Jones & Henry
ENGINEERS, LTD.

Turkey Creek Regional Sewer District
Enchanted Hills Meter Pit Installation

ADDENDUM 1

October 16, 2026

Plan holders on the Turkey Creek Regional Sewer District, Enchanted Hill Meter Pit Installation, are hereby notified of the following amendments to the contract documents. This Addendum is hereby made a part of the Contract Documents.

REFERENCE NOTE

- A Pre-bid meeting was conducted on October 8, 2026. The minutes to the meeting are attached for reference only, see attached.

SPECIFICATIONS

Table of Contents: Delete and replace with attached pages, Added Section 02558

Bid Form: Delete and replace with attached pages, Add bid items, Water Main & Service Line

Replace Pages 1 through 6 with the attached Bid Form

Section C-01010: Delete and replace with attached pages, Add bid items, Water Main & Service Line.

Replace Pages 1 through 6 with the attached Section 01010.

Section C-02555: Delete and replace with attached pages, Changes to Section 4

Replace Pages 1 through 12 with the attached Section 02555.

Section C-02558: Added Section for Water Services,

Pages 1 through 4 with the attached Section 02558.

RECEIPT OF THIS ADDENDUM MUST BE ACKNOWLEDGED ON PAGE B-1 OF THE BID.

Jones & Henry
ENGINEERS, LTD.

Fluid thinking®
1700 Magnavox Way, Suite 102, Fort Wayne, IN 46804
Phone: 260.482.1920 JHeng.com

Turkey Creek Regional Sewer District

Project: Enchanted Hills Meter Pit Installation
Date: October 8, 2026 @ 10:00 am
Location: 4852 N 1200 W, Cromwell, IN 46732

1. **Sign-In,** please complete the sign-in information, **see attached**

2. **Opening:**
No changes can be made at this meeting. Only an addendum can make changes to the construction documents.

3. **Addendum (none at this time):** An addendum will be issued after this meeting.

4. **Communications & Correspondence**

a.	TCRSD	Tim Woodward
b.	Engineers	John Magsam, email at tcrsd-wm@jheng.com
c.	Inspector	J&H

5. **Bid Date:**
   a. Bid to be held for up to 90 days
   b. Form 96 required
   c. Bid includes base bid ~~with one alternate bid item~~ **only**

6. **Bidding**
Bid Date: October 22, 2026 @ 10:00 am to be opened during a public meeting
Deliver Bids to: Turkey Creek Regional Sewer District Wastewater Treatment Plant; 4852 N 1200 W, Cromwell, IN 46732
   a. Include with your Bid:
      i. Bid Pages C-410-1 through C-410-7
      ii. Bid Security
      iii. Evidence to do business in Indiana.
      iv. Form 96
      ~~v. MBE/WBE~~ **OCRA is not requiring this for this contract.**
   b. Bid Award determination will be based on Base Bid

   c. Apparent Successful Bidder will be required to complete:
      i. OCRA Requirements in Exhibit 2
         1. Certification of Non-Segregated Facilities & Non-Discrimination
         2. Payroll Reporting (weekly or monthly) for Contractor & all Subcontractors
            a. Wage/Fringe Benefit Certifications
         3. Attachment J, BABA Certification
         4. Bidder's List Form
   d. Davis Bacon Requirements, to be updated Friday before Bid Opening

7. Contract Time / Liquidated Damages (page A-1):

Approximate Start Date	December – January
Substantial Completion	120 days from Notice to Proceed date
Final Completion	130 days from the Notice to Proceed date
Liquidate Damages	$100.00 per day

8. Description of the Work

To furnish and install 70 new meter pits and owner supplied meters.

9. General & Supplementary Conditions, (Contractor to review in detail)

a. Insurance Requirements (see pages SC-5):

i. Separate Policy:

ii. Builders Risk

10. Payment:

a. Once a month, third Mondays. **Engineer will need 10 days before the board meeting for review. OCRA will take around 30 days from board approval**

11. General:

a. Contractor to notify residents of parking restrictions

b. Pressure testing

12. Other Comments and Discussions

Service line vary from 3/8 to 1" lines. The District does not have records for service line. The contractor will need to have fittings for all sizes.

Some existing shut off valves might be out of right-of-way. The District has right-of-entry for all properties. The meter pits are to be installed in right-of-way. There are some properties (10-12) were the existing water main & placement of the meter pit might be challenging. We will work with the contactor & District to determine the best location for these meter pits.

Wate mains in the area is asbestos cement pipe that was installed in the 60s. The location and size of the pipe has not been recorded vary well. It is recommented to pothole for the water main if a meter pit is near it.

The District will add service line items and water main repair clamps to the project.

Respectfully submitted,



JONES & HENRY ENGINEERS, LTD.

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1700 Magnavox Way, Suite 102, Fort Wayne, IN 46804
Phone: 260.482.1920 JHeng.com

Turkey Creek Regional Sewer District
Construction Meeting

Project: **Fascination Place Water Main Improvements**

Date: September 24, 2026 @ 10:00 a.m.

Location: 4852 N 1200 W, Cromwell, IN 46732

Name	Representing	Phone Number	Email (optional)
John Magsam	J+H	260-482-8304	
Grant Hove	J+H	765-721-3422	
Mike Delong	TCRSD	260-564-3411	
Jim Foor	TCRSD	765-860-4112	
James Young	TCRSD	574-518-1668	
Andrew McKeeman	SLB	812-803-0290	
Jeff Hershal	J+H	260-437-3907	
Andy Boxberger	Constr	260-423-9411	
Timothy Schuler		574-529-6098	
James Underwood	SLB	by Video	

TABLE OF CONTENTS

	Page
C-111 Notice for Bids	4 pgs
C-200 Instruction to Bids	8 pgs
C-410 Bid Form	5 pgs
Contractor's Application for Payment	5 pgs
C-510 Notice of Award	1 pg
C-520 Agreement Between Owner and Contractor	8 pgs
C-550 Notice to Proceed	1 pg
C-610 Performance Bond	3 pgs
C-615 Payment Bond	3 pgs
C-620 Contractor's Application for Payment	
C-625 Certificate of Substantial Completion	2 pgs
C-700 General Conditions	71 pgs
Article 1 - Definitions and Terminology	
Article 2 - Preliminary Matters	
Article 3 - Documents: Intent, Requirements, Reuse	
Article 4 - Commencement and Progress of the Work	
Article 5 - Availability of Lands; Subsurface and Physical Conditions; Reference Points	
Article 6 - Bonds and Insurance	
Article 7 - Contractor's Responsibilities	
Article 8 - Other Work at the Site	
Article 9 - Owner's Responsibilities	
Article 10 - Engineer's Status During Construction	
Article 11 - Amending the Contract Documents; Changes in the Work	
Article 12 - Claims	
Article 13 - Cost of the Work; Allowances; Unit Price Work	
Article 14 - Tests and Inspections; Correction, Removal or Acceptance of Defective Work	
Article 15 - Payments to Contractor; Set Offs; Completion; Correction Period	
Article 16 - Suspension of Work and Termination	
Article 17 - Final Resolution of Disputes	
Article 18 - Miscellaneous	
C-800 Supplementary Conditions	16 pgs
Exhibit 1 - Wage Rates	44 pgs
Exhibit 2 – Funding Requirements - OCRA	
C-941 Change Order	1 pg
C-942 Field Order	1 pg
Foreword to Technical Specifications	

DIVISION 1 - GENERAL REQUIREMENTS

01010	Definition of Contract Items	1 – 6
01043	Coordination and Control of the Work	1 - 10
01090	Reference Standards	1 - 2
01300	Submittals	1 - 8
01310	Construction Schedules and Documentation	1 - 4
01350	Common Product Requirements	1 - 4
01410	Laboratory Services	1 - 4
01500	Maintaining Traffic	1 - 4
01565	Temporary Restoration and Maintenance of Pavements, Curbs, and Walkways	1 - 4
01568	Pollution Control	1 - 12
01800	Construction Survey Work	1 - 6

DIVISION 2 - UNDERGROUND, PAVEMENT, AND SITE WORK

02100	Clearing and Grubbing	1 - 4
02110	Removal of Structures and Obstructions	1 - 6
02200	Excavation and Backfill	1 - 12
02555	Pressure Pipe	1 - 12
02558	Water Services	1 - 4
02559	Water Meter Pits	1 - 4
02600	Pavements, Curbing, and Walks	1 - 8
02800	Sodding, Seeding, and Mulching	1 - 4

IF ANY OF THE PAGES LISTED ABOVE ARE NOT INCLUDED IN THESE CONTRACT DOCUMENTS, PLEASE ADVISE.

END OF SECTION

BID FORM

Enchanted Hills Meter Pits

ARTICLE 1 – QUOTE RECIPIENT

1.01 This Bid is submitted to:

Turkey Creek Regional Sewer District
4852 North 1200 West
Cromwell, Indiana 46732

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 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

Addendum No.	Addendum, Date

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 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 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.

E. 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.

F. 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.

G. 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.

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

I. 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. Bidder has not solicited or induced any individual or entity to refrain from bidding; and

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

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the price(s) included on C-410-3 and C-410-4. Bidder shall fill in all blanks on the Bid Form.

UNIT PRICE QUOTE

Quoter acknowledges that (1) each Unit Price includes an amount considered by Quoter 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 Quote, and final payment for all unit price Quote items will be based on actual quantities, determined as provided in the Contract Documents.

Item No.	Description	Estimated Quantity	Unit	Unit Cost in Numbers		Unit Price in Words	Total Estimated Cost of Item	
1	Mobilization/Demobilization	1	LS					
2	Maintenance of Traffic	1	LS					
3a	Meter Pit	70	EA					
3b	¾-inch Meter Install Only	70	EA					
3c	Lead Service Line Replacement	1	LS	$8,000	00	Eight thousand dollars zero cents	$8,000	00
4	Seeding & Mulching	1,000	SYD					
5	Record Documentation	1	LS					
6a	5/8-inch Service Line	200	LF					
6b	Water Main, 4-inch, PVC	20	LF					
6c	Water Main, 6-inch, PVC	20	LF					
6d	Water Main, 8-inch, PVC	20	LF					

Item No.	Description	Estimated Quantity	Unit	Unit Cost in Numbers		Unit Price in Words	Total Estimated Cost of Item	
6e	Water Main Repair Clamp, 4-inch	2	EA					
6f	Water Main Repair Clamp, 6-inch	2	EA					
6g	Water Main Repair Clamp, 8-inch	2	EA					
Total Bid Amount:								

ARTICLE 6 – TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete within 120 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 130 calendar days after the date when the Contract Times commence to run.

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

ARTICLE 7 – ATTACHMENTS TO THIS BID

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

A. Evidence of authority to do business in the state of the Project.

B. Required Bid Security.

C. Required Bidder Qualification Statement with supporting data.

D. List of Proposed Subcontractors.

E. List of Proposed Suppliers.

F. List of Project References.

G. Contractor's License No.: _____ **[or]** Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids; *[List other documents and edit above as pertinent]*

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)

SECTION 01010
DEFINITION OF CONTRACT ITEMS

PART 1 GENERAL

1.01 FOREWORD

A. This Section describes the various Contract Items listed in the Bid.

1.02 WORK NOT INCLUDED

A. Under each Item the Contractor shall furnish all labor, materials, tools, plant equipment, supplies, maintenance of equipment, heating, lighting and power, insurance and bonds, coordination, and all Work and in accordance with the Specifications Parts A, B, and Divisions 1 through 16 of Part C and necessary to complete the Work in accordance with the obvious or expressed intent of the Contract Documents.

B. The removal and proper disposal of debris generated by work under each Item shall be included in that corresponding Item.

1.03 PAYMENT

A. The lump sum and unit prices stated in the Bid shall be payment in full for the completion of all Work specified and described or required to be included in the Contract, complete, and ready for use.

1.04 CONTRACT ITEMS

A. The contract items are defined on the following pages.

ITEM 1
MOBILIZATION AND DEMOBILIZATION

1.01 DESCRIPTION

A. This Item is intended to pay non-recurring cost to the Contractor not recovered under other pay Items of the Contract.

B. This Item shall include, but not be limited to, the cost for moving equipment in and out, performance and payment bonds, insurance, utility connection cost, and other expenses associated with preparation for construction in accordance with the requirements of the Contract Documents.

C. This Item is intended to be in accordance with the Supplemental Conditions SC 15.01A.

1.02 WORK NOT INCLUDED

D. Any Work specifically included under other Bid Items.

1.03 DEFINITION OF ITEM

A. Item 1 - Mobilization/Demobilization.

1.04 MEASUREMENT & PAYMENT

A. The lump sum stated in the Bid shall be full compensation for all Work required under each Item.

B. The Contractor is reminded of the requirements of Supplemental Conditions Section 15.01.A regarding Mobilization and Demobilization costs as a percentage of the total project cost.

C. Payment shall be in accordance with Supplemental Conditions SC 15.01A. The Engineer may reduce the amount to be paid under each Item if the percentage requested is not represented by the actual amount performed.

ITEM 2
MAINTENANCE OF TRAFFIC

2.01 DESCRIPTION

A. This Item shall include the furnishing and maintaining of measures required to maintain traffic through or around the proposed Work.

B. This Item shall include detour routes as specified in the Contract Documents.

2.02 WORK NOT INCLUDED

Not used.

2.03 DEFINITION OF ITEM

A. Item 2 - Maintenance of Traffic.

2.04 MEASUREMENT & PAYMENT

A. The quantity to be paid for under Item 4 shall be lump sum for all maintenance of traffic measures.

ITEM 3A THROUGH 3C
WATER REPAIR / METER PITS

3.01 DESCRIPTION

A. Under these Items, the Contractor shall furnish and perform all Work necessary for the installation of the meter pits shown on the Drawings and specified, in conformance with relevant sections of the Specifications.

B. These Items shall include all Work to install the meter pits, including but not limited to the following: excavation; hauling excess spoil material from Site; backfill; compaction; bedding; pipe materials; fittings; construction, and related Work such as performing material testing.

C. The removal of existing water services, including existing fittings, valves, structures and other associated appurtenances shall be included under these items.

D. Reinstatement of existing water services onto the new water line shall be included under these Items.

E. Repairing of water services which were damage and not planned to be replaced, by Contractor as a result of the construction, will be at the Contractor's expense.

3.02 WORK NOT INCLUDED

F. All repair of existing utilities damaged during water service construction is included under these Items.

A. Pavement replacement within Contract limits is included for payment under other Items.

B. Restoration of landscape surface improvements including seeding, mulching, and fertilizing all disturbed lawn areas shall be included under these Items.

3.03 DEFINITION OF ITEMS

A. Item 3a – Includes. Single Water Meter Pit

B. Item 3b – Includes ¾-inch Water Meter, Install Only

C. Item 3g – Includes ¾-inch Lead Service Line Replacement (Undistributed)

3.04 MEASUREMENT

A. The quantities to be paid under Item 3a & 3b shall be each water meter pit & meter installed in accordance with the Specifications and Drawings

B. The quantities to be paid under Item 3c shall be a per foot price allowance for any lead service lines that need replaced with ¾-inch service tubing from meter pit to the building furnished and installed in accordance with the Specifications and Drawings.

3.05 PAYMENT

A. The unit price stated in the Bid for Item 3a & 3b shall be full compensation for each meter pit, & meter measured, as specified and required.

B. The unit price stated in the Bid for Items 3c shall be full compensation for each linear foot of tubing, so measured, as specified and required.

ITEM 4
SEEDING & MULCHING

4.01 DESCRIPTION

A. Under this Item the Contractor shall furnish and install seed and mulch where ordered by the Owner. This Item includes planting, fertilizing, watering, and grading of the area to receive seed and mulch. Contractor is allowed a 10’ x 10’ area for seeding for each meter pit.

4.02 WORK NOT INCLUDED

A. All areas beyond reasonably anticipated limits that are damaged by the Contractor, shall have seed and mulch installed at the Contractor’s expense.

4.03 DEFINITION OF ITEMS

A. Item 4 – Seeding & Mulching

4.04 MEASUREMENT

A. The quantity to be paid for under Item 6 shall be the measured quantity in square yards as specifically ordered by Owner.

4.05 PAYMENT

A. The Item 4 shall be full compensation for each square yard of seed & mulch installed, fertilized, and watered.

ITEM 5
RECORD DOCUMENTS

5.01 DESCRIPTION

A. Under this Item the Contractor shall furnish and perform all work necessary for the submission of the marked-up drawings, tap location sheets, and chances to the construction documents, in conformance with relevant sections of the Specifications

B. The Owner & Engineer shall review document each pay request to ensure markups are adequate for final submission. Partial payment can be requested if markups are provided.

C. Contractor to provide GPS location of meter pits with digital photographs (minimum of 2), and sketch drawing.

5.02 WORK NOT INLCUDED

Not Used

5.03 DEFINITION OF ITEMS

A. Item 5 - Record Documentation.

5.04 MEASUREMENT & PAYMENT

A. The quantity to be paid for under Item 5 shall be lump sum for Record Documents furnished and approved as specified.

ITEM 6A THROUGH 6C
WATER REPAIR ITEMS

6.01 DESCRIPTION

A. Under these Items, the Contractor shall furnish and perform all Work necessary for the installation and / or repair of service lines and water mains as required for the meter pit installation

B. These Items shall include all Work to install the service lines and / or water main, including but not limited to the following: excavation; hauling excess spoil material from Site; backfill; compaction; bedding; pipe materials; fittings; construction, and related Work such as performing material testing.

C. The removal of existing water services, including existing fittings, valves, structures and other associated appurtenances shall be included under these items.

D. All repair of existing utilities damaged during water service construction is included under these Items.

E. Reinstatement of existing water services onto the new water line shall be included under these Items.

F. Repairing of water services which were damage and not planned to be replaced, by Contractor as a result of the construction, will be at the Contractor's expense.

G. Repairing of existing water Asbestos Cement water main with approved clamp

H. Repairing of existing water with PVC piping

I. Restoration of landscape surface improvements including seeding, mulching, and fertilizing all disturbed lawn areas shall be included under these Items.

6.02 WORK NOT INCLUDED

A. Pavement replacement within Contract limits is included for payment under other Items.

6.03 DEFINITION OF ITEMS

A. Item 6a – Includes 5/8-inch Service Line

B. Item 6b – Includes Water Main, 4-inch, PVC

C. Item 6c - Includes Water Main, 6-inch, PVC

D. Item 6d- Includes Water Main, 8-inch, PVC

E. Item 6e – Includes Water Main Repair Clamp, 4-inch

F. Item 6f - Includes Water Main Repair Clamp, 6-inch

G. Item 6g - Includes Water Main Repair Clamp, 8-inch

6.04 MEASUREMENT

A. The quantities to be paid under Item 6a through 6d shall be each line or pipe installed in accordance with the Specifications and Drawings

B. The quantities to be paid under Item 6e thru 6g shall be furnished and installed for each clamp in accordance with the Specifications and Drawings.

6.05 PAYMENT

C. The unit price stated in the Bid for Item 6a through 6d shall be full compensation per linear foot of pipe installed as measured, as specified and required.

D. The unit price stated in the Bid for Item 6e through 6g shall be full compensation for each clamp measured, as specified and required.

END OF SECTION

SECTION 02555
PRESSURE PIPE

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing pressure pipe of the materials, class, size, and length as shown on the Drawings, specified, or directed.

B. Pressure pipelines constructed under this Section shall include but not be limited to water mains and sewer force mains.

C. This Section shall include furnishing and installing all required pipe, fittings, specials, adaptors, closure pieces, tees, bends, joint restraints, granular pipe bedding material, concrete used for encasement or bedding, removing and relaying existing pressure pipe as required, providing temporary services and temporary blocking or harnessing, making connections to new and existing pressure pipe, installing temporary bulkheads and plugs, testing pipe, cleaning and sterilizing water mains, and other work incidental to the pressure pipe installation, unless specifically included under other Items.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for Review:

   a. Manufacturer's Shop Drawing indicating physical dimensions, joint details, fittings, and special details for each size, type, and class of pipe furnished for the project. Shop Drawings shall also note salient features of a specific pipe, i.e., concrete strength and reinforcing details.

   b. Samples, if requested by the Engineer.

2. Information for the Record:

   a. Manufacturer's certification indicating that the pipe and joints meet Specifications for each production run for each size, type, and class of pipe furnished. The Engineer may request test results to verify certification.

1.03 PRODUCT HANDLING

A. Care shall be taken in handling and transporting to avoid damaging pipes and their coatings. Loading and unloading shall be accomplished with the pipe under control at all times and under no circumstances shall the pipe be dropped. Pipe shall be securely

wedged and restrained during transportation and supported on blocks when stored in the shop or field.

PART 2 PRODUCTS

2.01 PRESSURE PIPE SPECIFICATIONS

A. Ductile Iron Pressure Pipe (DIP):

1. Ductile Iron Pressure Pipe shall conform to ANSI A21.51 or AWWA C151 and shall be pressure class 350 psi for sizes 12-inch and below, and pressure class 300 psi for larger sizes unless otherwise specified herein.

2. Pipe buried underground, unless otherwise specified, shall be jointed with rubber gasket (push-on) type joints and shall meet the requirements of AWWA C111 for push-on joints. The gasket shall be a single molded rubber ring fitted into a specially shaped recess in the bell forming a pressure tight seal. The spigot end of each pipe shall be marked to indicate when the pipe is “home.”

3. Internal restrained bell joints, wherever shown or required, shall be mechanical joint with retainer glands, US Pipe TR Flex Joint System, US Pipe Field LOK Gasket System, or equal.

4. Interior Coating

   a. Force Mains

      1) Pipe interiors shall be lined on the interior of the pipe with Protecto 401 ceramic epoxy coating or approved equal.

      2) Pipes lined with ceramic epoxy coatings shall be labeled “for sewer only.”

      3) Epoxy ceramic coatings are not recommended for sewers where chemical injection is planned.

      4) Lined pipes shall be handled from the exterior of the pipe only. Minor damage to the epoxy coating may be repaired in the field in accordance with the liner manufacturer.

      5) Major damage to the liner that cannot be repaired in the field shall result in the pipe segment being rejected and returned to the factory for recoating.

      6) Lined pipe using Field Lok or internal joint restraints shall not be homed to the bell shoulder to avoid damage to the liner.

5. Exterior Coating - All buried ductile iron pipe shall be coated on the outside with a standard petroleum asphaltic coating, 1 mil thick, meeting AWWA C110, unless otherwise specified. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun, and shall be strongly adherent to the pipe. The coating materials, after drying 48 hours, shall impart

no objectionable color, odor, or taste to water standing in contact with the coating for a minimum of 48 hours.

6. Where approved, the petroleum asphaltic material specified for interior lining may be used for exterior coating of pipe buried underground.

7. Bronze wedges shall be used at all push-on joints (two per joint). The wedge shall be driven into the push-on joint to provide electrical conductivity between pipes

B. Polyvinyl Chloride Pipe (PVC and PVCO):

1. Small Diameter Piping – 3-inches and smaller

a. Pressure pipes and fittings 3 inches or smaller in diameter shall be PVC material and shall consist of Class 12454-B rigid PVC compound in conformance with ASTM D1784. Pipe shall be ASTM D1785 Schedule 80 or ASTM D2241, SDR 21 with hydrostatic design stress of 2,000 psi. All joints for ASTM 1785 pipe, unless otherwise shown on the Drawings, shall be solvent welded in conformance with ASTM D2855. Joint solvent shall be as recommended by the pipe manufacturer and approved for the material to be conveyed.

b. Joints for ASTM D2241 pipe shall be push-on gasketted. Joint restraint for ASTM D2241 pipe shall be provided where specified or shown on the Drawings and shall be United Series 1300 or 1350, or equal. The fittings for ASTM D1785 pipe shall be Schedule 80 and shall conform to ASTM D2467. Fittings for ASTM D2241 pipe shall be ductile cast iron and shall conform to ANSI 21.10/AWWA C110 with mechanical joint.

2. Medium Diameter – 4-inches and larger

a. PVC or PVCO pipe 4 inches to 30-inches in diameter shall meet the requirements of AWWA C900 or AWWA C909, and unless otherwise specified, shall be Pressure Class 235 (C909).

b. PVC pipe 36-inches in diameter and larger shall meet the requirements of AWWA C909 and unless otherwise specified shall have a standard thermoplastic pipe dimension ratio (D.R.) of 18 or less.

c. Pipe OD shall be equivalent to ductile iron pipe OD for the same nominal pipe size.

d. Pipe shall have integral bell push-on type joints meeting the requirements of ASTM D3139.

e. Joints for pipe shall be push-on gasket style. Gaskets shall meet the requirements of ASTM F477 for high-head (50 feet of head or higher) applications.

f. Restrained Joints, where required or shown, shall meet the requirements of the UNI-Bell Plastic Pipe Association Performance Standard UNI-B-13, similar to the following

1) EBAA Iron Sales, Inc., Series 2000 PV for mechanical joints.

2) For push on joints; Series 1500 for C-900 push-on joints and Series 1900 for C-909 push on joints.

C. Prestressed Concrete Pressure Pipe (PCCP): N/A

2.02 PRESSURE PIPE FITTINGS

A. Ductile Iron Pipe Fittings:

1. All Ductile Iron Pipe, PVC or PVCO pressure pipe shall utilize Ductile Iron Pipe fittings with mechanical joints as specified in this section.

2. Mechanical joint fittings shall be ductile iron and conform to ANSI A21.10 or AWWA C110 and ANSI A21.53 or AWWA C153. All fittings shall have a pressure rating of 250 psi for all pipe sizes unless otherwise specified.

3. Fittings shall have mechanical joints with retainer glands unless otherwise specified or shown. Retainer glands shall be ductile iron. The restraining mechanism shall impart multiple wedging actions against the pipe. Restraining devices shall be of heat treated ductile iron. Twist-off nuts shall be used to ensure proper actuation of the restraining device. The mechanical joint retainer gland shall be Ebaa Iron, Inc., Series 1100 Megalug, or equal.

4. Mechanical joints

a. Mechanical Joints shall conform to ANSI A21.11 (AWWA C111), except as specified herein.

b. The mechanical joint retainer gland shall be Ebaa Iron, Inc., Series 1100 Megalug, or equal

c. Mechanical couplings, if required or permitted, shall be Dresser Style 38, or equal.

d. Fittings shall be lined as specified for ductile iron pipe for the service noted in the schedule.

5. Bell Restraints

a. For new PVC pipe bell restraints shall be EBAA Iron Series 2800 Restrain Harnesses or approved equal.

b. For new Ductile Iron Pipe bell restraints shall be EBAA Iron Series 1700 MEGA Lug Harnesses or approved equal.

c. Split ring harnesses are not permitted for new pipe installations.

B. Prestressed Concrete Pressure Pipe shall have a rubber O-ring gasket confined between two metal surfaces unless detailed or specified otherwise. The joint, materials, and its manufacture shall be in accordance with AWWA C301.

2.03 ACCESSORIES

A. Nuts and bolts for buried pipe shall be as follows:

1. Nuts and bolts used in wall castings shall be of stainless steel Type 316.

2. Nuts and bolts encased in grout on concrete pressure pipe shall conform to recommendations of the pipe manufacturer.

3. Nuts and bolts used on buried pressure pipe and fittings in contact with earth shall be Cor-Blue coated low alloy steel and have a minimum yield strength of 45,000 psi complying with ANSI A21.11 and AWWA C111.

4. All other nuts and bolts shall be low carbon steel in conformance with the chemical and mechanical requirements of ASTM A307, Grade B. Higher strength bolts will be acceptable.

B. Tracing Wire shall be installed on all pipe.

1. Direct Burial No. 12 AWG Solid (0.0808-inch diameter), 21% conductivity copper-clad annealed high carbon steel high strength tracer wire, 1150-pound average tensile break load, 45 mil, high molecular weight, high density polyethylene jacket complying with ASTM D1248, 30 volt rating. SoloShot™ extra high strength No. 1245 as manufactured by Copperhead Industries, LLC, or equal. Wire shall be secured to the pipe with tape at intervals not to exceed 10 feet.

a. Tracer wire installed on pipe by horizontal directional drilling shall be continuous without any splices.

b. Heat shrink splices are permissible only on tracer wire at pipe connection.

2. Tracer wires shall terminate inside all structures including but not limited to, air relief structures, valve box assemblies, indicated on plans. Tracer wire shall extend 4-feet above the opening on structures.

3. Tracer wire shall be tested for continuity after installation and considered acceptable when a continuous read is obtained between terminals.

C. Utility Markers and Locator stations shall be installed as noted in Part 4 and on the drawings.

1. Utility Markers shall be flexible above ground, impact resistant, UV stabilized fiberglass Reinforce composite material. Utility markers shall be a minimum of

3-3/4 inches wide and 66 inches long. Color shall be integral to the material and selected by the Owner.

2. Locator stations shall be impact resistant, UV stabilized, and fiberglass reinforced composite material, 3 inches in diameter. Locator stations shall have a polycarbonate cap assembly with brass or stainless-steel terminal board for tracer wire. The cap assembly color shall be selected by the Owner.

3. Utility markers and locator stations shall have a 3-inch-wide by 13-inch-long label readable from 100 feet. Label color shall be selected by the Owner. The wording of the label shall be as specified in Part 4.

4. A polypropylene identification tape marked “buried water main” shall be installed 24 inches above all water mains installed by open-cut methods. The tape shall be blue.

2.04 POLYETHYLENE ENCASEMENT FOR DUCTILE IRON PIPE AND FITTINGS

A. Buried ductile iron pipe and fittings shall be encased in a loose wrapping of polyethylene film at the time of installation. The polyethylene material and method of installation shall meet the requirements of AWWA C105/A21.5.

2.05 SOURCES QUALITY CONTROL

A. Pipe Manufacturer’s Certification:

1. The pipe manufacturer’s certificate shall state that the materials have been sampled and tested in accordance with the provision for and meet the requirements of the designated specification and shall be signed by an authorized agent of the seller or the manufacturer.

2. A test results report shall accompany the manufacturer’s certificate, if requested by the Engineer. The report shall compare test results to Specification requirements. Test specimens shall be selected in conformance with the designated specification for each production run of each size, type, and class of pipe furnished and further, that in case tests are unsatisfactory, additional tests shall be made to the maximum number in the referenced ASTM Specification.

PART 3 EXECUTION

3.01 PREPARATION OF TRENCH

A. Trench excavation shall conform to requirements of Section 02200.

B. Unless otherwise specified or called for on the Drawings, the width of trench at the top of pipe 24 inches in diameter or less shall not exceed the outside diameter of the pipe or encasement, plus 9 inches on each side of the pipe measured to the face of the trench or to the back of the sheeting when used. For pipe having a diameter greater than 24 inches, the width of trenches at the top of the pipe shall not exceed the outside

diameter of the pipe or encasement, plus 15 inches on each side of the pipe measured as specified above.

C. Unless otherwise directed or called for on the Drawings, all sewer trenches shall be excavated below the proposed pipe invert as required to accommodate the depths of pipe bedding material as scheduled on the Drawings.

3.02 PIPE INSTALLATION

A. All pipe fittings and specials shall be laid in accordance with the manufacturer's instructions, with AWWA C600, and as supplemented herein.

B. Precautions shall be taken during construction to protect the pipe interiors, fittings, and valves against contamination. Pipe interiors shall be thoroughly cleaned of dirt and foreign matter before laying, by brushing, swabbing or other method approved by the Engineer, and means shall be provided to prevent entry of dirt during the progress of installation. Groundwater shall be kept out of the pipe at all times.

C. Bedding and Backfilling:

1. Bedding and backfilling shall be in conformance with Section 02200.

2. At joints, enough depth and width shall be provided to permit working entirely around the pipe as needed to make the joints in the proper manner.

D. Handling and Cutting:

1. Suitable tools and appliances for cutting, handling, and laying of the pipes and special castings shall be used and care shall be taken to prevent damage to pipe coatings.

E. Pipe Laying:

1. Pipe and appurtenances shall be installed true to line, grade, and location; with joints centered, spigots home; pipe properly supported and restrained against movement; and all valve stems plumb.

2. All elbows, tees, plugs, etc., shall be properly anchored, blocked, or otherwise restrained to prevent movement of the pipe in the joints due to internal or external pressure.

3. The open ends of all pipes and special castings shall be plugged or otherwise closed with a watertight plug to the approval of the Engineer before leaving the Work for the night, and at other times of interruption of the Work. All pipe ends which are to be permanently closed shall be plugged or capped and restrained against internal pressure.

4. Pipe deflections shall be made in accordance with UniBell's Handbook of PVC Pipe. At the time of this Specification's revision the current version of the UniBell handbook is the 5th edition, with deflections covered in section 8.2.2. The maximum deflection for a joint shall not be exceeded during pipe laying.

F. Pipe Jointing:

1. Pipes that are field cut shall be properly beveled to provide a beveled end to be inserted into a pipe bell.

2. Gaskets - Just prior to joining the pipes, the surfaces of the joint rings shall be wiped clean and the joint rings and rubber gaskets shall be liberally lubricated with an approved type of vegetable oil soap. The spigot end, with the gasket placed in the groove, shall be entered into the bell of the pipe already laid, making sure that both pipes are properly aligned. Before the joint is fully "home," the position of the gasket in the joint shall be determined by means of a suitable feeler gauge supplied by the pipe manufacturer. If the gasket is found not to be in proper position, the pipes shall be separated and the damaged gasket replaced. The pipe is then forced "home" firmly and fully.

3. Concrete Pressure Pipe Diapers - A band at least 5-1/2 inches wide shall be placed around the outside of concrete pressure pipe, over each joint as recommended by and available from the pipe manufacturer. This band shall serve as a form for placing a 1:2 cement mortar grout in the external recess formed by the face of the bell and the shoulder of the spigot. If the air temperature is below 40 degrees the spigot, bell, and mortar shall be heated. If a reinforced paper joint band is used, it shall be drawn up tight around the pipe and the backfill tamped against it up to the springline before pouring the grout. If a cloth band is used, it shall be wired around the outside of the pipe and the grout poured before backfilling.

4. Concrete Pressure Pipe Interior Joints - The interior joint recess of pipe 24 inches and larger shall be pointed using a non-shrinking mortar specified in Section 02550. The inside surface shall be struck off smooth with the pipe interior. On pipe 20 inches and smaller a rope type mastic or trowelable mastic shall be affixed to the concrete face of the bell socket just prior to pushing the spigot into the bell, such that the mastic material squeezes to fill the internal joint recess. Mastics that are detrimental to rubber gaskets shall not be used. Similarly, primers to be used in conjunction with rope type mastics must be kept off gaskets and sealing surfaces of joint rings.

5. Electrical Continuity - Where specified, electrical continuity shall be provided in concrete and steel pressure pipes by welding an insulated #4RR copper cable across joints. The cable shall be welded to the steel of bell and spigot of concrete pressure pipe and across joints including each piece of coupling on jointed steel pipes.

G. Anchoring Pipe:

1. Disjointing hydrostatic pressure at bends, plugs, tees, and wyes shall be counteracted by thrust blocks, restrained joints, or reinforced concrete anchorage as directed on the Drawings or specified.

2. Thrust blocks shall be installed only where directed or specifically called for on the Drawings, unless otherwise specified. Installation shall be in conformance with Drawings.

3. Approved joint restraints shall be installed in locations shown or scheduled on the Drawings.

4. Reinforced concrete joint anchorage shall be installed in conformance with the Drawings.

H. Connections to Valves and Mechanical Joint Fittings.

1. When connecting pipe sections to MJ fittings, the bevel on the pipe spigot shall be removed by cutting the pipe at a right angle ot the centerline.

2. When connection pipe sections to MJ butterfly valves a bevel shall be placed on the spigot end of the pipe inserted into the butterfly valve to prevent binding of the butterfly valve during closure.

3.03 PIPE PROTECTION

A. Detectable marking tape shall be installed in the trench of each non-metallic pipe. The tape shall be installed directly above the force main at the depth recommended by the manufacturer. The tape shall extend the full length of the force main, and shall be imprinted with a continuous warning message repeated at least every 36 inches. The warning message shall state that a sewer line is buried below. The tape shall consist of one layer of aluminum foil laminated between two layers of inert plastic film. The lamination bond shall be strong enough that the layers cannot be separated by hand. The tape shall be inductively located and conductively traceable using a standard pipe and cable locating device.

B. Utility markers and locator stations shall be installed with 42 inches to 48 inches above ground.

3.04 FIELD INSPECTION

A. All pipe sections, specials, and jointing materials shall be carefully examined for defects and no piece shall be laid that is known to be defective. Any defective piece discovered installed shall be removed and replaced with a sound one in a manner satisfactory to the Engineer at the Contractor’s expense.

B. Defective material shall be marked with lumber crayon and removed from the job site before the end of the following day.

3.05 PRESSURE AND LEAKAGE TESTS

A. The Contractor shall furnish the pump, pipe connections, taps, gauges, auxiliary water container, bulkheads, plugs, and other necessary equipment and make pressure and leakage tests of all lines unless otherwise directed by the Engineer.

B. Any concrete thrust blocks along the test section of pressure pipe shall have achieved required strength prior to introducing pressure into the pipe for testing.

C. Tests shall be conducted on all pipelines or valved sections thereof as directed by the Engineer. Testing of pipelines laid in embankments or bedded in concrete shall be done prior to backfilling or placing concrete cover unless otherwise permitted by the Engineer. Tests on lines anchored or blocked by concrete shall not be conducted until the concrete has taken permanent set. A maximum of 1,000 feet of pipe may be included in a test section. All valves shall be tested for leakage.

D. The line or section thereof to be tested shall be filled slowly with water to expel all air. Hydrostatic pressure shall be applied by pumping water from an auxiliary supply. The test pressure shall be maintained two hours minimum and additional time as required for thorough inspection to find any leaks or defects in the force main and appurtenances. The test pressure shall be 100 pounds per square-inch or 50% above the normal operating pressure, whichever is greater. Should the pipe section fail to pass the tests, the Contractor shall find and correct failures and repeat the tests until satisfactory results are obtained.

E. Leakage tests shall be made simultaneously with or following completion of pressure tests of all lines or valved sections thereof. Leakage is defined as the quantity of water added to the pipe under test to maintain the required test pressure for a specified time.

F. Pressure testing shall be performed in accordance with AWWA C600 and C605.

3.06 DISINFECTION OF POTABLE WATER PIPING

A. After the pressure test and prior to disinfecting, the lines shall be thoroughly flushed through hydrants or by other means as approved by the Engineer.

B. The Contractor shall furnish required materials and apparatus and perform the Work of disinfection.

C. All water piping shall be cleaned and disinfected in accordance with AWWA C651 and one of the following:

1. Liquid sodium hypochlorite by means of a suitable solution feed machine or pump. Sodium hypochlorite storage conditions and durations shall be controlled to minimize deterioration.

2. Calcium hypochlorite as tablets, powder. Tablets or powder shall be placed in the water line during construction. The water line shall be filled, carefully, with potable water to produce a uniform solution.

3. Calcium hypochlorite as a water mixture. The calcium hypochlorite powder shall be mixed with water to form a paste and then thinned to a slurry, to be introduced into the pipe by pumping.

D. The dosage of chlorinating agent shall be of the amount to produce a chlorine residual of 40 to 50 parts of chlorine per million. Tests with the DPD drop dilution method shall be made at selected points to determine the residual.

E. Treated water shall be retained in the lines for sufficient time to accomplish the desired disinfection but not less than 12 hours. Valves in the line shall be operated during the retention period.

F. Following disinfection, all treated water shall be flushed from the lines at their extremities until the replacement water throughout the lines shall, upon testing, be chemically and bacteriologically acceptable.

1. Two or more successive sets of samples taken at 24-hour intervals shall indicate microbiologically satisfactory water before the lines are placed into service.

2. Should the initial treatment prove ineffective, the disinfection shall be repeated until the test shows acceptable results.

3. The disposal of heavily chlorinated water shall be coordinated with the Owner and regulatory agencies. The heavily chlorinated water may require the addition of a dechlorinating chemical prior to release to a storm sewer or the environment. The dechlorinating method shall be approved by the Owner and Engineer. The heavily chlorinated water shall not be released to sanitary sewers without permission from the Owner of the sanitary sewer system.

G. All testing shall be done by a laboratory acceptable to the public authority having jurisdiction, and all costs shall be paid for by the Contractor.

PART 4 SPECIAL PROVISIONS

4.01 PIPING SCHEDULE

A. The following letter designations are used in the Piping Schedule:

Material Designation:

DIP - Ductile Iron Pipe
PVC - Polyvinyl Chloride
AC - Asbestos Concrete Pressure Pipe

B. Schedule:

Service	Size	Pressure Class Thickness Class	Material	Remarks
Waer Main	4”	Cl 350	PVC	
Waer Main	6”	Cl 350	PVC	
Waer Main	8”	Cl 350	PVC	

C. Schedules are not guaranteed to be complete. All piping shown on the Drawings or specified shall be furnished and installed by the Contractor whether or not listed in the above schedule.

END OF SECTION

SECTION 02558
WATER SERVICES

PART 1 GENERAL

1.01 SCOPE

A. This Section includes furnishing and installing corporation stops and copper or PET (PEXa) tubing needed to connect existing services to the new water lines, and curb stops and boxes for new service where shown on the Drawings or directed by the Engineer.

B. Reconstruction of existing water services and installation of temporary services shall be in conformance with requirements of this Section.

1.02 SUBMITTALS

A. Submittals shall be in accordance with the requirements of Section 01300 and shall include:

1. Shop Drawings for review:

a. Manufacturer's assembly drawing and parts list of the corporation stops, curb stops, and curb boxes indicating materials of construction and model numbers.

b. Manufacturer's recommendations for installation.

c. Manufacturer of copper tubing and verification of compliance with Specification.

PART 2 PRODUCTS

2.01 CORPORATION STOPS

A. Corporation stops shall be brass and comply with AWWA Specification C-800. They shall have standard AWWA Taper threads and be of the size and type specified in Part 4.

B. Saddles shall be brass with double straps and be placed over a molded rubber gasket. The saddle shall be tapped to receive the corporation stop.

2.02 SERVICE LINES

A. Copper tubing shall be type "K" and comply with ASTM B88.

B. PEXa pipe shall be DR9, copper tubing size in accordance with AWWA C901.

C. Fittings shall be compression, pack joint, or flare type as specified in Part 4 and have threads that conform to "Threads for Underground Service Line Fittings", as specified in AWWA C800.

D. Services installed under existing concrete or bituminous surfaces may be installed by boring, pushing, or using a vibratory mole so that the paved surface is not disturbed, or by open cut.

2.03 COMPONENTS OR ACCESSORIES

A. Curb stops shall be of the type specified in Part 4 and shall be the same size as the connecting corporation stops. The curb stops shall have threads that conform to "Threads for Underground Service Line Fittings" as specified in AWWA C800. The building side of the stop shall be plugged with threaded plastic plug.

B. Curb boxes shall be adjustable and of the style specified in Part 4. Cast iron curb boxes shall be coated with the petroleum asphaltic coating specified in Section 02555.

PART 3 EXECUTION

3.01 INSTALLATION

A. The Contractor shall install saddles and corporation stops on the water line. The Contractor may install corporation stops at the time the pipe is installed or may tap the line under pressure after testing and sterilizing.

B. The Contractor shall bore a hole 1/4 inch larger than the outside diameter of the corporation stop to be used. Saddles shall be installed on water lines. The Contractor shall then center the corporation stop and the saddle over this hole and tighten straps to provide a watertight seal. The saddle and corporation stop shall be installed at the time the mainline is installed, if the location of the service connection is known. If the location of the service connection in unknown at the time the mainline is installed, and upon approval of the Engineer, the line may be tapped under pressure after testing and sterilization.

C. Service Lines:

1. Service lines shall be laid in accordance with Section 02555 and the restoration of all surfaces and all structures shall be in accordance with the appropriate Sections.

2. Service lines shall not be laid until main line has been tested, sterilized, and put in operation.

D. Curb Stops and Boxes:

1. Curb stops shall be installed in the upright position with at least 4-feet of cover at the property line.

2. Curb boxes shall be installed plumb and according to the manufacturer's instructions. The top of all boxes shall be level with final ground surface.

3.02 CONNECTION TO EXISTING SERVICES

A. The Contractor shall install corporation stops and copper tubing to the new water line as specified above. The Contractor shall then shut off existing corporation stop, disconnect existing service from existing water line, and connect new copper tubing to the existing service.

B. If the existing service crosses the new water line, the service shall be cut and connected to new line after the new line is in service. The Contractor shall dig up and shut off all old corporation stops for any service so connected to the new line.

3.03 EXISTING LEAD SERVICE LINES

A. Existing lead service lines which are encountered shall be replaced from the water line to the first valve inside the building. The Contractor shall immediately notify the Owner of any lead service lines encountered.

PART 4 SPECIAL PROVISIONS

4.01 SERVICE VALVES AND ACCESSORIES

A. Pack Joint Connections:

1. Corporation stops shall be Ford F1000, or equal with CTS outlet coupling.
2. Service saddles shall be Ford 202B, or equal with outlet threaded for the corporation stop.
3. Curb stops shall be Ford B44-M series, or equal with CTS couplings and Minneapolis pattern top.
4. Curb boxes shall be Tyler or Ford extension-type, or equal with Minneapolis pattern base and pentagon-head plug in the lid.

B. Compression Couplings:

1. Corporation stops shall be Ford, or equal with CTS outlet coupling.
2. Service saddles shall be Ford, or equal with outlet threaded for the corporation stop.
3. Curb stops shall be Ford or equal with conductive compression connections and Minneapolis pattern top.
4. Curb boxes shall be Ford extension-type, or equal with Minneapolis pattern base and pentagon-head plug in the lid.

C. Flared Copper Connections:

1. Corporation stops shall be Ford F600, or equal with copper flare outlet connection.
2. Service saddles shall be Ford 202B, or equal with outlet threaded for the corporation stop.

3. Curb stops shall be Tyler, Ford Z22-M Series, or equal with copper flare couplings and Minneapolis pattern top.

4. Curb boxes shall be Tyler or Ford extension-type, or equal with Minneapolis pattern base and pentagon-head plug in the lid.

END OF SECTION