund C Loan	$6,129,061	Administrative Expenses	$10,000
		Legal Expenses	15,000
		Land, Easements	265,000
		Planning	12,600
		Eng - Design / Const	282,661
		Eng - Insp	150,000
		Eng - Other	56,000
		Construction	4,106,000
		Contingency	1,231,800
TOTAL	$6,129,061	TOTAL	$6,129,061

REPAYMENT	Rate	2.75%	Est. Annual Payment	$415,787
	Term	20 Years	1st Payment	6 Mo. after first draw
PROFESSIONAL SERVICES	Engineer	GRW Engineers, Inc.		
	Bond Counsel	Dinsmore & Shohl, LLP		
PROJECT SCHEDULE	Bid Opening	Aug-25		
	Construction Start	Nov-25		
	Construction Stop	Oct-26		
DEBT PER CUSTOMER	Existing	$1,221		
	Proposed	$1,835		
OTHER DEBT		See Attached		

RESIDENTIAL RATES		Users	Avg. Bill	
	Current	9,259	$24.92	(for 4,000 gallons)
	Additional	0	$24.92	(for 4,000 gallons)

REGIONAL COORDINATION: This project is consistent with regional planning recommendations.

CASHFLOW	Cash Flow Before Debt Service	Debt Service	Cash Flow After Debt Service	Coverage Ratio
Audited 2022	1,463,870	767,839	696,031	1.9
Audited 2023	1,232,242	589,849	642,393	2.1
Audited (DRAFT) 2024	1,690,336	591,942	1,098,394	2.9
Projected 2025	1,703,954	595,951	1,108,003	2.9
Projected 2026	1,535,374	599,521	935,853	2.6

OLDHAM COUNTY WATER DISTRICT

FINANCIAL SUMMARY (DECEMBER YEAR END)

	Audited 2022	Audited 2023	Audited (DRAFT) 2024	Projected 2025	Projected 2026	Projected 2027	Projected 2028	Projected 2029
Balance Sheet								
Assets								
Current Assets	6,200,846	14,658,229	15,821,103	16,048,128	16,248,007	16,334,768	16,377,172	16,393,932
Other Assets	50,326,721	43,880,347	43,632,657	45,568,794	50,426,538	49,263,995	48,032,266	46,687,606
Total	56,527,567	58,538,576	59,453,760	61,616,921	66,674,545	65,598,763	64,409,438	63,081,538
Liabilities & Equity								
Current Liabilities	869,488	750,307	966,327	981,360	1,302,913	1,317,113	1,334,413	1,349,713
Long Term Liabilities	16,630,092	17,369,993	16,547,482	17,730,859	21,689,571	21,036,978	20,366,701	19,698,625
Total Liabilities	17,499,580	18,120,300	17,513,809	18,712,219	22,992,484	22,354,091	21,701,114	21,048,338
Net Assets	39,027,987	40,418,276	41,939,951	42,904,702	43,682,061	43,244,672	42,708,324	42,033,200
Cash Flow								
Revenues	5,200,444	5,133,820	5,922,405	6,130,110	6,180,887	6,232,172	6,283,970	6,336,286
Operating Expenses	4,152,622	4,770,957	5,134,056	5,261,732	5,393,239	5,543,991	5,683,506	5,827,207
Other Income	416,048	869,379	901,987	835,577	747,726	699,211	656,241	599,879
Cash Flow Before Debt Service	1,463,870	1,232,242	1,690,336	1,703,954	1,535,374	1,387,392	1,256,705	1,108,957
Debt Service								
Existing Debt Service	767,839	589,849	591,942	595,951	599,521	602,722	604,898	609,055
Proposed KIA Loan	0	0	0	0	0	415,787	415,787	415,787
Total Debt Service	767,839	589,849	591,942	595,951	599,521	1,018,509	1,020,685	1,024,842
Cash Flow After Debt Service	696,031	642,393	1,098,394	1,108,003	935,853	368,883	236,020	84,115
Ratios								
Current Ratio	7.1	19.5	16.4	16.4	12.5	12.4	12.3	12.1
Debt to Equity	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Days Sales in Accounts Receivable	45.9	48.5	59.2	59.2	59.2	59.2	59.2	59.2
Months Operating Expenses in Unrestricted Cash	14.1	32.7	32.1	31.9	31.5	30.9	30.2	29.5
Debt Coverage Ratio	1.9	2.1	2.9	2.9	2.6	1.4	1.2	1.1

Reviewer: Jeremy Skinner
Date: April 3, 2025
Loan Number: C25-001

KENTUCKY INFRASTRUCTURE AUTHORITY
GOVERNMENTAL AGENCIES LOAN FUND (FUND C)
OLDHAM COUNTY WATER DISTRICT, OLDHAM COUNTY
PROJECT REVIEW
WX21185064

I. PROJECT DESCRIPTION

Oldham County Water District is requesting a Fund C loan in the amount of $6,129,061 for the US 42 West Improvements from KY-393 to KY-1694 project. This project includes the installation of approximately 22,300 linear feet of 12-inch water line along US 42 from KY-393 to KY-1694. This project will increase water pressure and flow to an underserved portion of the District's customer base. The new water line will also provide a looped connection to multiple points in this part of the District's distribution system, strengthening the existing infrastructure and maintaining water supply in the event of a break.

This project is one phase of a larger project intended to provide redundancy and improve the water pressure and flow in this part of the county. A second phase of the project, which includes the installation of water line from KY-1694 to South Buckeye Lane, will be funded with previously awarded Cleaner Water Program Grants.

Oldham County Water District serves 8,576 residential customers and 682 commercial and industrial customers. The District also sells water to the LaGrange Utilities Commission.

II. PROJECT BUDGET

	Total
Administrative Expenses	$10,000
Legal Expenses	15,000
Land, Easements	265,000
Planning	12,600
Engineering Fees – Design	226,129
Engineering Fees – Construction	56,532
Engineering Fees – Inspection	150,000
Engineering Fees – Other	56,000
Construction	4,106,000
Contingency	1,231,800
Total	**$6,129,061**

III. PROJECT FUNDING

	Amount	%
Fund C Loan	$6,129,061	100.0%
Total	**$6,129,061**	**100.0%**

IV. KIA DEBT SERVICE

Construction Loan	$6,129,061
Less: Principal Forgiveness	0
Amortized Loan Amount	$6,129,061
Interest Rate	2.75%
Loan Term (Years)	20
Estimated Annual Debt Service	$400,464
Administrative Fee (0.20%)	15,323
Total Estimated Annual Debt Service	**$415,787**

V. PROJECT SCHEDULE

Bid Opening:	August 2025
Construction Start:	November 2025
Construction Stop:	October 2026

VI. RATE STRUCTURE

A. Customers

Customers	Current
Residential	8,576
Commercial	682
Wholesale	1
Total	9,259

B. Rates

Water - 5/8" Meter Rates	Current	Prior
Date of Last Rate Increase	6/18/2024	12/9/2009
Minimum Charge	$8.64	$8.84
Volumetric Retail Rate (per gallon)	0.00407	0.0037
Cost for 4,000 gallons	$24.92	$23.64
Increase %	5.4%	
Affordability Index (Rate/MHI)	0.3%	0.2%

Water – 3/4" Meter Rates	Current	Prior
Date of Last Rate Increase	6/18/2024	12/9/2009
Minimum Charge	$13.02	$9.73
Volumetric Retail Rate (per gallon)	0.00407	0.0037
Cost for 4,000 gallons	$29.30	$24.53
Increase %	19.4%	
Affordability Index (Rate/MHI)	0.3%	0.3%

Water – Wholesale	Current	Prior
Date of Last Rate Increase	6/18/2024	9/28/2018
Volumetric Retail Rate (per gallon)	0.00268	0.002
Increase %	34.0%	

VII. DEMOGRAPHICS

Based on current Census data from the American Community Survey 5-Year Estimate 2018-2022, the Utility's service area population is 18,569 with a Median Household Income (MHI) of $113,804. The MHI for the Commonwealth is $60,183. The loan will qualify for a 2.75% interest rate.

VIII. FINANCIAL ANALYSIS

Financial information was obtained from the audited financial statements for the years ended December 31, 2022, through December 31, 2024. The audited financial statement for the year ended December 31, 2024, was in a draft form as of the date of this analysis. The District does not anticipate any material changes in the financial information prior to the draft being finalized. The non-cash impacts of GASB 68 – Accounting and Financial Reporting for Pensions and GASB 75 – Accounting and Financial Reporting for Other Postemployment Benefit have been removed from the operating expenses. Percentage references in the History section below are based on whole dollar amounts and not the rounded amounts presented.

HISTORY

Total water revenues increased nearly 14 percent from $5.20 million in 2022 to $5.92 million in 2024 due to adjustments to the District's retail and wholesale water rates and, to a lesser extent, steady increases in retail water sales. Operating expenses increased 16.4 percent in 2023 and 9.6 percent in 2024 due to inflation-related price increases as well as increased employee wages. In addition to operating revenues, the District earns stable and consistent non-operating revenues in the form of income from cellular carriers leasing space to mount antennas on the District's water towers and in the form of fees from local sewer and sanitation districts outsourcing their billing to the District. The District's existing debt consists of revenue bonds with a year-end

2024 balance of $11.38 million. The debt service coverage ratio was 1.9, 2.1, and 2.9 for 2022, 2023, and 2024, respectively.

The balance sheet reflects a current ratio of 16.4, a debt-to-equity ratio of 0.4, 59.2 days of sales in accounts receivable, and 32.1 months of operating expenses in unrestricted cash.

PROJECTIONS

Projections are based on the following assumptions:

1) Retail water and wholesale revenues will increase 2 percent and 17 percent, respectively, in 2025 due to rate increases previously approved by the Public Service Commission.
2) Retail water revenues will increase 1 percent annually starting in 2026 based on historical year-to-year increases.
3) Wholesale water revenues will remain unchanged following the 2025 increase based on historical wholesale sales data.
4) Operating expenses will increase 3 percent annually due to inflation and general expense increases.
5) The District's debt service coverage ratio is 1.4 in 2027 when principal and interest repayments commence.

Based on the pro forma assumptions, the utility shows adequate cash flow to repay the KIA Fund C loan.

The ENTITY is regulated by the Public Service Commission (PSC) and will need to apply to the PSC, pursuant to KRS 278.300, for debt authorization for the $6,129,061 loan and must receive a Certificate of Public Convenience and Necessity, pursuant to KRS 278.020.

REPLACEMENT RESERVE

The replacement reserve will be 5% ($306,000 total) of the final amount borrowed to be funded annually ($15,300 yearly) each December 1 for 20 years and maintained for the life of the loan.

IX. DEBT OBLIGATIONS

	Outstanding	Maturity
Revenue Bonds – Series 2010A	$ 3,501,100	2049
Revenue Bonds – Series 2010B	7,875,000	2052
Total	**$ 11,376,100**	

X. CONTACTS

Legal Applicant	
Name	Oldham County Water District
Address	2160 Spencer Court LaGrange, KY 40031
County	Oldham
Authorized Official	Russ Rose
Phone	(502) 222-1690
Email	rrose@oldhamcountywaterky.gov

Project Contact - Applicant	
Name	Shanna Stone
Organization	Engineering Manager
Address	2160 Spencer Court LaGrange, KY 40031
Phone	(502) 222-1690
Email	sstone@oldhamcountywaterky.gov

Project Administrator	
Name	Justin Carter
Organization	Kentucky Regional Planning & Development Agency (KIPDA)
Address	11520 Commonwealth Dr. Louisville, KY 40299
Phone	(502) 266-6084
Email	justin.carter@kipda.org

Consulting Engineer	
Name	Nicholas Gunselman
Firm	GRW Engineers, Inc.
Address	10350 Ormsby Park Place, Ste 101 Louisville, KY 40223
Phone	(502) 489-8484
Email	ngunselman@grwinc.com

XI. RECOMMENDATIONS

KIA staff recommends approval of the loan with the standard conditions.

Exhibit 21

Detailed Estimate of Acquired Property Classified According To The Uniform System of Accounts for Class A/B Water Districts and Associations

Oldham County Water District
U.S. 42 Water Main Extension from KY 1694 to KY 393

Account No.	Account Description	Estimate
331	Transmission and Distribution Mains	$5,978,895.76
335	Hydrants	$ 150,165.24
	TOTAL	**$6,129,061.00**