

ADDENDUM NO. 1
TO
PROCUREMENT AND CONTRACTING REQUIREMENTS
FOR
Elwood Water System Improvements
FOR
City of Elwood
Issue Date: March 30th, 2026

BIDS ARE DUE BY
Monday April 6th, 2026
06:00 PM (Local Time)
Attn. Allison Roby, Clerk Treasurer, City of Elwood –
1505 S B STREET, ELWOOD, INDIANA 46036

This addendum consists of three (3) pages and the following attachment:

Attachment No. 1: Pre-Bid Conference Meeting Minutes and Sign-In Sheet

The following, as additions to and modifications in the Bidding Requirements and Contract Documents, will be included in, and become a part of the **Elwood Water System Improvements**. This Addendum forms a part of the Contract Documents. Bidders are, therefore, instructed to take the following into account in rendering any Bid for this work. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

CHANGES TO PRIOR ADDENDA: (N/A)

CHANGES TO PROCUREMENT REQUIREMENTS: (N/A)

CHANGES TO CONTRACTING REQUIREMENTS: (N/A)

CHANGES TO SPECIFICATIONS:

1. Updated bid form to include alternate for PVC C-900 Certa-Lok pipe material (**Attachment No. 3**).
2. Updated contract items to include alternate for PVC C-900 Certa-Lok pipe material (**Attachment No.3**).
3. Updated specification 33 14 13 public water utility piping to include alternate for PVC C-900 Certa-Lok pipe material (**Attachment No. 3**).
4. Updated specification 33 05 05.31 Hydrostatic Testing to include testing for PVC C-900 Certa-Lok pipe material (**Attachment No.3**).

CHANGES TO DRAWINGS: (N/A)

CHANGES TO MISCELLANEOUS DOCUMENTS:

1. Included as an attachment to this addendum (**Attachment No. 1**) is the Pre-Bid Conference Meeting Minutes and Sign-In Sheet.
2. Included as an attachment to this addendum (**Attachment No. 2**) is the IDEM Construction Permit.

SUBMITTED QUESTIONS/REQUESTS & RESPONSES:

I. Pre-Bid Meeting Questions

- a. Q: Are we to expect wet tap connections on this project?
 - i. A: Yes.
- b. Q: What is the pipe material for the water main?
 - i. A: As noted on the plans, the direction is for bidders to use HDPE.
- c. Q: What happens if we encounter lead pipe when doing reconnections? Do we need to replace up to the property owner? Who will handle the disinfection/testing?
 - i. A: City and Engineer will review in detail and prepare a response as part of the addendum, but at this time no lead service line replacement is planned for this project.

II. Emailed Questions

1. Q: Is the contractor to hydrotest and disinfect the line?
 - A. Yes.
2. Q: Are all materials to be provided by the contractor?
 - A. Yes.
3. Q: The drawings show a 3-inch carrier pipe ran through a 10-inch casing pipe. Can the casing be downsized?
 - A. Yes.
4. Q: Does the contractor have the discretion to take out fittings where they see fit?
 - A. *The awarded contractor will be able to discuss this further during a preconstruction meeting.*
5. Q: The meter pits appear to be located directly in the path of the new main. If we bore under them, they will fill with slurry and require new pit replacement. Would you consider moving the installation path under the sidewalk instead?
 - A. *Final adjustments to the watermain can be assessed with the Engineer and City representatives on a case-by-case basis once a bidder is selected. Please follow the documents as they are currently prepared to finalize bid packages.*
6. Q: To address the Mayor's concerns regarding street and driveway blockage, we note that HDPE fusion requires 400 feet to 500 feet sections. Would using C-900 Certa-Lok be an acceptable alternative to limit blockages to 100 feet sections?
 - A. *After review by the Engineer and City Representatives, an alternate will be added to the bid documents to allow for the use of C-900 Certa-Lok and modified documents are included with this addendum.*
7. Q: Regarding the two new 3-inch lines currently shown with end caps, would you consider installing yard hydrants for flushing instead?
 - A. *No flushing hydrants to be installed at the cul-de-sacs and end of the 3-inch lines.*

8. Q: For the cut and caps, if a line cannot be shut down for capping, should we plan to install inserta-valves?
 - A. *As noted on the plans, live taps are expected so plan accordingly.*
9. Q: Will exploratory excavation be required to identify existing lead or galvanized service lines?
 - A. *No exploratory excavation required.*
10. Q: What is the required protocol if lead or galvanized services are encountered?
 - A. *The Contractor is to replace and reconnect the service following the information noted on the plans and note where lead/copper/ GRR was encountered on the as-built plans and inform the City.*
11. Q: Could you provide the current Bidders List?
 - A. *Note that this list is not a plan holders lister but rather a list representing the bidders that have been in contact with the Engineer pertaining to this project.*
12. Q: Do you have a project estimate available?
 - A. *Engineer's estimate is in the range of \$1.5 million to \$1.8 million.*
13. Q: Does the City provide a designated dump site for this project?
 - A. *No dump site will be provided by the city.*
14. Q: Has the new fiber optic company already installed lines in this neighborhood?
 - A. *It is unclear if the utility (Metronet) installed fiber optics at all homes in the project area, but Metronet has been on site within a year installing new lines in the project area.*
15. Q: In the part of the project that goes down the alley to maintain the required separation rule, will this be moved or encased as the sewer is dead center of the alley?
 - A. *As noted on the plans, sections that do not maintain 10 feet of horizontal separation from outside of sewers to outside of water main, 8 feet of horizontal separation from outside of structures to outside of water mains, or 18 inches of vertical separation between outside of sewers and outside of water mains are shown to have a casing pipe.*
16. Q: Will there be any jack and bore of steel casing pipe?
 - A. *There will be casing pipes to protect the water main along sections that are too close to existing utilities. There is no jack and bore in this project.*

+ + **END OF ADDENDUM** + +

PLEASE ACKNOWLEDGE THIS ADDENDUM IN THE BID FORM YOU SUBMIT.



Certified: _____

Engineer

Date: 03/30/2026

**ATTACHMENT NO. 1:
PRE-BID CONFERENCE
MEETING MINUTES**



PRE-BID MEETING MINUTES

Client: City of Elwood, Indiana

Project Name: Elwood Water System Improvements

Project ID: 400-6313

Meeting Location: Elwood Municipal Center

Date: March 18th, 2026

Goals

- Introductions
- Scope of Work
- Document Availability
- Contract Milestones
- Addenda
- Special Considerations
- General Questions/Discussion

Introductions

- City of Elwood
 - *Larry Scholl*
 - *Christy Basham*
 - *Lisa Hobbs*
 - *Cody Landrum*
 - *Mayor Todd Jones*
 - *Allison Roby (Virtual)*
- DCCM
 - *Ricardo Paredes*
 - *Christian Charlson*
 - *Aaron Crow (Virtual)*
- Kleinpeter Consulting Group
 - *Justin Kleinpeter*
- Reedy Financial Group
 - *Katelyn Shafer (Virtual)*
- Contractors Present
 - *Corbin Stahl (F.A. Wilhelm)*
 - *Chad Shuey (F.A. Wilhelm)*
 - *Andrew Morsaw (KMA Dirt Works)*
 - *Bill Watson (Watson Excavating)*
 - *Jerry Watson (Drystar Drilling)*
 - *Aaron Anderson (Culy Contracting)*
- Sign-in Sheet (*Attached*)

Scope of Work

- 4,700 feet of 6-inch water main
- 800 feet of 3-inch water main
- New fire hydrants and valves
- Primarily installed through directional drilling

Document Availability

- DCCM Online Plan Room
 - Electronic documents can be downloaded for free from: <https://dccm.com/public-documents/>

Milestone	Date
Pre-bid Meeting	March 18 th , 2026
Last Day for Questions	March 30 th , 2026
Final Addendum	April 1st, 2026
Open Bids	April 6th, 2026
Anticipated Notice to Proceed	July 2026

Bid Overview

- Bids Due – **April 6th, 2026 @ 6PM**
 - Bid Location – Sealed bids submitted to the attention of City of Elwood Clerk Treasurer Allison Roby.
 - *Allison Roby to extend office hours that day so bids can be dropped off up until 6PM.*
 - Bid Opening will occur at 6:00 PM during the Elwood Board of Works & Public Safety
- Contract
 - Lump Sum
- Documents due at Bid
 - Completed Bid Form – Section 00 41 13
 - Required Bid Security
 - List of Proposed:
 - Subcontractors
 - Suppliers
 - List of Project References
 - Bidder’s state or contractor license number
 - Acknowledgement of Addendum(s)
 - Contractor’s Bid for Public Work – Form 96
 - E-Verify Affidavit

Contract Milestones

- Substantial Completion – 180 days
- Final Completion – 210 days
- Liquidated Damages: \$1,500 per day for missing Substantial Completion. \$1500 per day for missing Final Completion.

Addenda

- All questions to be sent in writing to Ricardo Paredes no later than Monday March 30th, 2026:
 - Email: rparedes@dccm.com
- Addendum No. 1
 - Issued April 1st, 2026.
 - Updates
 - Any Clarifications on Plans as discussed today
 - Q/As
 - Meeting Minutes

General Questions/Discussion

- Funding by open market.
- Waiting for IDEM permit to be issued this week.
- Utility locations will need to be confirmed in the field. Utility coordination will have to be performed especially with work in the alley.
- Need to ensure that access is maintained and roads are not closed.
 - *The City of Elwood stated that roads should always remain open due to the lack of access in the neighborhood. There are no alleys or other ways to reach the residences if the road is closed.*
- Coordination will have to happen with the homeowner at 1403 Madison Road, Elwood, IN 46036 (James H & Loretta K Dodd).
- Ensure there is a good pre-construction video to ensure that restoration, including ADA ramps, is back to existing conditions.
- *All contractors, including subcontractors, need to register with the City of Elwood. This can be done through their cloud application on their website, but payment cannot be made online. Payment will need to be brought to the City Municipal Building.*
- *Reedy Financial Group is open to talking about specific financial questions if there are any.*
- *Q: What if lead service lines are found during construction, what is the plan to handle that?*
 - *A: Contractors are to replace and reconnect the service following the information noted on the plans and note where lead/copper/GRR was encountered on the as-builts and inform the City.*



Pre-Bid Conference Guide

**For Construction Projects
funded wholly or partially by the
Community Development Block Grant
Program.**

Grant Services Division
One North Capitol, Suite 600
Indianapolis, Indiana 46204

800-824-2476

Revised November 2023

PRE-BID CONFERENCE GUIDE

GENERAL INFORMATION

- The Grantee must receive a “Release of Funds” letter from OCRA before awarding any construction contracts.
- Prior to contract award, prime contractors must be actively registered in SAM.gov. Alternatively, provide documentation from SAM.gov that registration has been initiated. A copy of the applicable wage decision and the Federal Labor Standards Provisions (HUD-4010) must be physically attached to the contract that the grantee signs with the Prime contractor. The HUD-4010 must be included with all subcontractor contracts.
- The principal contractor (prime or general contractor) is responsible for the full compliance of all employers (the contractor, subcontractors, and any lower-tier subcontractors) with labor standards provisions applicable to the project. If the contractor or any subcontractor fails to comply with all applicable regulations, funds shall be withheld from the prime contractor until all requirements have been met.
- The Build America Buy America Act applies to all infrastructure projects. Under the Buy America Preference, the selected contractor is responsible to procure iron and steel, construction and manufacture materials produced in the United States.
- This project is subject to all federal and state laws, regulations and guidelines pertaining to public works projects in Indiana.

LABOR STANDARDS

1. The grantee may not enter into a contract with any contractor or subcontractor that has been debarred, suspended or is otherwise ineligible to participate in federally funded contracts or programs. The Grant Administrator must verify the eligibility status of all contractors before work is performed on this project. Any contract awarded to a prime contractor or subcontractor that is found to be ineligible for award will be terminated immediately. *HUD Handbook 1344.1 REV-3, (Ch. 5-5).*

Workers must receive hourly fringe benefits and/or a cash equivalent for all hours worked, including overtime. For workers that perform work in excess of 40 hours, all contractors and subcontractors must pay workers time and one half of the base wage rates listed on the wage decision for all hours worked over 40. Fringe benefits are to be paid straight time.

2. The Copeland Anti-Kickback Act makes it a Federal crime for contractors and subcontractors to coerce or intimidate any laborer or mechanic to relinquish or give up or pay back any of their wages earned on this project. This Act also requires the submission of weekly certified payroll reports (CPR) and signed statements of compliance and regulated permissible payroll deductions (Contractors Guide to Prevailing Wage Requirements, Section 1-1).
3. Payroll records must be kept for at least three years after grant closeout.
4. Payments made by a contractor to an employee must be verifiable. Payments may not be made with an I.O.U., equipment, or any other form of barter.
5. All contractors and subcontractors must submit signed weekly certified payroll reports (CPR) to the Grantee through the Grant Administrator within seven days after regular payment date of the payroll period. Certified payroll reports will be labeled with “initial” and “final” as appropriate. Best practice: label each certified payroll report in succession.
6. No contractor or subcontractor shall employ workers on this project under the age of 16.
7. Contractors and subcontractors are not permitted to make payroll deductions which are contrary to state and federal law.

DAVIS-BACON REQUIREMENTS

Wages/Worker Classifications

All contractors and subcontractors must pay their workers no less than the hourly wages listed on federal wage determination for each classification of work performed on this project. In addition, if the applicable wage determination contains an hourly fringe benefit amount, the worker must receive benefits equal to that amount or a cash equivalent. All workers must be paid, in full, at least once a week. These requirements apply to salaried workers employed on this project engaged in physical or manual construction labor. It is the responsibility of the general contractor to clearly communicate all labor standards and Davis-Bacon requirements to all subcontractors employed on this project. All workers must be paid at an hourly rate for the type of work performed.

Only the classifications listed in the applicable wage determination or apprentices may be used on this project. Helpers or trainees may not perform work or services on this project. Laborers are not permitted to perform any skilled work which falls under the classification of another trade. For example, a laborer may not perform any electrical, carpentry, plumbing, sheet metal, etc. work on this project. If an employee performs more than one classification per week on this project, that employee should be listed twice showing the division of work on separate lines of the payroll.

All contractors and subcontractors having questions regarding the classification of workers shall direct their inquiries to the Grant Administrator.

Fringe Benefits

Contractors and subcontractors must submit documentation to the Grantee through the Grant Administrator to verify the type and the amounts paid into a bona fide fringe benefit program. The following are examples of bona fide fringe benefit plans:

- 1) Health, life, dental, vision or other similar insurance premiums paid by the employer;
- 2) Pension or retirement contributions *made by the employer* into a plan recognized by the Internal Revenue Service;
- 3) Expenses of certain recognized training programs;
- 4) Vacation and holiday pay may be considered as long as the employee would receive any unused amounts at termination of employment.

NOTE: Payroll deductions required by law (e.g., social security, worker's compensation, unemployment insurance, Federal/State/Local taxes, etc.) are not considered fringe benefits under Davis-Bacon law.

The following are NOT eligible bona fide fringe benefits:

- 1) Travel time;
- 2) Bonus payments;
- 3) Use of company tools or equipment;
- 4) Use of company vehicle;
- 5) Uniforms or safety shoes
- 6) Union Dues; Contributions into industry campaigns, marketing or advancement;
- 7) Substance Abuse Testing/Training programs

Independent subcontractors and self-employed owners are considered to be subcontractors of the Prime contractor. They are subject to the same requirements as are all subcontractors. Independent subcontractors and self-employed owners must submit a Certified Payroll Report or be listed on another contractors' weekly payroll following the documentation guidelines as referenced by DOL, WHD-347.

If the contractor or its subcontractors do not pay the proper hourly rate and fringe benefit on this project, the grantee shall withhold a necessary amount from the prime contractor until restitution is made. The prime contractor may be held liable for liquidated damages if its workers or those of subcontractors on this project are not paid the proper hourly wage and benefit.

Apprentices

Contractors and subcontractors may use and classify workers on this project as apprentices provided that the workers are duly registered and certified in a bona fide apprenticeship program recognized by the U.S. Department of Labor, Bureau of Apprenticeship and Training or State Approved Apprenticeship Program. If a contractor or subcontractor intends to utilize apprentices on this project, they must provide documentation to the Grant Administrator to verify the certification of the employee in an approved Apprenticeship Program. Certification must be provided before the apprentice is permitted to work on the job site. Contractors and subcontractors may not exceed the ratio of apprentices to journeymen as established by the apprenticeship program. Apprentices performing work on project site without proper ratio for supervision will be compensated at full journeymen wage complying with the Davis-Bacon Prevailing Wage classification. Contractors must also provide wage and fringe information for various levels of apprenticeship.

On-site Interviews

The Grant Administrator, a representative from the U. S. Department of Labor, a representative of the U. S. Department of Housing and Urban Development and a representative of OCRA shall be permitted to visit the job site and interview workers employed on this project. A Record of Employee Interviews must be maintained in the project file. Employee interviews are to be conducted in person any deviation will require written approval from OCRA or Grant Services per project.

SECTION 3

Section 3 of the Housing and Urban Development Act of 1968 provides that to the greatest extent feasible, contractors and subcontractors should make training and employment opportunities available to Section 3 Residents and Businesses when creating new positions to work on federally assisted projects. "Greatest Extent Feasible" means that contractors must make every effort to recruit, target and direct economic opportunities to Section 3 residents and businesses.

Section 3 residents include Low and Very Low-Income level persons. HUD sets the low-income limit at 80% and very low-income limit at 50% of the median family income for counties and metropolitan areas across the country. A Section 3 Business is one that is owned by Section 3 residents, employs Section 3 residents or subcontracts with businesses that provide opportunities to low and very low-income persons.

Prior to start of construction, the Civil Rights/Section 3 Officer must place Section 3 Posters, providing the type and location of the project, and contact information where Section 3 residents and businesses may request additional information regarding Section 3 opportunities at the nearest Work One Office, (find location and contact person at www.in.gov/dwd/WorkOne/). The 11 x 14 Posters may be sent to Work One via electronic mail if desired. Posters should also be placed in local government offices, Post Office, Library, public housing developments or such other public place that Section 3 residents may have the opportunity to observe the Posters.

The Civil Rights/Section 3 Officer must maintain a list of names and contact information of persons who express an interest in obtaining employment or subcontracts under Section 3 guidelines and provide that information to the prime contractor or any subcontractors working on the federally assisted project as jobs, training or subcontracting opportunities become available.

The prime contractor and any known subcontractors subject to Section 3 must provide a list of current employees to the Civil Rights/Section 3 Officer at the Pre-construction Conference. When the work called for in their contract is complete, each of these contractors and subcontractors are required to submit a Section 3 Compliance Report together with a list of employees at completion of their contract. The beginning list and ending list will be used to determine whether any new employees were hired during the performance of their contract.

The prime contractor and any subcontractors who work on the project must place the appropriate job vacancy on Indiana Career Connect (ICC) at www.indianacareerconnect.com/. In addition, all contractors and subcontractors will search ICC for candidates that meet the requirements of the position and contact the appropriate regional Work One contact person to coordinate with the regional provider to help fill open positions. When the vacant position is filled, it is the responsibility of the Civil Rights/Section 3 Officer and/or the contractor or subcontractor

to advise Indiana Career Connect that the position is no longer available. Contractors are required to give first consideration to any Section 3 residents or Businesses for new positions, training, or subcontracting opportunities. Section 3 residents or businesses are not guaranteed employment or contracting opportunities under Section 3. Section 3 residents must demonstrate that they meet the qualifications for new employment opportunities created as a result of the federally assisted project. Section 3 business concerns must submit evidence to the satisfaction of the party awarding the contract to demonstrate that they are responsible firms and have the ability to perform successfully under the terms and conditions of the proposed contract.

In all instances where new positions are being created, the contractor must document the results of any Section 3 residents contacted regarding the position and the results of that contact. To ensure compliance with this federal regulation, all contractors and subcontractors (whose contract amount exceeds \$100,000) must complete a Section 3 Compliance Report when work on the project called for in their contract is complete. Any documentation regarding contacts or consideration of Section 3 applicants must be maintained by the contractor and provided to the Civil Rights/Section 3 Officer with the Compliance Report.

BUY AMERICA PREFERENCE

The Build America Buy America Act provides, to the greatest extent possible, for early coordination with engineers/architects to incorporate products that meet Buy America Preference in the design phase of infrastructure projects.

All contractors who receive federal financial assistance for an infrastructure project which includes construction, alterations, or repairs are subject to the BABA unless a waiver is in place. The Buy America Preference (BAP) requires the use of iron and steel, construction materials and manufactured goods produced in the United States.

Bidders must provide cost estimates based on the most current American made products available. It is the responsibility of the grantee to ensure that BABA requirements are included in bid advertisements. *Form 17: Sample Invitation for Bid Publication* has been updated to reflect Buy America Preference requirements. The Buy America Preference must be included in all subawards, contracts, and purchase orders for the work performed, or products supplied under an OCRA award.

OTHER FEDERAL REQUIREMENTS

Title VI of the Civil Rights Act of 1964 states that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

Title VII of the Civil Rights Act of 1964 prohibits discrimination in hiring, promotion and other employment practices on the basis of race, color, religion, sex, or national origin.

Section 109 of the Housing and Urban Development Act of 1974 prohibits discrimination on the basis of race, color, national origin, disability, age, religion and sex within Community Development Block Grant programs or activities.

Title III of the Americans with Disabilities Act prohibits discrimination based on "disability" by requiring that places of public accommodation be readily accessible to and useable by persons with disabilities.

The Architectural Barriers Act of 1968 requires that a project meet at least the minimum requirements of accessibility. A Certificate of Accessibility must be provided to the Grantee with a copy to OCRA on or before the completion of the project.

Section 504 of the Rehabilitation Act of 1974 states that a contractor or subcontractor may not discriminate against an otherwise qualified individual from participating in or enjoying the benefits of this project as a result of a physical handicap.

Executive Order 11063 provides that no person on the basis of race, color, religion, sex, or national origin, shall be discriminated against in federal housing assistance, including lending assistance.

Executive Order 11246 as amended by Executive Order 11375 provides that no person shall be discriminated against on the basis of race, color, religion, sex, or national origin in any phase of employment on federally assisted construction contracts.

All contractors and subcontractors **awarded a federal contract or subcontract in excess of \$50,000.00 and having more than 50 employees** must have an Affirmative Action Plan established in writing and on file in its place of business. Failure to have an Affirmative Action Program may result in sanctions established under section 209(a) of Executive Order 11246. This regulation is enforced by the Office of Federal Construction Contract Compliance, and additional information may be found at www.dol.gov/ofccp or at 1-800-397-6251. The Indiana office is located at 46 East Ohio Street, Suite 419, Indianapolis, Indiana 46204 and phone number is 317-226-5680.

Other laws enforced by the U. S. Equal Employment Opportunity Commission (EEOC) may be found at www.eeoc.gov/policy/laws.html.

OTHER RESPONSIBILITIES WHEN PARTICIPATING IN A FEDERALLY FUNDED PROJECT

- A) The State of Indiana has established a Minority/ Women Owned Business Enterprise goal of 10% and Veteran Owned Small Business goal of 3% of the grant amount. Documentation of reasonable efforts to meet this goal must be maintained in the grantee's project files.
- B) The contractor must display the following posters on the project job site in a location assessable to all employees. Posters may be obtained from the Grant Administrator.
 - Equal Employment Opportunity is The Law
 - Fair Housing Poster
 - Safety and Health Protection on the Job
 - Notice to All Employees working on Federally Financed Construction Projects
 - Employee Polygraph Protection Act
- C) A copy of the applicable wage decision assigned to the project must also be posted at the job site.



Elwood Water System Improvements Project
Pre-bid Meeting
 City of Elwood, Indiana

ATTENDANCE SHEET

March 18, 2026 – 9:30 AM – Elwood Municipal Center 1505 S B Street, Elwood, IN 46036

NAME	COMPANY	PHONE	E-MAIL
Corbin Stahl	F.A. Wilhelm	317-503-7101	Corbin.Stahl@FAWilhelm.com
Chad Shuey	F.A. Wilhelm	661-487-2418	Chad.Shuey@FAWilhelm.com
Andrew Morgan	KMA DIRT WORKS	574-721-1586	Admorga~1911@YahpD.com
BILL WATSON	WATSON Exc.	765-744-2204	BILLWATSONExc@Gmail
Jerry Watson	Dyster Drilling	317 773 7455	Jerryk0 dysterdrilling.com
ARON ANDERSON	CULY CONTRACTING	765 584 8509	aronanderson@azuria.com
Justin Kleinpeter	KCG	elw-525-7060	Justin@kleinpeterconsulting.com
DANNO PAREDES	DCCM	—	dparedes@dccm.com
Tommy Jeffell	CITY OF ELWOOD	765-551-2050	
Christy Bosker	City	765-623-5187	cbosker@elwood.in.gov
USA Hobbs	City of Elwood	765-617-6331	lhobbs@elwood.in.gov
Cady Landonham	City of Elwood	765-517-2731	

**ATTACHMENT NO. 2:
IDEM CONSTRUCTION
PERMIT**



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • Fax (317) 233-6647 • www.idem.IN.gov

Mike Braun
Governor

Clint Woods
Commissioner

PERMIT FOR PUBLIC WATER SUPPLY CONSTRUCTION

Glen Murray, Utility Foreman
Elwood Water & Sewage
1505 South B Street
Elwood, IN 46038

WS-13048

March 18, 2026

Permit Number

Date Issued

Liz Melvin, Section Chief
Drinking Water Permits Section
Office of Water Quality

You are hereby notified that the Office of Water Quality has approved the general design of plans and specifications of water works improvements to the Elwood Water & Sewage public water system (PWSID IN5248007). This permit allows for water main construction for the Elwood Water & Sewage public water system located in Madison County, Indiana. This Permit is issued under provisions of Indiana Code (IC) 13-15, IC 13-18-16, 327 Indiana Administrative Code (IAC) 8-3, and 327 IAC 8-4-1.

Pursuant to IC 13-15-5-3 and IC 4-21.5-3-4(d), this Permit is effective on the date issued.

The project consists of installing 4,700 feet of 6-inch SDR 11 HDPE water pipe, and 800 feet of 3-inch SDR 11 water pipe, together with all the necessary appurtenances.

This Permit is issued with the following conditions:

1. That the permittee shall notify Liz Melvin, Permits Section Chief, in writing a minimum of ten (10) days, excluding Saturdays, Sundays, and State of Indiana holidays, before exercising a permit issued in accordance with 327 IAC 8-3. The notification may be via email (dwpermits@idem.in.gov) and must include the assigned construction permit number, the location of the construction, a description of the construction, the anticipated duration of the construction, and the phone number of the permittee or permittee's representative who will be present during the construction;
2. That, after the commissioner has granted a construction permit, no changes in the application, plans, or specifications shall be made other than changes involving the replacement of equipment of similar design and capacity. None of these changes shall adversely change the plant's operation, hydraulic design, or waste products, nor shall they adversely change the distribution system's design, operation, or capacity without first submitting in writing to the commissioner a detailed statement of the proposed changes and receiving an

Visit on.IN.gov/survey or scan the QR code to provide feedback.

We appreciate your input!



amended construction permit from the commissioner. Construction permits shall become void if the construction is not started within one (1) year from the date of issuance of the permit, unless the duration of the permit has been extended by the commissioner after receiving a written request from the permittee prior to the permit's expiration requesting such extension with no other changes to the permit, application, plans, or specifications as approved by the commissioner;

3. That the possession of any permit authorized by 327 IAC 8-3 shall not be construed as authorization for the holder of the permit to violate any law of the State of Indiana or rule;
4. That the facility shall be designed, constructed, installed, and operated in such a manner that it will not violate any of the sanitary or health regulations or requirements existing at the time of application for the permit;
5. That the facility shall conform to the design criteria in the 2022 edition of the "Recommended Standards for Water Works" established by the Great Lakes - Upper Mississippi River Board of State Public Health and Environmental Managers (10 State Standards), the American Water Works Association (AWWA) standards, or shall be based on other such criteria which the applicant shows will produce drinking water of satisfactory quality and normal operating pressure at the peak operating flowrate in accordance with 327 IAC 8-3;
6. That all direct additives to the public water system shall be certified for conformance to ANSI/NSF Standard 60 and that all indirect additives, including lubricants, coatings, and equipment which conveys potable water, shall be certified for conformance to ANSI/NSF Standard 61;
7. That no pipe, plumbing fitting, or other fixture containing more than a weighted average of 0.25% lead nor any solders or flux containing more than a weighted average of 0.2% lead shall be used in the installation or repair of any piping on this project which conveys a potable water supply. Additional information may be obtained at the U.S. Environmental Protection Agency's website at <http://water.epa.gov/drink/info/lead/upload/epa815s13001.pdf>;
8. That each new and repaired water main to be placed into service shall be disinfected in accordance with AWWA Standard C651, and that all chlorinated water generated by the disinfection procedures shall be disposed of to a sanitary sewer with the approval of the local sewer authority or to a location other than a sanitary sewer after the water has been dechlorinated in accordance with AWWA Standard C655 Field Dechlorination;
9. That two (2) successive sets of total coliform samples shall be collected in accordance with AWWA Standard C651 at intervals of at least thirty (30) minutes apart from each water main to be placed into service and be tested for coliform bacteria by a certified laboratory. These results shall confirm that the water in the mains is bacteriologically acceptable before the mains can be placed back into service. The laboratory results from all main sampling

performed shall be marked with the construction permit number, WS-13048, and PWSID number, IN5248007, and be submitted to the Drinking Water Branch's Permit Section at dwpermits@idem.in.gov;

10. That the system be constructed and installed as shown and described on the plans and specifications entitled Water System Improvements certified by Ricardo Juan Paredes Aronsohn, P.E., that were submitted by DCCM on January 28, 2026, with revisions received on February 3, 2026, clarifications received on February 10, 2026, and revisions to the plans received on February 12, 2026;
11. **Alternative to Technical Standard:** That at all locations in which the water main is within ten (10) feet horizontally of a storm or sanitary sewer, the water main through the length of the water main where the required horizontal separation distance cannot be met is installed in a waterworks grade 200 psi pressure rated casing and the ends of the casing are sealed. The locations where this will occur are:
 - Sheet C101 Station 1+00 to Station 3+85;
 - Sheet C106 Station 0+00 to Station 0+75;
12. That all fire or flushing hydrants leads shall have auxiliary valves and be separated from potential sources of contamination by ten (10) feet horizontally measured from the outside edge of the hydrant to the outside edge of the potential sources of contamination;
13. That fire hydrants or flushing hydrants shall be located at points necessary so that the spacing between the hydrants shall not exceed six hundred (600) linear feet unless serving widely scattered customers and where future development is not expected;
14. That the minimum size of water main which provides for fire protection and serving fire hydrants shall be 6-inch diameter;
15. That the isolation valve spacing shall not exceed six hundred (600) linear feet unless serving widely scattered customers and where future development is not expected;
16. That all water mains and their accessories shall be installed, and pressure and leak tested in accordance with the applicable provisions of AWWA C901-17 Polyethylene Pressure Pipe and Tubing 0.75 In. Through 3 in. for Water Service and AWWA C906-15 Polyethylene Pressure Pipe and Fittings 4 in. Through 65 in. for Waterworks;
17. That water mains be covered with earthen cover in accordance with 327 IAC 8-3.2-17(d);
18. That the system be able to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow;

19. That except for the approved locations listed in condition 11 above, all water mains shall not be located within ten (10) feet measured horizontally from the outside edge of the water main to the outside edge of any existing and proposed sanitary sewers or storm sewers; unless the water main and sewers are crossing and comply with the following:
 - a. The water main and sewers must cross with the water main and sewers separated by minimum of eighteen (18) inches measured vertically from the outside edge of the water main to the outside edge of the sewers,
 - b. The water main and sewers must cross with not less than a forty-five (45) degree angle measured from the centerlines of the water main and sewers,
 - c. The conditions specified in subsections a and b above are maintained for a minimum distance of ten (10) feet from either side of the water main as measured from the outside edge of the water main to the outside edge of the sewer,
 - d. All sewers must be marked to identify it is as a sewer wherever it crosses a water main,
 - e. At the crossings, one full length of water pipe shall be centered over the sewer so that the water main joints are as far from the sewer as possible;
20. That no water main shall be within eight (8) feet of a sanitary sewer manhole, a storm sewer manhole, or a drainage grate support structure as measured from the outside edge of the water main to the outside edge of the sanitary sewer manhole, storm sewer manhole, or drainage grate support structure;
21. That no water main shall cross a sewer within eighteen (18) inches vertically as measured from the outside edge of the water main and the outside edge of the sewer;
22. That backflow and back siphonage prevention shall be provided in accordance with 327 IAC 8-10 where necessary; and
23. That all dead-end mains shall end with a valve and one (1) additional length of pipe beyond the valve that is properly plugged or capped. That all dead-end mains shall have flushing devices that are sized to provide at least two and one-half (2.5) feet per second in the dead-end main during flushing. That no flushing device shall be directly connected to any sewer.

Plans and specifications entitled Water System Improvements certified by Ricardo Juan Paredes Aronsohn, P.E., were submitted by DCCM on January 28, 2026, with revisions received on February 3, 2026, clarifications received on February 10, 2026, and revisions to the plans received on February 12, 2026, with a public notice date of February 9, 2026.

This Permit shall become void if construction is not started by April 2027. Any fundamental change in plans or specifications which may affect drinking water quality, operations, or public health must be submitted for review and approval by this agency.

This Permit may be modified, suspended, or revoked for cause including, but not limited to the following:

1. Violation of any term or condition of this Permit; or,
2. Obtaining this Permit by misrepresentation or failure to fully disclose all relevant facts.

Nothing herein shall be construed as guaranteeing that the proposed public water supply facility shall meet standards, limitations or requirements of this or any other agency of state or federal government, as this agency has no direct control over the actual construction and operation of the proposed project.

If you wish to challenge this permit, you must file a Petition for Administrative Review with the Indiana Office of Administrative Law Proceedings (OALP) and serve a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Indiana Office of Administrative Law Proceedings within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM.

Addresses are:

Director
Indiana Office of Administrative Law Proceedings
Indiana Government Center North
Suite N802
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

The petition must contain the following information:

1. The name, address, and telephone number of each petitioner.
2. A description of each petitioner's interest in the permit.
3. A statement of facts demonstrating that each petitioner is:
 - a. a person to whom the order is directed;
 - b. aggrieved or adversely affected by the permit; or
 - c. entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The alleged environmental concerns or technical deficiencies of the permit.
7. The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.

8. The identity of any person(s) represented by the petitioner.
9. The identity of the person against whom administrative review is sought.
10. A copy of the permit that is the basis of the petition.
11. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the permit. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If you seek to have a permit stayed during the administrative review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OALP will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OALP at the address above.

If you have questions regarding your Petition for Administrative Review by the Indiana Office of Administrative Law Proceedings, please refer to the OALP's website at <https://www.in.gov/oalp/>

In order to assist the permit staff in tracking appeals, we request that you submit a copy of your petition to Liz Melvin, Permits Section Chief, OWQ Drinking Water Branch – Mail Code 66-34, 100 N. Senate Ave, Indianapolis, Indiana 46204-2251.

If you do not object to this Permit, you do not need to take any further action. If you have any questions regarding this matter, please contact Ian Caig, Permit Review Engineer, Office of Water Quality, at (317) 234-8016.

cc: Madison County Health Department (electronic copy)
Ricardo Juan Paredes Aronsohn, P.E. (electronic copy)
Ian Caig, IDEM (electronic copy)
Clint J. Woods, IDEM Field Inspector (electronic copy)
Lucio Ternieden, IDEM (electronic copy)
Liz Melvin, IDEM (electronic copy)
Stacy Jones, IDEM (electronic copy)
Kelly Jones, IDEM (electronic copy)
Megan Wright, IDEM (electronic copy)

**ATTACHMENT NO. 3:
REVISED SPECIFICATIONS**

BID FORM

Elwood, IN

Elwood Water System Improvements

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ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Elwood Indiana (C/O Allison Roby)
1505 S B Street, Elwood, IN 46036

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 91 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:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

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

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

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

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

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

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

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

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

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	Unit Price	Total Price
1	Mobilization and Demobilization	LS	1		
2	Maintenance of Traffic	LS	1		
3	Construction Engineering	LS	1		
4	Erosion and Sediment Control	LS	1		
5	Site Grading and Restoration	LS	1		
6	3-inch Water Main, HDPE SDR 11, IPS	LF	800		
7	6-inch Water Main, HDPE SDR 11, DIPS	LF	4,700		
8	10-Inch HDPE SDR 11 Casing Pipe	LF	370		
9	¾-Inch Water Service Reconnection	EA	86		
10	Connection to Existing Watermain (Tapping Sleeve and Saddle)	EA	6		
11	Hydrant Assembly, Complete	EA	8		
12	6-inch Gate Valve Assembly, Complete	EA	33		
13	3-inch Gate Valve Assembly, Complete	EA	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.

Total Base Bid Price \$ _____

Alternate Item No.	Description	Unit	Estimated Quantity	Alternate Unit Price	Alternate Total Price
1	6-Inch Water Main, Certa-Lok C900 PVC	LF	4,700		
2	3-Inch Water Main, Certa-Lok C900 PVC	LF	800		

Total Alternate Price

\$ _____

Proposed increase or decrease in price for the Bid Alternates listed above will not be considered in determination of the lowest responsive and responsible bid.

The undersigned understands that after a contract is awarded, the Owner may select items of the Alternate Bids listed above. If awarded the contract, the Bidder agrees to furnish and install any Owner selected Alternate items for the add or deduct indicated. The total base bid will then be adjusted accordingly. The add or deduct amounts listed above are "installed" prices and take into consideration and include any cost of the design or construction changes that may be required as a result of selecting the Alternate.

Alternate Contract Item prices are subject to acceptance by the Owner, and rejection of one or more Alternate Contract Item prices will not invalidate acceptance of this Bid.

ARTICLE 6 – TIME OF COMPLETION

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

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
 - B. List of Proposed Subcontractors;
 - C. List of Proposed Suppliers;
 - D. List of Project References;
 - E. Bidder's License No.: _____ demonstrating evidence of authority to do business in the state of Indiana.
 - F. Required Bidder Qualification Statement (Form 96) with supporting data;
 - G. E-Verify Affidavit;

OCRA Required Documents

- H. Davis-Bacon Act Provisions and Forms (Exhibit B)
- I. BABA Compliance Forms (Exhibit C)
 - 1. Forms are to be reviewed by Contractor.
 - 2. Forms are to be filled out after Notice of Award has been issued to the selected bidder.

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

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

By:
[Signature] _____

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

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____
(where applicable)

(NO TEXT THIS PAGE)

SECTION 01 20 00 - CONTRACT ITEMS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The Section includes the Contract Items for the Project.

1.2 CONTRACT ITEM 1 – MOBILIZATION AND DEMOBILIZATION

A. Description: The Work under this Contract Item includes all work necessary for the movement of personnel and equipment to and from the project site. This shall include the submittal of a Performance Bond, Payment Bond, Maintenance Bond [SC-6.01], Contractor's Insurance for Worker's Compensation [SC-6.03], Contractor's Commercial General Liability [SC-6.03], Automobile Liability [SC-6.03], Excess or Umbrella Liability [SC-6.03], Contractor's Professional Liability [SC-6.03], Owner's Liability Insurance [SC-6.04], and Property Insurance [SC-6.05].

- B. Payment: Payment under Item 1 will be made at a Lump Sum Price.

1.3 CONTRACT ITEM 2 – MAINTENANCE OF TRAFFIC

A. Description: The Work under this Contract Item includes construction and maintenance of all detours, routing of traffic, and signage necessary to install the water main to the lines and slopes shown on the Drawings, and specified herein in addition to all other work required or incidental thereto.

- B. Payment: Payment under Item 2 will be made at a Lump Sum Price.

1.4 CONTRACT ITEM 3 – CONSTRUCTION ENGINEERING

A. Description: The Work under this Contract Item includes the planning and management of the project complete with all labor, material, and equipment necessary, including contractor's field office/trailer and INDOT Settlement Monitoring Plan for work done in INDOT Right of Way.

- B. Payment: Payment under Item 3 will be made at Lump Sum Price.

1.5 CONTRACT ITEM 4 – EROSION AND SEDIMENT CONTROL

A. Description: The Work under this Contract Item includes installing erosion and sediment control devices as shown on the Drawings and specified herein complete with all labor, material, and equipment necessary; along with maintaining and repairing/replacing these devices if determined necessary by the Engineer.

B. Payment: Payment under Item 4 will be made at a Lump Sum Price.

1.6 CONTRACT ITEM 5 – SITE GRADING AND RESTORATION

A. Work under this contract item includes all work for site restoration including all restoration of grading, soils, asphalt, concrete, pavement markings (includes ADA markings), and all other items necessary to restore the project sites to their original condition, including but not limited to removal of existing pavements of all types, granular backfill, stone, HMA, concrete, and ADA ramps and all associated appurtenances including not but limited to the detectable warning surfaces.

B. Payment: Payment under Item 5 will be made at a Lump Sum Price.

1.7 CONTRACT ITEM 6 – 3-INCH WATER MAIN, SDR 11 HDPE, IPS

A. Description: The Work under this Contract Item includes clearing and grubbing, excavation, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling with granular backfill or otherwise, the pipe, associated fittings, joint restraints and thrust blocks, all casings as depicted on Contract Drawings and abandoning existing pipe as described, as well as connecting to existing services and hydrants, complete with all labor, material, and equipment necessary to install the water main to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.

B. Payment: Payment under Item 6 will be made for each linear foot of 3-inch DR 11 HDPE water main installed at the appropriate size and depth.

1.8 CONTRACT ITEM 7 – 6-INCH WATER MAIN, SDR 11 HDPE, DIPS

A. Description: The Work under this Contract Item includes clearing and grubbing, excavation, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling with granular backfill or otherwise the pipe, associated fittings, joint restraints, and thrust blocks, and abandoning existing pipe as described, as well as connecting to existing services and hydrants, complete with all labor, material, and equipment necessary to install the water main to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.

B. Payment: Payment under Item 7 will be made for each linear foot of 6-inch DR 11 HDPE water main installed at the appropriate size and depth.

1.9 CONTRACT ITEM 8 – 10-INCH CASING PIPE, SDR 11 HDPE, DIPS

A. Description: The Work under this Contract Item includes clearing and grubbing, excavation, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling with granular backfill or otherwise the pipe, associated fittings, spaces, seals, joint restraints, and thrust blocks, all casings as depicted on drawings, and abandoning existing pipe as described, as well as connecting to existing services and hydrants, complete with all labor, material, and equipment necessary to install the water main to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.

B. Payment: Payment under Item 8 will be made for each linear foot of 10-inch SDR 11 HDPE casing pipe installed at the appropriate size and depth.

1.10 CONTRACT ITEM 9 – WATER SERVICE RECONNECTION

A. Description: The Work under this Contract Item includes reconnecting existing water meters as shown on the contract drawings and specified herein, and all labor, testing, material, and equipment as necessary for complete reconnection.

B. Payment: Payment under item 9 will be made for each reconnection.

1.11 CONTRACT ITEM 10 – CONNECTION TO EXISTING WATER MAIN

A. Description: The work under this Contract Item includes installation, integration, and connection of a new water main to existing sites as depicted in the contract documents and specified herein, resulting in complete and function installation, including all necessary ancillary equipment required for connections.

B. Payment: Payment under Item 10 will be made for each connection.

1.12 CONTRACT ITEM 11 – FIRE HYDRANT ASSEMBLY, COMPLETE

A. Description: The Work under this Contract Item includes installing new hydrant assemblies in their entirety, up to the main line, along with proper testing. It also includes the installation of full hydrant assembly complete with valve, connection and testing of new hydrants. It also includes the salvage of existing hydrants and the return back to the City.

B. Payment: Payment under Item 11 will be made for each hydrant.

1.13 CONTRACT ITEM 12 – 6-INCH GATE VALVE WITH VALVE BOX AND RISER, DUCTILE

IRON

A. Description: The Work under this Contract Item includes (as necessary) installing the gate valve with valve box as shown on the Drawings and specified herein, and all labor, testing, material, excavation, backfill (including but not limited to granular backfill), and equipment as necessary for complete installation.

B. Payment: Payment under Item 13 will be made for each gate valve with valve box installed.

1.14 CONTRACT ITEM 13 – 3-INCH GATE VALVE WITH VALVE BOX AND RISER, DUCTILE IRON

A. Description: The Work under this Contract Item includes (as necessary) installing the gate valve with valve box as shown on the Drawings and specified herein, and all labor, testing, material, excavation, backfill (including but not limited to granular backfill) and equipment as necessary for complete installation.

Payment: Payment under Item 14 will be made for each gate valve with valve box installed.

1.15 ALTERNATE CONTRACT ITEM 1 – 6-INCH WATER MAIN, CERTA-LOK C900 PVC

A. Description: This alternate covers the price difference to use Certa-Lok C900 pipe rather than HDPE SDR 11, DIPS. The Work under this Contract Item includes clearing and grubbing, excavation, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling with granular backfill or otherwise the pipe, associated fittings, joint restraints, and thrust blocks, and abandoning existing pipe as described, as well as connecting to existing services and hydrants, complete with all labor, material, and equipment necessary to install the water main to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.

1.16 ALTERNATE CONTRACT ITEM 2– 3-INCH WATER MAIN, CERTA-LOK C900 PVC

A. Description: This alternate covers the price difference to use Certa-Lok C900 pipe rather than HDPE SDR 11, IPS. The Work under this Contract Item includes clearing and grubbing, excavation, removal, and disposal of excavated materials as required, trench and excavation support, potholing, installing and backfilling with granular backfill or otherwise the pipe, associated fittings, joint restraints, and thrust blocks, and abandoning existing pipe as described, as well as connecting to existing services and hydrants, complete with all labor, material, and equipment necessary to install the water main to the lines and slopes shown on the Drawings by the method stated on the drawings when indicated, and specified herein in addition to all other work required or incidental thereto.

END OF SECTION 01 20 00

SECTION 33 05 05.31 - HYDROSTATIC TESTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawing and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following: Hydrostatic testing of all finished water mains installed. Furnish all items necessary to perform the Work, except as otherwise specified. This section is for hydrostatic testing protocol for open cut applications or directionally drilled non-HDPE pipe.

1.3 REFERENCES

- A. AWWA C605-13 - Installation of PVC (Yelomine®) Pressure Pipe and Fittings
- B. AWWA C906 – Installation of High Density Polyethylene (HDPE) Pressure Pipe and Fittings
- C. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service
- D. AWWA C502 - Dry-Barrel Fire Hydrants
- E. AWWA C503 - Wet-Barrel Fire Hydrants
- F. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service

1.4 QUALITY ASSURANCE

- A. Test procedures should be performed to meet the requirements of AWWA Standard C901 and C906.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TESTING

- A. Hydrostatic tests shall be performed on all water mains installed. Make arrangements with the Owner and/or Owner's representative for scheduling each test. Each test shall be performed on the day mutually agreed upon and in the presence of the Owner and/or Owner's Representative.
- B. Furnish equipment, temporary piping, pumps, fittings, gauges, and operating personnel necessary to conduct the tests. Coordinate with the Owner and the Engineer to locate hydrant to obtain test water from and maximum flow to be removed from the system.
- C. The water mains may be tested in sections between valves when there is one or more intermediary valves in a water main.
- D. Each section of water main shall be complete and thrust blocks and/or joint restraints shall have been in place prior to being tested.
- E. Expel all air from the water main test section during the filling of the main and prior to the application of test pressure. Tap the water main at high points, if necessary, to release all air from the water main. Plug taps after the test is successfully completed. Plugs shall be watertight.
- F. Hydrostatic Testing Protocol for Open-Cut Applications
 - 1. Test water mains at a static pressure of 150 pounds per square inch over a period of two consecutive hours.
 - a. Do not allow leakage for water mains to exceed the pound per square inch specified by the following formula in Section 5.2 of AWWA C600.

$$L = \frac{SxDx(P)^{1/2}}{148,000}$$

in which L is the allowable leakage in gallons per hour or the quantity of water supplied to maintain test pressure, S is the length of water main tested in feet, D is the nominal diameter of the pipe in inches, and P is the average test pressure in psi gauge.

- b. The test will be considered successful when the pressure drop over the test period is the value calculated in Section 3.1.F.1 or less.
- c. Ensure make-up water is from a measurable source.
- d. Correction: Repair defects and repeat test until acceptable.
- e. The maximum length of pipe to be tested shall be 2000 feet.

- G. Hydrostatic Testing Protocol for Directionally Drilled HDPE Pipe
1. The pipe shall be hydrostatically tested before being connected to other piping systems. The pipe shall be tested independently of other hydrostatic tests. Hydrostatic testing will consist of filling the constructed pipeline with water taking care to bleed off trapped air. The Contractor shall pressurize the pipe to 150 psi for a minimum of 4 hours to give the pipe time to expand. During this initial 4 hours, make-up water shall be added as needed to maintain the pressure within 5 psi of the specified pressure. At the end of the first 4 hours, the pipe shall be pressurized to the specified pressure, and the test commences. The pipeline shall be maintained under the test pressure for a continuous period of between 1 and 3 hours by pumping water into the line at frequent intervals. The volume of water so added to maintain pressure within 5 psi of the specified pressure shall be measured and considered to represent the “leakage” from the line during the interval. The allowable “leakage” for the pipeline shall not exceed the allowances given in the following table.

Pipe Nominal Size (in)	1-Hour Test, Allowable Leakage (gal/100 ft of pipe)	2-Hour Test, Allowable Leakage (gal/100 ft of pipe)	3-Hour Test, Allowable Leakage (gal/100 ft of pipe)
3	0.1	0.15	0.25
4	0.13	0.25	0.4
6	0.3	0.6	0.9
8	0.5	1	1.5
10	0.75	1.3	2.1
11	1	2	3
12	1.1	2.3	3.4
14	1.4	2.8	4.2
16	1.7	3.3	5
18	2.2	4.3	6.5
20	2.8	5.5	8
22	3.5	7	10.5
24	4.5	8.9	13.3
28	5.5	11.1	16.8
32	7	14.3	21.5
36	9	18	27
40	11	22	33
48	15	27	43

2. It is understood that the pipe will continue to expand after the initial 4 hours under pressure and throughout the 1 to 3-hour test period. The allowable “leakage” presented in the table above accounts for this expansion and no additional allowable “leakage” will be considered.

3. Under no circumstances shall the total time under the specified test pressure exceed 8 hours. If the test is not completed due to leakage, equipment failure, etc., the test shall be terminated, and the pipeline shall be de-pressurized and permitted to "relax" for a minimum of 8 hours prior to the next testing sequences.
4. If there are no visual leaks or significant pressure drops during the final test period, and the measured "leakage" is less than allowable, the pipeline passes the hydrostatic test.
5. In the event that the "leakage" exceeds the specified allowable, the Contractor shall be responsible to repair or replace the pipeline until the pipeline passes the hydrostatic test.

END OF SECTION 33 05 05.31

SECTION 33 14 13 – PUBLIC WATER UTILITY PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes requirements for the installation and furnishing of all pipe, fittings, and appurtenances necessary to complete work shown or specified.
- B. Related Requirements
 - 1. Section 31 23 23 "Fill".
 - 2. Section 31 23 16 "Excavation".
 - 3. Section 31 23 16.13 "Trenching".
 - 4. Section 33 01 10.58 "Disinfection of Water Utility Piping Systems".
 - 5. Section 33 05 05.31 "Hydrostatic Testing".
 - 6. Section 33 14 19 "Valves and Hydrants for Water Utility Service".

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials (AAHSTO):
 - 1. AASHTO T 180 - Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop.
- B. American Society of Mechanical Engineers (ASME):
 - 1. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
- C. ASTM International:
 - 1. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³)).
 - 2. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
 - 3. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.

4. ASTM D2241 - Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR Series).
5. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
6. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
7. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

D. American Water Works Association:

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
2. AWWA C110 - Ductile-Iron and Gray-Iron Fittings.
3. AWWA C111 - Rubber Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
4. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service.
5. AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.
6. AWWA C606 - Grooved and Shouldered Joints.
7. AWWA C700 - Cold-Water Meters - Displacement Type, Bronze Main Case.
8. AWWA C701 - Cold-Water Meters - Turbine Type, for Customer Service.
9. AWWA C702 - Cold-Water Meters - Compound Type.
10. AWWA C706 - Direct-Reading, Remote-Registration Systems for Cold-Water Meters.
11. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 12 In. (100 mm Through 300 mm), for Water Transmission and Distribution.
12. AWWA C906 - Polyethylene (PE) Pressure Pipe and Fittings
13. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.

E. National Fire Protection Association:

- F. NFPA 24 – Standard for the installation of Private Fire Service Mains and Their Appurtenances.

1.4 SUBMITTALS

- A. Section 01 33 00 "Submittal Procedures": Requirements for submittals.
- B. Product Data: Submit data on pipe materials, pipe fittings, and accessories.
- C. Shop Drawings: Indicate piping layout, including piping specialties. Indicate dimensions, method of field assembly, and components, sizes of appurtenances provided, appropriate fittings, and all options required by the Work.
- D. Manufacturer's Certificate: Certify that the products meet or exceed the specified requirements.

- E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.5 CLOSEOUT SUBMITTALS

- A. Section 01 77 00 "Closeout Procedures": Requirements for submittals.
- B. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations.
- C. Identify, describe, and document unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

- A. Mark pipe, fittings, valves and hydrants according to the applicable specification or standard.
- B. The Contractor shall test and disinfect water mains constructed under this Contract, as specified in Section 33 01 10.58.
- C. The Contractor, under supervision of Owner's Representative, shall collect samples of water from water mains constructed after the piping has been disinfected. The Contractor shall submit the samples to the applicable regulatory agency for bacteriological analysis. Collection and submittal of these samples shall meet the requirements of the applicable regulatory agency. If samples do not pass the requirements of the bacteriological analysis, the water main will be disinfected and sampled again. This procedure will be followed until the samples pass the analysis.
- D. A performance test may be required by the Owner, at any time, for each crew installing water mains. Perform these tests at no additional cost to the Owner. When required, test a given section of water main installed by a given crew. The section shall be a continuous section of water main which can be isolated by valves shown on the Drawings. Do not install water mains in other sections until the first section has been successfully tested.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 00 "Product Requirements": Requirements for transporting, handling, storing, and protecting products.
- B. Do not block individual and stockpiled pipe lengths to prevent moving.
- C. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic.
- D. Store polyethylene and PVC materials out of sunlight.

1.8 EXISTING CONDITIONS

A. Field Measurements

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 GENERAL

1. All pipe, fittings, valves, hydrants, and appurtenances shall be as shown on the Drawings or as required by the manufacturer's and AWWA specifications. All pipe, fittings, valves, hydrants and appurtenances shall be new and unused.

2.2 BURIED WATER MAIN PIPE AND FITTINGS

A. HDPE

1. Acceptable manufacturers are listed below. Manufacturers of equivalent products may be submitted. All HDPE pipe and fittings will be provided by a single manufacturer.
 - a. HDPE Pipe and Fittings:
 - 1) Chevron Phillips Chemical Company LP, Performance Pipe
 - 2) PolyPipe, Inc.
 - b. Fusion Datalogger
 - 1) McElroy Manufacturing, Inc.
 - c. HDPE pipe shall meet the requirements of AWWA C906. Design and manufacture pipe for a working pressure of 150 psi plus 100 psi surge pressure, or better. Additionally, a safety factor of 2.0 and a depth of cover, indicated on the Drawings or as required by the manufacturer's and AWWA specifications, shall be included.
 - d. 3-Inch HDPE pipe shall have iron-pipe-size (IPS) equivalent outside diameter. 6-inch HDPE pipe shall have ductile-iron-pipe-size (DIPS) equivalent outside diameter.
2. Pipe and Fittings
 - a. Materials used for the manufacture of HDPE pipe and fittings will be PE4710 HDPE meeting cell classification PE345464C per ASTM D3350. Pipe and fittings will meet AWWA C906 standards. Material will be listed in the name of the pipe and fitting manufacturer in Plastics Pipe Institute TR-4 with a standard grade rating of 800 psi at 73°F. Pipe will meet Type III, Class B or C, Category 5, and Grade P34 per ASTM D1248.
3. Color Identification:

- a. HDPE must have at least three equally spaced, horizontal, blue marking stripes indicating potable water.
 4. Molded Fittings:
 - a. Molded fittings will be manufactured in accordance with ASTM D3261 and will be so marked. Each production lot of molded fittings will be subjected to the tests required under ASTM D3261.
 5. Fabricated Fittings:
 - a. Fabricated fittings will be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings. Fabricated fittings will be rated for internal pressure service equivalent to the full service pressure rating of the mating pipe. Butt fusion outlets will be made to the same outside diameter, wall thickness, and tolerances as the mating pipe.
 6. HDPE Adapters:
 - a. HDPE pipe may be joined by means of flange adapters with back-up rings or mechanical coupling adapters designed for joining polyethylene pipe to another material. Flange and mechanical joint adapters will be made with sufficient through-bore length to be clamped in a butt fusion joining machine without the use of a stub-end holder. Adapters will be made from the same resin as the pipe. The sealing surface of the adapters will be machined with a series of small v-shaped grooves to provide gasketless sealing. Adapters will be rated for full test pressure, full bulkhead force. For flange adapters, provide a full face neoprene gasket, conforming to ANSI B16.21.
 7. Back-up Rings, Flange Bolts, Gland Rings and Stiffeners:
 8. Flange adapters will be fitted with ductile iron back-up rings pressure rated equal to or greater than the mating pipe. The ductile iron back-up ring bore will be chamfered or radiused to provide clearance to the flange adapter radius. Flange bolts and nuts will be type 304 stainless steel SAE Grade 3 or higher. Mechanical coupling adapters will be fitted with ductile iron gland rings. For flange and mechanical joints, provide stainless steel pipe stiffeners in accordance with the manufacturer's recommendations.
- B. PVC Water Mains
1. Pipe

- a. Polyvinyl chloride pipe shall meet the requirements of AWWA C900, DR-25. Design and manufacture pipe for a working pressure of 150 psi plus 100 psi surge pressure. Additionally, a safety factor of 2.0 and a depth of cover, indicated on the Drawings or as required by the manufacturer's and AWWA specifications, shall be included.
- b. Polyvinyl chloride pipe shall have ductile-iron-pipe-size (DIPS) equivalent outside diameter.

2. Joints

- a. Pipe joints shall be push-on type and meet the requirements of AWWA C900. Do not use solvent-cement joints. Certa-Lok joints are acceptable joint connections.

3. Fittings

- a. Fittings shall be polyvinyl chloride and meet the requirements of AWWA C900. Design and manufacture fittings for a pressure rating of 150 psi.
- b. Mark each fitting. Marking shall meet the requirements of AWWA C900.
- c. Certa-Lok joints are fittings are acceptable.

4. Adapters

- a. Adapters from polyvinyl chloride water mains to victaulic, flange joint valves or fittings shall be ductile iron. Adapters shall meet the requirements of AWWA C110. Design and manufacture adapters for a pressure rating of 150 psi.
- b. Line the inside surfaces of adapters with a single cement mortar lining. Cement mortar lining and seal coating shall meet the requirements of AWWA C104. Coat outside surfaces of adapters with bituminous coating, complying with AWWA C110.
- c. Adapter ends connecting to polyvinyl chloride water mains shall have plain ends or mechanical joints. Mechanical joints shall meet the requirements of AWWA C111.

5. Gaskets

- a. Gaskets for polyvinyl chloride push-on joints shall meet the requirements of AWWA C900. Gaskets for mechanical joints shall meet the requirements of AWWA C111 and ASTM F477. Nuts and bolts for mechanical joints shall be high strength, heat treated, alloy steel. Nuts shall be hexagon nuts, and bolts shall be tee head bolts. Nuts and bolts shall meet the requirements of AWWA C111.

2.3 VALVES

- A. Refer to Section 33 14 19 for valve requirements.

2.4 FIRE HYDRANTS

- A. Refer to Section 33 14 19 for fire hydrant requirements.

2.5 TAPPING SLEEVES

- A. Tapping sleeves are not acceptable for connection to transite piping.
- B. Tapping sleeves shall be stainless steel split sleeves. Each sleeve shall have a branch connection with a mechanical joint end. The inside diameter of each branch shall be over-sized to permit entry and exit of tapping machine cutters. Each flange shall have a recess to center a tapping valve. Recesses shall meet the requirements of MSS SP-60. Flange dimensions and drilling shall meet the requirements of ANSI B16.1. The sleeve dimensions shall be such that the sleeves will not leak when installed on cast iron, ductile iron, or polyvinyl chloride pipe with outside diameters shown in AWWA Standards.
- C. Tapping sleeves for 4-inch through 16-inch pipe shall be mechanical joint type. Design and manufacture tapping sleeves for a working pressure of 200 psi.

2.6 TAPPING SADDLES

- A. Tapping saddles are not acceptable for connection to transite piping.
- B. Design and manufacture tapping saddles for a working pressure of 200 psi. Saddle bodies shall be stainless steel. Saddle straps shall be corrosion resistant steel alloy. Saddle gaskets shall be positively confined O-ring gasket. The sleeve dimensions shall be such that the sleeves will not leak when installed on cast iron, ductile iron, or polyvinyl chloride pipe with outside diameter shown in AWWA Standards.
- C. Each saddle used for making a wet connection shall have a branch connection with a mechanical joint end. The inside diameter of each branch shall be oversized to permit entry and exit of tapping machine cutters. Each flange shall have a recess to center a tapping valve. Recesses shall meet the requirements of MSS SP-60. Flange dimensions and drilling shall meet the requirements of ANSI B16.1.
- D. Each saddle used for making a dry connection shall have a branch connection with a mechanical joint end. Flange dimensions and drilling shall meet the requirements of ANSI B16.1. Nuts and bolts for flange joints shall meet the requirements of AWWA C110 and be zinc-coated alloy steel. Gaskets shall comply with AWWA C110, be full face and rubber, or as approved by the Engineer. Mechanical joints and accessories shall meet the requirements of AWWA C111.
- E. Gaskets used to seal joints between saddle bodies and tapped pipes shall be O-ring type, circular in cross section, and made of natural or synthetic rubber with a Durometer Hardness of 70 ± 5 .

2.7 CUT-IN TEES

- A. Restrained ductile iron couplings shall be used for connection to existing piping. Couplings must be compatible to 2", 4", 6", 8", 10", and 12" diameter piping as indicated and be able to handle a maximum water pressure of 250 psi.
- B. Manufacturers:
 - 1. Ford Meter Box Company – Ductile Iron Wide Range Transition Coupling.
 - 2. Or-equal.

2.8 WATER SERVICES

- A. Pipe shall be High Density Polyethylene.
- B. Fittings and Couplings: Couplings for services shall be copper to copper or copper to iron, as required, and shall meet the applicable requirements of AWWA C800, ASTM B 62 for 85-5-5-5 composition bronze, and ANSI B2.1. Fittings and couplings shall be Ford Products, Pack Type Compression Joints, or approved equal.

2.9 TRACING WIRE FOR METALLIC AND NON-METALLIC PIPE

- A. In open trench installations, #10-gauge solid copper tracing wire, blue in color, shall be attached directly on top of the water main.
- B. Tracing wire shall meet the following specifications:
 - 1. Direct Burial, 21% Conductivity Clad Steel Conductor, Soft Drawn High Strength Tracer Wire.
 - 2. 600# Average Tensile Break Load.
 - 3. Surface legend print on insulating jacket printed at a minimum of every 2 linear feet.
 - 4. 30 mm, Blue, High Molecular Weight-High Density Polyethylene Jacket per ASTM D 1248.
 - 5. 30V rating.
- C. Splicing Connectors shall meet the following specifications:
 - 1. SnakeBite brand wire connectors or approved equal.
 - 2. Max. Voltage: 50 V.
 - 3. Connector Size: 1.138" x 1.285".
 - 4. Wide Range: #14-10 solid and stranded copper; #12 steel core tracer wire (380 and 1200 pound).
 - 5. Silicone Sealant Temperature Rating: -45 degrees Fahrenheit to 400 degrees Fahrenheit.
 - 6. Part# 3WB-01 (Blue) or approved equal.

2.10 WATER METERS (AS APPLICABLE)

- A. All cold water meters shall conform to the AWWA C700 latest revision issued by AWWA. Water meters shall be magnetic-driven, positive displacement meters of the flat nutating disc type. The size, capacity, and meter lengths shall be as specified in AWWA Standard C700 and between 5/8" and 2" in diameter.
- B. Manufacturers:
 - 1. Consult with owner to determine preferred meter.
 - 2. All meters shall be warranted as follows:

Size	Low Flow	Low Flow New Meter Accuracy	Low Flow Repaired Meter Accuracy
3/4"	1/4 gpm@95%	5 yrs or 750,000 gallons	15 yrs or 2,250,000 gallons
1"	3/8 gpm@95%	5 yrs or 1,000,000 gallons	15 yrs or 3,000,000 gallons

Normal meter operating range shall be as follows:

Size	Accuracy Range ± 1.5%
3/4"	3/4 - 30 gpm
1"	1 - 50 gpm

- 3. Meters and meter parts shall be manufactured, assembled, and tested within the United States. Manufacturers may be required to provide proof of where and what percentage of the meter register, chamber, and maincase is manufactured in the United States.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that existing utility water main size, location, and inverts are as indicated on Drawings.
- B. Inspect water main pipe, fittings, and appurtenances prior to installation. Promptly remove damaged or unsuitable products from the job site. Replace damaged or unsuitable products with undamaged and suitable products.

3.2 PREPARATION

- A. Preconstruction Site Video:
 - 1. Take digital video along centerline of proposed pipe trench.
 - 2. Show mailboxes, curbing, lawns, driveways, signs, culverts, and other existing Site features.

3. Include Project description, date taken, and sequential number in file of each video.
- B. Pipe Cutting:
1. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, and remove burrs.
 2. Use only equipment specifically designed for pipe cutting; use of chisels or hand saws is not permitted.
 3. Grind edges smooth with beveled end for push-on connections.
 4. For transite water main pipe, refer to Section 02 41 19 "Selective Demolition" regarding safety procedures for handling of transite pipe.
- C. Remove scale and dirt on side and outside before assembly.
- D. Prepare pipe connections to equipment with flanges or unions.
- 3.3 EXCAVATION
- A. Excavate pipe trench as specified in Section 31 23 16.13 "Trenching" for Work in this Section.
 - B. Dewater excavations to maintain dry conditions to preserve final grades at bottom of excavation as specified in Section 31 23 19 "Dewatering".
 - C. Provide sheeting and shoring as specified in Section 31 23 16.13 "Trenching".
 - D. Place bedding material as specified in Section 31 23 23 "Fill".
- 3.4 LAYING OF WATER MAINS
- A. Proper tools and facilities shall be provided and used by contractor for safe working conditions.
 - B. Lay and maintain pipe to the lines and grades shown on the Drawings or to the minimum depth specified in this Paragraph. Install fittings, valves and hydrants in the locations shown on the Drawings.
 - C. When the exact location of buried utilities is unknown and piping is to constructed parallel and close to said utilities, adjust the alignment of the piping to least interfere with these utilities. This applies unless otherwise shown on the Drawings or specified by the Engineer.

- D. Unless otherwise specified in 327 IAC 8 or in the drawings, water mains shall be laid at least 10 feet horizontally from any existing sanitary or storm sewer or sewage force main. The distance shall be measured from edge to edge of the pipe. Water mains crossing sanitary sewer or sewage force mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer or force main. The 18-inch separation shall apply whether the water main is over or under the sewer or force main. Lay water mains at crossings of sewers and force mains so a full length of water main pipe is centered on the sewer or force main whenever possible. No water main shall pass through or come in contact with any part of a sanitary sewer manhole.
- E. All piping shall be laid at a depth that provides at least 5' of cover. Cover shall be measured as the vertical distance from the top of the pipe to the finish grade elevation.
- F. Laying of water mains shall meet the requirements of AWWA C906, unless otherwise specified in this Section.
- G. Shape the bottom of the trench to give uniform circumferential support of the lower quarter of each pipe.
- H. Do not lay pipe in water or when the trench or weather conditions are unsuitable for proper installation.
- I. As each length of pipe is placed in a trench, join the pipe being laid to the previously laid pipe. Bring the pipe to correct line and grade. Secure the pipe in place with bedding tamped under the pipe. Tamp bedding up to the centerline of the pipe.
- J. Deflection from a straight line or grade shall not exceed the limits specified in this Section. If the alignment requires joint deflections that exceed the allowable deflection per joint, furnish and install fittings or a sufficient number of shorter lengths of pipe.
- K. Provide thrust restraint at horizontal and vertical deflection fittings and at tees, plugs, tapping sleeves and tapping saddles. Restraint shall be mechanical joint piping.
- L. Block the open end of the pipe at the close of each day's work to prevent contamination from dirt or rain water and entry of any animal or foreign material.
- M. Lower pipe, fittings, valves and hydrants into the trench by hand, hoists or ropes or other suitable tools or equipment that will not damage products, coatings or linings. Do not drop or dump pipe, fittings, valves, or hydrants into the trench.
- N. As the water main system is installed, water lines shall be marked with a 2"x4" or other acceptable stake, with a height allowing a minimum of 4-0" above grade. Stake shall have the uppermost section painted blue and marked with the letter "W" to indicate water line placement.

- O. Wrap Ductile Iron sections of water main with polyethylene wrap to prevent damage from corrosive soils.

3.5 CONNECTING TO EXISTING MAINS

- A. Locate and verify exact size of all existing mains, both horizontally and vertically. Additionally, allow adequate time, after location and prior to making new connections, for changes in the connection location and size. Backfill excavation immediately after main is located and measured.
- B. Make each wet connection with a tapping valve and tapping sleeve. Make connection with cut-in tee if the existing main is asbestos-cement (transite) pipe. Install and hydrostatically test each tapping valve and tapping sleeve assembly prior to tapping existing water main. Inspect each tapping valve prior to tapping existing water main. Open and close tapping valves and inspect tapping valves in opened and closed positions to ensure all parts are in working condition. Inspect each tapping valve immediately before connecting tapping machine to ensure the tapping valve is open. Install watertight plug on the tapping valve outlet and backfill excavation if existing water main is not tapped within 48 hours after installing tapping valve and tapping sleeve or tapping saddle assembly. Install watertight plug on the tapping valve outlet and backfill excavation if new water main is not connected to tapping valve within 48 hours after making tap in existing water main.
- C. Make each dry connection, as indicated in contract documents, with fittings and valves indicated on the Drawings. Furnish and install sleeves or tees required to complete connections. All required pipe, fittings, valves, tools, and equipment shall be at the connection site prior to starting connection. Wash interior of new pipe, fittings, and valves with a solution containing 50 mg/L of chlorine prior to making connection. Make connections at night and on weekends when required. The Owner will operate existing valves. Install sufficient water main and restrained joints so existing water mains can be up in service immediately after connection is completed. Inspect joints and eliminate leaks immediately after connection is completed and existing mains are put in service. Install watertight plugs on open ends of pipe and valves and backfill excavation if new water main is not connected to dry connection within 48 hours after completing dry connection.

3.6 JOINTING

- A. PVC Push-on Joints
 1. Pipe must be cleaned and installed as specified by the manufacturer and AWWA C605 requirements. Additionally, all lumps, blisters, excess bituminous coating and foreign material must be removed from the bell and spigot end of each pipe.
 2. For restrained push-on joints, move the loose retainer ring into position against the retainer bar on the spigot end of the pipe being installed. Loosely assemble the joint bolts and nuts.

3. Deflect pipe after jointing, if deflection is required. The amount of deflection shall not exceed the limits shown in the following table:

<u>Pipe Size</u>	<u>Minimum Radius</u>	<u>Maximum Offset Based Upon 20-Foot Pipe Length</u>
3"	88'	27"
4"	110'	22"
6"	165'	15"
8"	215'	11"

B. PVC Restrained Push-on Joints

1. PVC Restrained Push-On Joints will have the same requirements as listed in this Section for PVC Push-on Joints.
2. PVC push-on joints shall consist of a PVC pipe bell restraint with a wedge action restraint ring on the spigot joined to a split ductile iron ring behind the bell. The product shall be the Megalug restraint harness or an approved equal.
3. For restrained push-on joints, pull the nuts to a uniform tightness by hand or with a short wrench. Do not pull the spigot of the pipe being installed against the back of the bell of the receiving pipe. Engage at least a full nut on each bolt when joint deflection is required.

C. Ductile Iron Mechanical Joint Restraints for PVC Pipe

1. Mechanical Joint Restraint shall be in the Megalug Series or approved equal.
2. Mechanical joint restraint shall require conventional tools and installation procedures per AWWA C600, while retaining full mechanical joint deflection during assembly as well as allowing joint deflection after assembly.
3. Proper actuation of the gripping wedges shall be ensured with torque limiting twist off nuts.

D. Mechanical Joints

1. Pipe must be cleaned and installed as specified by the manufacturer and ANSI/AWWA C600 requirements. Additionally, all lumps, blisters, excess bituminous coating and foreign material must be removed from the bell and spigot end of each pipe.
2. Evenly tighten the nuts using a torque wrench. The torque shall be within the range listed in the following table:

<u>Pipe Size</u>	<u>Bolt Size</u>	<u>Torque Range</u>
4" thru 24"	3/4"	75 to 90 ft.-lb.

3. Deflect pipe, fittings or valves after jointing, if deflection is required. The amount of deflection shall not exceed the limits shown in the following table:

<u>Pipe Size</u>	<u>Maximum Deflection Angle</u>	<u>Maximum Deflection Based Upon 18-Foot Pipe Length</u>
4"	8° - 18'	31"
6"	7° - 7'	27"
8"	5° - 21'	20"
10"	5° - 21'	20"
12"	5° - 21'	20"
14"	3° - 35'	13-1/2"
16"	3° - 35'	13-1/2"
18"	3° - 0'	11"
20"	3° - 0'	11"

E. Threaded Joints

1. Pipe must be cleaned and installed as specified by the manufacturer and AWWA C600 requirements. Additionally, all lumps, blisters, excess bituminous coating and foreign material must be removed from the bell and spigot end of each pipe.
2. Do not overtighten joints.
3. Backing off made-up threaded joints to facilitate fit-up or alignment will not be permitted.

F. Flange Joints

1. Pipe must be cleaned and installed as specified by the manufacturer and AWWA C600 requirements. Additionally, all lumps, blisters, excess bituminous coating and foreign material must be removed from the bell and spigot end of each pipe.
2. Do not over torque nuts and bolts.

3.7 RESTRAINING AND SUPPORTS

- A. Restrained joint piping shall be as specified in this Section. Distance from fitting to end of restraint shall not be less than that indicated on the Drawings.
- B. Mechanical Joint Rod Restraint
 1. Mechanical joint rod restraint shall be from fitting to fitting.
 2. The number of rods shall conform to the follow table.

<u>Pipe Size</u>	<u>Rod Size</u>	<u>Minimum No. of Rods</u>
4"	3/4"	2
6"	3/4"	2
8"	3/4"	4
10"	3/4"	4

12"	¾"	6
14"	¾"	6
16"	¾"	8
18"	¾"	8
20"	¾"	10

C. Pipe Supports

1. Furnish and install supports required to hold pipe, fittings and valves at the lines and grades indicated on the Drawings, without causing strain upon pipe, fittings and valves.
2. Support piping by suitable saddle stands, concrete piers or hangers.
3. Locate supports where necessary, at least 8 feet on center.

3.8 INSTALLATION OF TRACING WIRE ON METALLIC & NON-METALLIC PIPE

- A. Tracer wire shall be installed in the same trench and inside bored holes and casing with pipe during pipe installation. It shall be secured to the pipe as required to ensure that the wire remains adjacent to the pipe. The tracer wire shall be securely bonded together at all wire joints with an approved watertight connector to provide electrical continuity, and it shall be accessible at all tracer wire access points.
- B. Except for approved spliced-in repair or replacement connections, tracer wire shall be continuous and without splices from each tracer wire access point.
- C. Tracer wire access points shall be accessible at all new water valve boxes, water meter boxes, blow-offs, ARVs, fire hydrants, irrigation turnouts and access manholes. Concentrations of multiple proposed valves near pipe intersections, i.e. tees or crosses, may require more than one access point assembly in each concrete valve box collar. Tracer wire access points shall be within public right-of-way or public utility easements.
- D. At the point of connection between ductile iron water mains, with any non-iron water main, the tracer wire shall be properly connected to the iron pipe with a cad weld or approved equivalent. Tracer wire welds shall be completely sealed with the use of an approved mastic type sealer specifically manufactured for underground use. Mastic shall be applied in a thick coat a minimum of 1/4-inch thick and shall be protected from contamination by the backfill material with the use of a plastic membrane.
- E. Tracer wire shall be laid flat and securely affixed to the pipe at 8-foot intervals. The wire shall be protected from damage during the execution of the works. No breaks or cuts in the tracer wire or tracer wire insulation shall be permitted. At water service saddles, the tracer wire shall not be allowed to be placed between the saddle and the water main.

- F. At all water main end caps, a minimum of 6 feet of tracer wire shall be extended beyond the end of the pipe, coiled and secured to the cap for future connections. The end of the tracer wire shall be spliced to the wire of a six-pound zinc anode and is to be buried at the same elevations as the water main.

3.9 INSTALLATION OF IDENTIFICATION TAPE

- A. Identification tape shall be installed one foot over centerline of pipe unless otherwise noted on plans.
- B. Warning tape shall be installed two feet below final grade over centerline of pipe.

3.10 TESTING

- A. Testing should be completed as specified in Section 33 05 05.31 "Hydrostatic Testing".

3.11 FLUSHING

- A. Flush water mains and fire hydrants prior to disinfection. Flush water mains as specified in Section 33 01 10.58 "Disinfection of Water Utility Piping Systems".

3.12 DISINFECTION

- A. Disinfect all new and repaired water mains prior to placing them in service. Refer to Section 33 01 10.58 "Disinfection of Water Utility Piping Systems" for disinfection requirements.

3.13 COMPLETION SCHEDULING

- A. Complete water mains as they are installed. Test, flush, sterilize, and place in service each part of the water main which is complete and can be placed in service without preventing work to continue on uncompleted parts of the new water mains.

END OF SECTION 33 14 13