

**Project Name/No.: Russell Ave. & Walnut Ave.
Water Line Replacement
Design Services (WA223)**

Contract No.: 2025-187 (A2)

Project Manager: PW/ C.W. Chan

Approved: _____

**AMENDMENT NO. 2
TO AGREEMENT FOR SERVICES**

THIS AMENDMENT TO THE AGREEMENT FOR SERVICES (“Amendment”) by and between the CITY OF CHINO, a California municipal corporation (“City”) and **Hunsaker and Associates Irvine, Inc.**, a California Corporation (“Consultant”) is effective as of the 24th day of March, 2026.

RECITALS

A. City and Consultant entered into that certain Agreement for Contractual Services dated November 19, 2024, (“Agreement”) whereby Consultant agreed to provide Design Engineering Services for the Walnut Avenue Water Line Replacement Project (WA242).

B. City and Consultant entered into Amendment No. 1 on July 1, 2025, to extend the Term of the Agreement for an additional two Fiscal Year (2025-26 & 2026-27).

C. City and Consultant now desire to amend the Agreement to add to the scope of work to add Russell Avenue with potholing and CCTV for part of Walnut Avenue and to increase the total compensation by \$94,620.

TERMS

1. **Contract Changes.** The Agreement is amended as provided herein.
 - (a) The scope of services provided in Exhibit “A-1” of the agreement is amended to include services as specified in “Exhibit A-2”, attached hereto.
 - (b) The schedule of compensation provided in Exhibit “C-1” of the agreement is amended to include additional scope of services as specified in Exhibit “C-2”, attached hereto.
 - (c) Section 2.1, Contract Sum is hereby revised to increase the Contract Sum by **Ninety-Four Thousand Six Hundred Twenty Dollars and Zero Cents (\$94,620)** for additional design engineering services, and shall read in its entirety as follows:

“For the services rendered pursuant to this agreement, Consultant shall be compensated in accordance with the “Schedule of Compensation” attached hereto as Exhibit “C” and incorporated herein by this reference, but not exceeding the maximum contract amount of **Two Hundred Forty-Four Thousand Four Hundred Fifty Dollars and Zero Cents (\$244,450.00)**.”
2. **Continuing Effect of Agreement.** Except as amended by this Amendment, all provisions of the Agreement shall remain unchanged and in full force and effect. From and after

the date of this Amendment, whenever the term “Agreement” appears in the Agreement, it shall mean the Agreement, as amended by this Amendment to the Agreement.

3. **Affirmation of Agreement; Warranty Re Absence of Defaults.** City and Consultant each ratify and reaffirm each and every one of the respective rights and obligations arising under the Agreement. Each party represents and warrants to the other that there have been no written or oral modifications to the Agreement other than as provided herein. Each party represents and warrants to the other that the Agreement is currently an effective, valid, and binding obligation.

Consultant represents and warrants to City that, as of the date of this Amendment, City is not in default of any material term of the Agreement and that there have been no events that, with the passing of time or the giving of notice, or both, would constitute a material default under the Agreement.

City represents and warrants to Consultant that, as of the date of this Amendment, Consultant is not in default of any material term of the Agreement and that there have been no events that, with the passing of time or the giving of notice, or both, would constitute a material default under the Agreement.

4. **Adequate Consideration.** The parties hereto irrevocably stipulate and agree that they have each received adequate and independent consideration for the performance of the obligations they have undertaken pursuant to this Amendment.

5. **Authority.** The persons executing this Amendment on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Amendment on behalf of said party, (iii) by so executing this Amendment, such party is formally bound to the provisions of this Amendment, and (iv) the entering into this Amendment does not violate any provision of any other agreement to which said party is bound.

[SIGNATURES ON FOLLOWING PAGE]

IN WITNESS WHEREOF, the parties hereto have executed this Amendment on the date and year first-above written.

CITY:

CITY OF CHINO, a municipal corporation

Linda Reich, City Manager

ATTEST:

Natalie Gonzaga, City Clerk

APPROVED AS TO FORM:
ALESHIRE & WYNDER, LLP

APPROVED AS TO CONTENT:

Fred Galante, City Attorney

Hye Jin Lee, P.E., Director of Public Works

CONSULTANT:
HUNSAKER AND ASSOCIATES IRVINE, INC.:

By: _____

Name: Doug Staley
Title: President

By: _____

Name: Kamal Karam
Title: Vice President

Address: 3 Hughes
Irvine, CA 92618

Two corporate officer signatures required when Consultant is a corporation, with one signature required from each of the following groups:
1) Chairman of the Board, President or any Vice President; and 2) Secretary, any Assistant Secretary, Chief Financial Officer or any Assistant Treasurer.



HUNSAKER & ASSOCIATES
IRVINE, INC.

PLANNING
ENGINEERING
SURVEYING
GOVERNMENT RELATIONS

IRVINE
LOS ANGELES
PALM DESERT
RIVERSIDE
SAN DIEGO

Submitted by email

February 9, 2026 (revised 2/27/26)

CITY OF CHINO
ATTN: Chi Wai Chan, Associate Engineer
13220 Central Avenue
Chino, CA 91710

Subject: Proposal for Contract Amendment for Walnut Avenue Water Main Project
Adding Russell Avenue with potholing and CCTV for part of Walnut Avenue

Dear Mr. Chan:

Hunsaker & Associates Irvine, Inc. (H&A) is pleased to submit this proposal for your consideration. Our proposal consists of the following:

- Cover letter with work scope
- Copy of ASTM D2774 Underground Installation of Thermoplastic Pressure Piping
- Exhibit #1 – Russell Avenue potholing plan
- Exhibit #2 – PVC conduits for PRV vaults at Monte Vista and Walnut
- Analysis for Lateral Location Cost
- Cost Breakdown

Hunsaker has augmented our core team with two highly qualified subconsultants to meet the needs of this specific situation

Boudreau Pipeline – Potholing

Boudreau Pipeline Corporation (BPC) was founded by Alan Boudreau in 1996. Since then BCP has grown to more than 260 employees and up to \$60 million in annual revenues. As a Subsurface Utility Engineering (SUE) Company, BPC truly understands the value of gathering good underground utility data prior to construction to eliminate delays and extra costs associated with underground substructures.

National Plant Services – CCTV Investigation

Founded in 2012, National Plant Services has proudly been serving cities and towns throughout the west coast for the last 40 years. They have the expertise to get the toughest jobs done right, and the latest equipment and processes to make it cost effective. National Plant Services offer a wide-range of investigation, evaluation, maintenance and trenchless rehabilitation services, unmatched in the industry.

Investigate Engineering Solutions

Some of this effort has already been done with the expectation that the cost will be covered by this amendment. For example, review of some available information on required cover over PVC pipe found the applicable ASTM standard (attached) which includes the following paragraph:

PRINCIPALS:
FRED GRAYLEE
BRADLEY HAY
KAMAL KARAM
DOUGLAS STALEY
JOSEPH E. WIGHTMAN

FOUNDING PARTNERS:
RICHARD HUNSAKER
TOM R. MCGANNON
JOHN A. MICHLER
DOUGLAS G. SNYDER

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 6.4.2 A minimum cover of 24 in. (610 mm) for pipe shall be required when subjected to heavy overhead traffic. In areas of light overhead traffic a minimum cover of 12 to 18 in. (305 to 457 mm) is required.

Several manufacturers' information will need to be checked for their recommendations including pipe bedding and we will need to review the available geotechnical data for the proposed/existing pavement section on Russell. We will include the conceptual street cross section showing the two City standards and the impact on the pipeline cover. This information will be combined with the potholing results to optimize the proposed pipeline profile with a brief report to the City summarizing the findings and to get City confirmation of the preferred alternative.

Incorporate the Russell line into Walnut PS&E

H&A will update and revise the existing proposed plan and profile based on our investigations and put it (and details for the connections at each end) into the present Walnut plan set, expand the cost estimate to include the Russell facilities and adjust any necessary technical specifications.

Potholing along Russell Avenue

H&A has obtained a cost from Boudreau for the potholes and we have included H&A efforts to survey the locations, process the field data and augment the plan and profile drawing (see attached exhibit).

CCTV along Walnut Avenue

H&A has obtained a cost from National Plant Services for CCTV investigation to locate existing laterals, and we have included H&A efforts to survey the locations, process the field data and augment the plan and profile drawing. We have reduced the initial scope by 50% since we only need the sewer laterals that cross the proposed waterline and not laterals on both sides. As noted in an earlier email, the City can delete this work and include a bid item to address sewer lateral crossings with a unit price basis; however, with the reduced scope and related cost, we believe that this is the more cost-effective strategy.

SCADA Conduits for PRV at Monte Vista and Walnut

H&A will develop a design detail for a set of 3 conduits 4-inch PVC from new cored holes in vault wall of existing PRV vault to new pullbox behind sidewalk and outside of curb return/curb ramp area. NOTE: Existing PVC pipeline at PRV vault has only 3'-3" of cover and conduits will pass above the pipeline (see attached exhibit)

Delete 700 feet Walnut waterline from Central to Tenth

H&A will reduce the scope and budget to address this reduction.

Bid and Construction Support (Russell only)

This task includes response to RFI's and review of submittals as requested by City staff. No attendance at meetings, conference calls or site visits and no involvement in addendums or change orders unless caused by errors and omissions by Hunsaker (those will be done at no charge to the City). Electronic drafting will be done of changes made during construction



from a single redline (combined comments by all involved and inconsistencies resolved) with CAD file provide to City.

Miscellaneous Services

This task is to provide some flexibility for City staff to accommodate minor scope changes that require small budget shifts. Funds will only be used with prior written authorization of City staff.

These tasks cover the added efforts in other areas such as coordination with City staff that are part of the original contract scope, with the exception of the hydraulic modeling being limited to Walnut Avenue pipeline only. The intended outcome is a complete and seamless PS&E package including Walnut Avenue and Rusell Avenue improvements.

Note that 40% of the cost of this amendment is for subconsultant efforts (potholing and CCTV investigation).

Upon approval of this contract amendment, it will require 6-8 weeks to "catch up" with the original construction documents. A major portion of that time is related to the potholing and CCTV efforts which must be done before detailed design can proceed.

We are looking forward to continuing our service to the City of Chino and working with you on this very important project. Should you have any questions, please contact me via email at rnorton@hunsaker.com or by phone at (949) 293-6537.

Very truly yours,
HUNSAKER & ASSOCIATES IRVINE, INC.

A handwritten signature in black ink that reads "Richard Norton".

Rich Norton, PE
Project Manager



Standard Practice for Underground Installation of Thermoplastic Pressure Piping¹

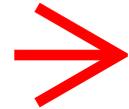
This standard is issued under the fixed designation D 2774; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

This standard has been approved for use by agencies of the Department of Defense.

INTRODUCTION

In general, thermoplastics pressure piping materials behave as ductile materials under load, meaning that they can undergo considerable deformation without damage. Piping made from such materials has the ability to bend under a load without breaking and to deform in other ways, while offering continued resistance. This flexibility allows ductile thermoplastic pipe to activate through pipe deformation lateral soil forces which create a pipe/soil system capable of safely supporting—even in pipes subject to little or no internal pressure—the earth and superimposed loads which are encountered in most pipe installations. However, proper installation techniques are required to ensure that the necessary support at the bottom and passive soil pressures at the sides of the pipe are developed and maintained.

Soils in which trenches are dug shall be examined and identified and the trenches prepared and backfilled in accordance with sound bedding procedures and this practice.



1. Scope

1.1 This practice governs procedures and references ASTM specifications for underground installation of thermoplastic pressure piping, 63-in. (1372-mm) nominal size and smaller. It is beyond the scope of this practice to describe these procedures in detail since it is recognized that significant differences exist in their implementation depending on kind and type of pipe material, pipe size and wall thickness, soil conditions, and the specific end use.

1.1.1 This practice assumes that over the range of anticipated operating conditions, including maximum external loading and minimum internal pressure, the soil/pipe system will offer sufficient structural stability to resist possible excessive diametrical deformation, or even collapse. In cases, particularly with large diameter thinner-walled pipe, for which the validity of this assumption may be in question, the selection of pipe and recommended installation conditions shall be determined by a qualified engineer.

1.1.2 Specific pipe characteristics and end-use requirements shall dictate addition to, or modification of the procedures stated or referenced herein.

1.2 The values stated in inch-pound units are to be regarded as the standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* Specific precautionary statements are given in Sections 10 and 11.

2. Referenced Documents

2.1 ASTM Standards:²

D 1600 Terminology Relating to Abbreviations, Acronyms, and Codes for Terms Relating to Plastics

D 2487 Test Method for Classification of Soils for Engineering Purposes

D 2488 Practices for Description and Identification of Soils (Visual-Manual Procedure)

F 412 Terminology Relating to Plastic Piping Systems

2.2 AWWA Standard:

C 651 Standard for Disinfecting Water Mains³

¹ This practice is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.61 on Water Pipe.

Current edition approved Jan. 1, 2004. Published March 2004. Originally approved in 1969. Last previous edition approved in 2001 as D 2774 – 01.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from American Water Works Association, 6666 W. Quincy Ave., Denver, CO 80235.

3. Terminology

3.1 *Definitions:*

3.1.1 Definitions are in accordance with Terminology F 412, unless otherwise specified. Abbreviated terms are in accordance with Terminology D 1600. Installation terminology used in this practice is illustrated in Fig. 1.

3.1.2 The term pipe refers to both pipe and tubing, unless specifically stated otherwise.

3.1.3 *protective sleeve, n*—a short section of pipe installed over system piping where there is a transition from relatively rigid piping or structure to relatively flexible piping or structure to protect the transition region from excessive bending or shear stresses. For example, protective sleeves are installed at connections between plastic or non-plastic mains and plastic lateral branch or service lines (such as service or branch connections to tapping tees or saddles), where plastic pipe enters or exits a casing, or where plastic pipe penetrates a building or vault wall.

4. Significance and Use

4.1 This practice may not apply to products which shall be subject to failure at relatively low strains. For low ductility materials, the installed pipe/soil system shall be sufficiently rigid to prevent pipe deformations which could strain the piping material beyond its safe strain limit.

5. Joining

5.1 Plastic pipe shall be joined together or to other pipes of dissimilar material using a number of different techniques. Commonly used procedures, joining materials, and fittings are defined by various standards. (See Appendix X1.) The technique used shall be suitable for the particular pipes being joined to one another. Manufacturers shall be consulted for specific instructions not covered by existing specifications. When requesting information, the intended service application shall be made known.

5.2 Skill and knowledge on the part of the installer are required using recommended techniques to obtain quality joints. Training of new installers shall be made under the guidance of skilled individuals. Detailed written procedures and visual aids used to train personnel are available from piping and joining equipment manufacturers.

5.3 The use of fittings and joining procedures which are not covered by a recognized standard is subject to the judgment and discretion of the purchaser. Each fitting and joining procedure used shall be qualified by investigation, testing, and experience to establish its suitability and safety for the intended service. Fittings and joints shall have long-term pressure capabilities equal to or greater than the system's maximum anticipated sustained operating pressure.

5.3.1 Thrust transmitting joints such as heat fused or solvent cemented, shall be capable of restraining maximum anticipated pipe pull-out forces generated by any unbalanced forces from internal pressure or pipe expansion/contraction, or both.

5.3.2 Gasketed and other non-thrust transmitting joints shall be restrained by means of properly engineered external restraints (thrust blocks) or joint restraint devices (see 7.3).

NOTE 1—Where there are unbalanced momentum forces and thrust is transmitted through the joints, consideration shall be given to the design capacity of each joint in the system to safely resist maximum anticipated axial thrust (see 7.3). Where a piping section having thrust transmitting joints is connected to a piping section having non-thrust transmitting joints, measures shall be taken to anchor or restrain the end of the thrust transmitting joint section against longitudinal movement so that contractive forces shall not be transmitted and cause disjoining of non-thrust transmitting joints.

6. Trenching-Recommended Installation Procedure

6.1 *Trench Stability*—During trench excavation, ensure that the trench sides shall be stable under all working conditions. The trench walls shall be sloped or appropriate supports provided to comply with all applicable local, state, and federal requirements for safety.

6.2 *Trench Width*—The width of the trench at any point below the top of the pipe shall be sufficient to provide adequate room for each of the following requirements: (1) joining the pipe in the trench if this is required; (2) snaking of small-diameter, heat fused or solvent cemented pipe from side-to-side along the bottom of the trench, when the effects of contraction are not otherwise accommodated; (3) filling and compacting the side fills; and (4) checking the elastomeric seal joints. Minimum trench widths shall be permitted to be utilized with most solvent-cemented and heat-fused pressure pipe materials by joining the pipe outside the trench and lowering the pipe into the trench after adequate joint strength has been attained (see 10.4). This practice shall be permitted to be used for gasket joint pipe, with manufacturers approval, providing care is taken to not disassemble the joints during lowering.

6.3 *Trench Bottom*—The trench bottom shall be prepared for the direct replacement of the pipe and shall be continuous, relatively smooth, free of rocks, and provide uniform support. For bell-ended or coupled pipe, suitable "bell-holes" shall be provided at each joint to permit the joint to be assembled and the pipe to be supported properly.

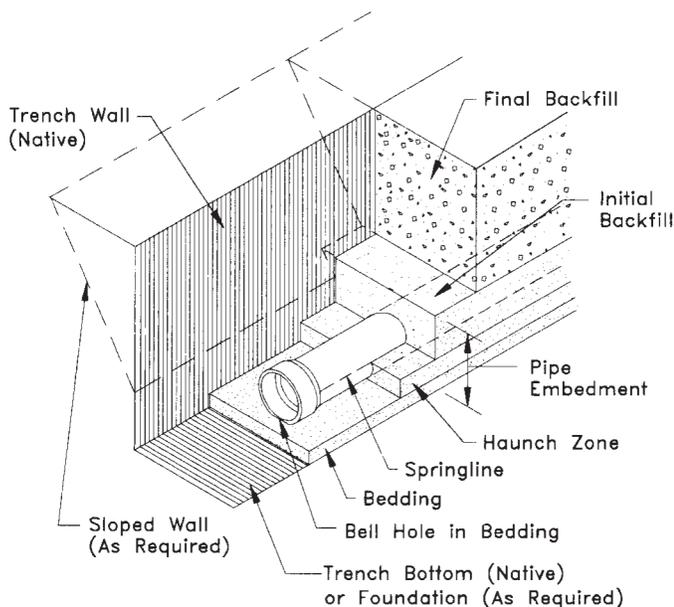


FIG. 1 Installation Terminology

6.3.1 Where ledge rock, hardpan, or boulders are encountered, it shall be required to pad the trench bottom with a bedding of at least 4-in. (100-mm) thickness of compacted granular material. In situations where rapid movement of water takes place through this bedding, the granular material used shall have gradation that prevents loss by migration of any pipe embedment material (see 9.8).

6.4 *Trench Depth and Pipe Cover*—Excavation for pipe trenches shall be to the lines, grades, and dimensions shown on the contract drawings. Sufficient cover shall be maintained to adequately reduce the traffic or other concentrated and impact loads.

6.4.1 Reliability and safety of service shall assume major importance in determining minimum cover for any intended service. Local, state, or federal codes shall also govern. Pipe intended for winter water service shall have a minimum cover equal to or greater than the maximum expected frost penetration depth.

6.4.2 A minimum cover of 24 in. (610 mm) for pipe shall be required when subjected to heavy overhead traffic. In areas of light overhead traffic a minimum cover of 12 to 18 in. (305 to 457 mm) is required.

6.5 *“Trenchless” Installation*—Some types of thermoplastic pressure pipe shall be permitted to be installed using methods that do not require excavation.

7. Pipe Placement

7.1 *Pipe Joint Assembly*—Pipe assembly shall be conducted in accordance with the manufacturer’s published recommendations. Above ground joining of pipe joined by solvent cementing, heat fusion or some other thrust transmitting connection shall be permitted. After the joint is appropriately “cured” (see Section 10) the pipe is lowered into the trench. This practice shall be permitted to be used for gasket joint pipe, with manufacturers approval, providing care is taken to not disassemble the joints during lowering.

7.2 *Pipe Bending*—Assembled thermoplastic pipe may be bent longitudinally if the bending radius is within limits prescribed by the manufacturer. There shall be two limits, one for pipe without joints and the other for pipe sections with joints.

7.3 *Thrust Restraint*—When installing piping systems with joints that cannot transmit the anticipated maximum longitudinal thrust, thrust restraint shall be required at changes in direction, or terminal ends, to prevent joint disengagement.

7.3.1 Where the piping system employs non-self restraining joints (for example, elastomeric seal bell and spigot type joints) at points where line shift or joint separation at system operating pressure can be anticipated, that is, pump discharge, directional changes, reducers and dead ends, thrust restraint shall be required to prevent joint disengagement and ensure the proper performance of the pressure piping system.

7.3.2 Where the piping system employs self-restraining joints (for example flanges, heat fusion, mechanical joint restraint or solvent cement joints) at these points in the system, thrust blocking shall not be required for thrust restraint.

7.4 *Thrust Restraint Methods*—Thrust restraint shall be achieved by use of mechanical thrust restraint devices or by use of concrete thrust blocking.

7.4.1 *Mechanical Thrust Restraint Devices:*

7.4.1.1 Devices used for thrust restraint of PVC pipe shall conform to Standard F 1674.

7.4.1.2 Consult device manufacturer for design assistance.

7.4.2 *Cast In Place Concrete Thrust Block Construction:*

7.4.2.1 The thrust block shall be constructed of cast in place concrete having a compression strength of 2000 psi (14 MPa) or more. Precast concrete blocking, wood blocking, or stone blocking with wood wedges, are not acceptable.

7.4.2.2 The thrust block acts as an anchor between pipe or fitting and the solid trench wall. The size of the thrust block shall be adequate to prevent pipe movement at the point of thrust. Consult the system designer.

7.4.2.3 The thrust block cavity shall be hand dug into undisturbed soil and framed, with soil or wood to hold freshly poured concrete. The earth bearing surfaces shall be undisturbed.

7.4.2.4 Before pressurizing the line, adequate time shall be required for the concrete thrust blocks to gain sufficient strength.

7.4.2.5 Precast concrete thrust blocks shall not be used in direct contact with thermoplastic fittings for buried pressure piping systems.

7.5 *Protecting Transition Regions*—A transition region between relatively rigid piping or structures and relatively flexible piping is subject to intensified localized bending or shear stresses, especially during soil consolidation after initial installation. In these transition regions, plastic pipe is protected against excessive stresses with a protective sleeve and stable bedding and backfill, or with stable bedding and backfill. The preferred practice is the combination of a protective sleeve and stable bedding and backfill.

7.5.1 Protective sleeves are usually plastic tubes, either extruded for the purpose or cut from lengths of plastic pipe, but they shall be permitted to be any material of sufficient strength and durability. Protective sleeves extend from rigid piping of structure across the transition region and along the plastic pipe for a length that ensures that plastic pipe at the transition region is not subject to excessive stress. The protective sleeve is appropriately secured to remain in place during backfilling. Where plastic piping penetrates a building or a vault wall, one end of the protective sleeve shall be embedded in the wall.

7.5.2 The diameter, wall thickness and length of the protective sleeve provide greater bending and shear resistance than the plastic pipe it protects. The inside diameter of the protective sleeve has minimal clearance to the plastic pipe or the connection (including any protective coating over the connection). The wall thickness of the protective sleeve shall be adequate to protect against shear and bending. The protective sleeve is of sufficient length (typically 12 in. (305 mm) or longer) to cover the transition region, and extend such that the opposite end rests on undisturbed foundation soil or stable bedding soil beneath the plastic pipe. Additional information is available from manufacturers.

7.5.3 A protective sleeve shall be permitted to be split longitudinally for installation purposes, provided it is designed for long term structural integrity as a longitudinally split

protective sleeve and includes external reinforcement such as stainless steel band clamps.

7.5.4 Whether a protective sleeve is installed or not, all transition regions are fully encapsulated with stable, compacted embedment materials. Take extra care during bedding and backfilling to provide firm and uniform support for the plastic pipe and transition region. See Section 9.

7.6 *Service Connections:*

7.6.1 *General*—Service connections on thermoplastic pipe are made by means of a suitable saddle, tapped coupling, direct taps, or service connector. These shall be installed in accordance with the manufacturer's published recommendations.

7.6.2 *Live Tapping*—Service connections for tapping of pressurized lines are commercially available. Installation by the proposed trenchless methodology shall only be specified after consultation and approval of the piping manufacturer. The specific published manufacturer's recommendations for each design shall be followed when making a live tap.

7.6.3 *Bends in Service Pipe*—When establishing the location of the tap, consideration shall be given to minimizing service pipe bends near tap and house connections, since soil settlements at these points could result in excessive shear or pull-out loads. Bends in the service pipe shall not be closer than 10 pipe diameters from any fitting or valve. The pipe shall not be bent beyond the limits recommended by the manufacturer. In the case of coiled pipe, these limits are often more restrictive when bending the pipe against the natural curvature than with the curvature. Service pipe or tubing which becomes kinked during bending, handling, or installation shall not be used. Take care in locating pipe bends and in conducting backfill operations to ensure that kinking will not develop during or after installation.

7.6.4 *Service Connections*—Depending on the materials used and the recommendations of the pipe manufacturer, flare, insert, compression, solvent-cement, or heat-fusion type fittings shall be employed to connect service pipe or tubing to itself and to the corporation and curb stops. When compression fittings with an internal stiffener are used, select a type which will ensure that the internal stiffener will not move from its proper position prior to and during tightening. The stiffener shall be a continuous annular section (tube), snugly fit in the pipe, providing support in the entire area under the gasket and compression element. Each pipe connection shall use a separate stiffener. Precautions for precluding possible problems which could be occasioned by differential settlement of flexible pipe with more rigidly held connectors include the following:

7.6.4.1 Take extra care during bedding and backfilling to provide firm and uniform support for the pipe or tubing at the point of connection.

7.6.4.2 Consult the pipe and fitting supplier for application suitability and installation instructions.

7.6.4.3 Place a protective sleeve or shield (which can consist of a short section of plastic pipe split lengthwise) over the connection and short section of pipe if protection is needed against possible differential settlement.

8. Appurtenances

8.1 Valves, hydrants, fittings, and other appurtenances shall be provided and installed as shown on the contract drawings or specifications.

8.2 The weight of valves, hydrants, and fittings shall be separately supported and not be carried by the plastic pipe. The support shall also be designed to protect the plastic pipe against excessive torsional or other loads which may develop when the valves or hydrants are operated.

8.3 Valves, hydrants, and fittings shall be adequately anchored against movements in the axial direction when connected to pipe by a joint not designed to transmit axial thrust. When using such joints, consideration shall be given to the extent of pipe movement within the socket as a consequence of thermal expansion/contraction or axial thrust.

9. General Requirements for Bedding and Backfill

9.1 The pipe shall be uniformly and continuously supported over its entire length on firm stable material. Blocking shall not be used to change pipe grade or to intermittently support pipe across excavated sections.

9.2 Pipe shall be permitted to be installed in a wide range of native soils. The pipe embedment shall be stable and placed in such a manner as to evenly support and physically shield the pipe from damage. Attention shall be given to local pipe laying experience which shall indicate solutions to particular pipe bedding problems.

9.3 The pipe embedment materials shall be stable, sufficiently granular to be readily worked under the sides of the pipe to provide satisfactory haunching, and readily compactable to achieve soil densities specified by contract documents. These qualities are available in the following materials:

9.3.1 Gravels and sands classified as Soil Types GW, GP, SW, and SP, or by a dual soil classification beginning with one of these symbols, in accordance with Test Method D 2487.

9.3.2 Sands and gravels classified as Soil Types GM, GC, SM, and SC in accordance with Test Method D 2487.

9.4 Initial backfill materials shall be placed in compacted layers.

9.5 All native and other materials in the pipe embedment zone shall be free from refuse, organic material, cobbles, boulders, large rocks or stones, or frozen soils.

9.6 The particle size of material in contact with the pipe shall not exceed the following: ½ in. for pipe to 4 in., ¾ in. for pipes 6 to 8 in.; 1 in. for pipes 10 to 16 in.; and 1½ in. for larger pipes. Each soil layer shall be sufficiently compacted to uniformly develop lateral passive soil forces during the backfill operation.

9.7 To minimize deformation of thinner-walled pressure pipelines, such as used in irrigation, the pipeline shall be first filled with water, all air removed, and kept full during the backfill operation.

NOTE 2—An identification system of soils based on visual examination and manual tests is given in Practices D 2488.

9.8 When installing pipe in locations where rapid movement of ground water shall result in migration of soil fines into, out of, or between layers of the embedment material, the bedding and back fill shall be of such gradation in particle size as to

preclude this possibility. Soil migration shall also be controlled by using an appropriate soil filter or a geotextile filter fabric between coarse embedment and fine soils.

9.9 Vibratory methods are preferred when compacting sand or gravels. Best results are obtained when the soils shall be in a nearly saturated condition. Where water flooding is used, the initial backfill shall be sufficient to ensure complete coverage of the pipe. Additional material shall not be added until the water-flooded backfill is firm enough to walk on. Care shall be taken to avoid floating the pipe.

9.10 Sand and gravel containing a significant proportion of fine-grained material, such as silt and clay, shall be compacted by hand or, preferably, by mechanical tamper.

9.11 The final backfill shall be placed and spread in approximately uniform layers in such a manner as to fill the trench completely so that there will be no unfilled spaces under or about rocks or lumps of earth in the backfill. Large rocks, stones, frozen clods, and other debris greater than 3 in. (76 mm) in diameter shall be removed. When compaction is required, rolling equipment or heavy tampers shall only be used to consolidate the final backfill, provided the pipe is covered by at least 18 in. of backfill. Trenches under pavements, sidewalks, or roads shall be backfilled and compacted to the required density specified by contract documents or by the appropriate government jurisdiction.

10. Installation Precautions

10.1 Plastic pipe shall be stored so as to prevent damage by crushing or piercing. If stored outdoors for a prolonged period the pipe shall require protection from weathering. Consult the manufacturer for recommendations. In warmer climates, the covering shall allow air circulation in and around the pipe.

10.2 Care shall be taken to protect the pipe from excessive heat or harmful chemicals. If used, cleaning solutions, detergents, solvents, etc., shall be used in accordance with the pipe manufacturer's recommendations.

10.3 Pipe joined by solvent cementing or heat fusion shall not be handled or installed in the trench until after the joints are sufficiently "cured" or cooled in accordance with the manufacturer's recommendations to prevent weakening the joint.

10.4 When installing pipe, avoid imposing strains that overstress or buckle the piping or impose excessive stress on the joints.

10.5 Provisions for pipe expansion and contraction shall be made with all thrust transmitting joint systems. When assembled outside the trench, the pipe shall be allowed to cool in the trench before backfilling to minimize stress due to thermal contraction.

10.6 Suitable anchoring methods shall be used to prevent excessive longitudinal or bending movement of the piping.

10.7 Effects of ground freezing shall be considered when pipe is installed at depths subject to frost penetration.

11. Pressure Testing

11.1 The structural integrity of a pipe and its joints shall be demonstrated by a pressure test that is conducted after installation and prior to placement into service. During pressure

testing, safety precautions shall be instituted to protect personnel and property in case of pipe or component failure. The precautions taken depend upon the nature of pipeline materials; design of the system; volumetric content; and test pressure, location, and duration. Some important precautions include:

11.1.1 Conduct pressure testing with water, or other environmentally safe incompressible fluid, except for the case of pipelines specifically designed for compressed gas service (for example, natural gas distribution lines), which shall be tested with compressed gas.

11.1.2 Pipe shall be adequately anchored to prevent movement. The joints and fittings shall be permitted to remain exposed to facilitate inspection for joint leakage.

11.1.3 Testing shall not begin until authorized by the engineer or other authority and concrete thrust blocks have cured.

11.1.4 The pipeline shall be slowly filled with water taking care to prevent surge and air entrapment. All entrapped air shall be released. Where required, the system shall include appropriate air release and air/vacuum relief valves. Air/vacuum valves or vents shall be provided at all high points in the piping system to purge air pockets while the system is filling. Pressure regulators shall be required at the low points in the system.

11.1.5 The temperature of the test medium shall not be less than 40°F (5°C), nor greater than 90°F (30°C). The pipe and appurtenance manufacturer shall be consulted for recommendations and safeguards when testing outside this temperature range.

11.2 The test pressure and duration shall meet the requirements of the applicable local, state, and federal regulations. In absence of such regulations, the test pressure and duration shall be as directed by the contract documents or the engineer. In the absence of all of the directions for specific recommendations for test pressure and duration, the following procedure shall be permitted to be used:

11.2.1 The line shall be pressurized to 150 % of the system's design operating pressure, but not less than 15 psig, nor in excess of the pressure rating for the pipe or appurtenances nor the maximum allowable test pressure of any non-isolated component. Measure the pressure at the lowest elevation possible.

11.2.2 The duration of pressurization shall be maintained for the specified test time while monitoring for pressure loss.

11.2.3 All visible leaks and any leakage in excess of the permitted allowance shall be repaired and the line recharged and retested following the same procedure.

12. Leak Testing

12.1 Any required leakage test shall be conducted as specified. The purpose of a leakage test is to establish that the section of line tested, including all joints, fittings and other appurtenances, will not leak or that leakage is within the limits of the applicable allowance.

13. Keywords

13.1 buried installation; flexible thermoplastic pipe; pressure-rated pipe; underground installation

SUPPLEMENTARY REQUIREMENTS

This requirement applies whenever a regulatory authority or user calls for the product to be used to convey or to be in contact with potable water.

S1. Potable Water Requirement—Piping intended for the transport of potable water shall be disinfected in accordance with the instructions of the engineer or other authority. In the

absence of such, it shall be disinfected in accordance with AWWA C 651.

APPENDIX

(Nonmandatory Information)

XI. STANDARDS FOR THERMOPLASTIC PIPING USED IN UNDERGROUND INSTALLATION

X1.1 Other ASTM Installation Standards:²

D 2321 Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe

F 645 Guide for Selection, Design, and Installation of Thermoplastic Water Pressure Piping Systems

F 690 Practice for Underground Installation of Thermoplastic Pressure Piping Irrigation Systems

F 1176 Practice for Design and Installation of Thermoplastic Irrigation Systems with Maximum Working Pressure of 63 psi

X1.2 ASTM Pipe, Tubing, Fittings, Jointing Materials, and Jointing Standards:²

X1.2.1 Chlorinated Poly(Vinyl Chloride) (CPVC) Piping:

F 437 Specification for Threaded Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80

F 438 Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 40

F 439 Specification for Socket-Type Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80

F 441 Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80

F 442 Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe (SDR-PR)

F 493 Specification for Solvent Cements for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe and Fittings

X1.2.2 Polyethylene (PE) Piping:

D 2104 Specification for Polyethylene (PE) Plastic Pipe, Schedule 40

D 2239 Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Inside Diameter

D 2447 Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter

D 2609 Specification for Plastic Insert Fittings for Polyethylene (PE) Plastic Pipe

D 2683 Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

D 2737 Specification for Polyethylene (PE) Plastic Tubing

D 3035 Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter

D 3261 Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

F 714 Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter

F 771 Specification for Polyethylene (PE) Thermoplastic High-Pressure Irrigation Pipeline Systems

X1.2.3 Poly(Vinyl Chloride) (PVC) Piping:

D 1785 Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

D 2241 Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series)

D 2464 Specification for Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80

D 2466 Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedules 40

D 2467 Specification for Socket-Type Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80

D 2564 Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings

D 2672 Specification for Joints for IPS PVC Pipe Using Solvent Cement

F 656 Specification for Primers for Use in Solvent Cement Joints of Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings

X1.2.4 Thermoplastic Piping Systems:

D 2513 Specification for Thermoplastic Gas Pressure Pipe, Tubing, and Fittings

F 771 Specification for Polyethylene (PE) Thermoplastic High-Pressure Irrigation Pipeline Systems

F 1412 Specification for Polyolefin Pipe and Fittings for Corrosive Waste Drainage Systems

X1.2.5 Elastomeric Joints and Seals:

D 3139 Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

F 477 Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe

X1.2.6 Jointing Practices:

D 2657 Practice for Heat-Jointing Polyolefin Pipe and Fittings

D 2855 Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings

D 3140 Practice for Flaring Polyolefin Pipe and Tubing

F 402 Practice for Safe Handling of Solvent Cements, Primers and Cleaners Used for Joining Thermoplastic Pipe and Fittings

X1.3 AWWA Standards:³

AWWA C 605 Standard for Underground Installation of PVC Pressure Pipe and Fittings for Water

AWWA C 900 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in., for Water Distribution, (100 mm through 300 mm)

AWWA C 901 Polyethylene (PE) Pressure Pipe and Tubing ½ in. through 3 in., for Water Service

AWWA C 905 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, for Water Transmission and Distribution 14 in. through 48 in., (350 mm through 1200 mm)

AWWA C 906 Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 63 in., for Water Distribution

AWWA C 907 Polyvinyl Chloride (PVC) Pressure Fittings for Water, 4 in. through 8 in., (100 mm through 200 mm)

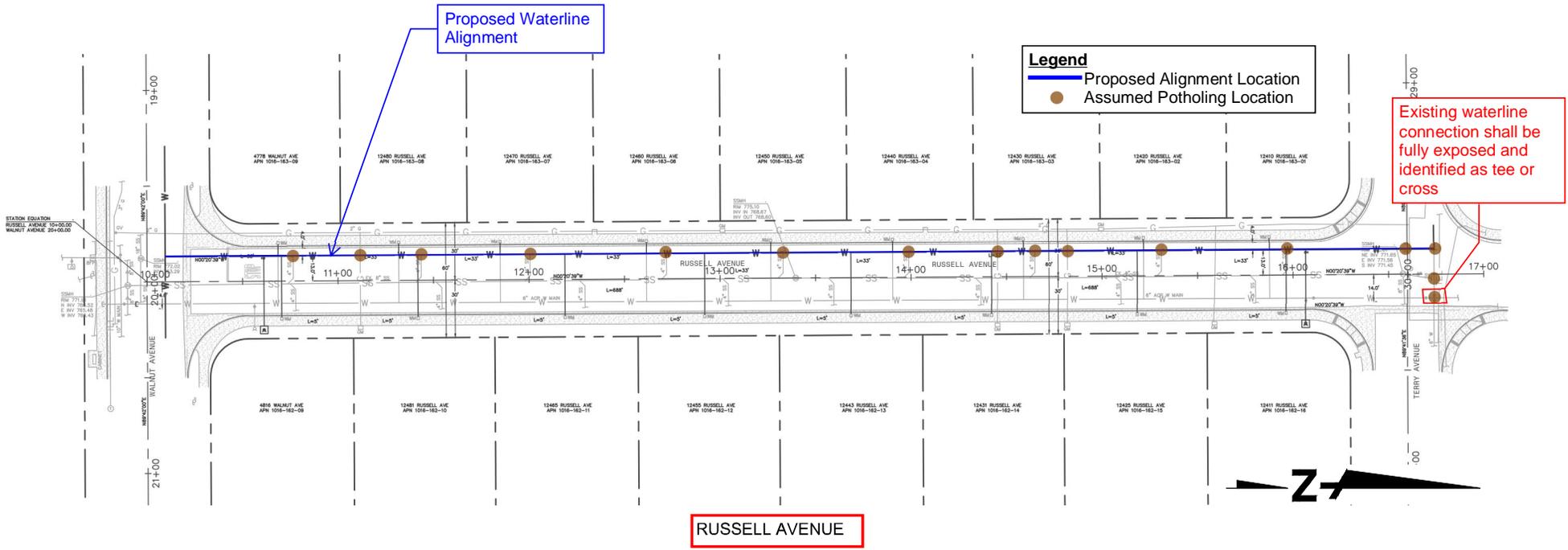
AWWA C 909 Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe, 4 in. through 12 in.

AWWA Manual M 23 PVC Pipe—Design and Installation

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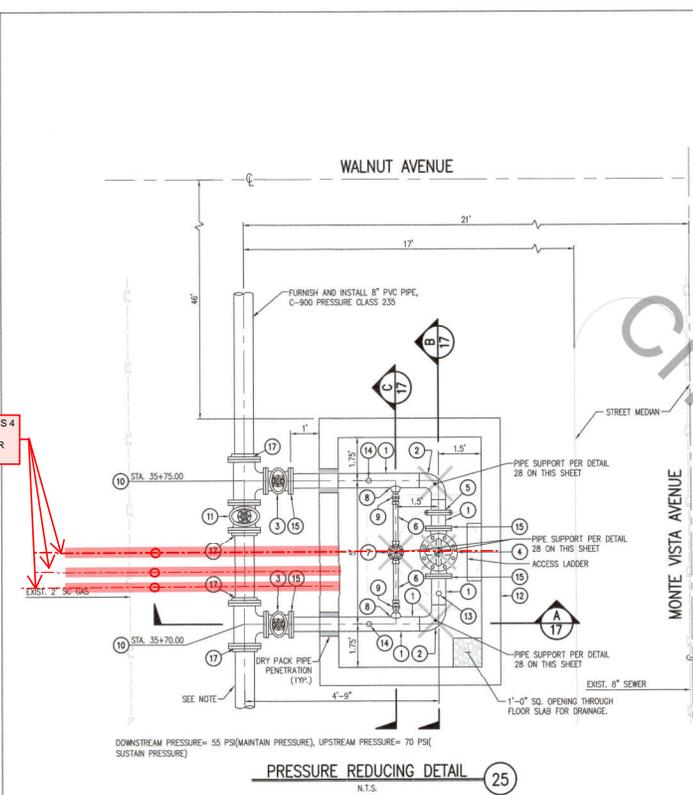
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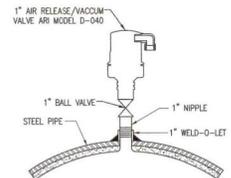


**Exhibit #1 For Contract Amendment
 WALNUT WATER LINE REPLACEMENT
 Hunsaker
 2/24/26**

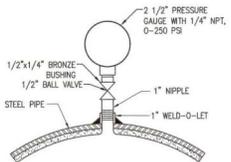
3 PVC CONDUITS 4 INCH DIA. 8 INCHES CENTER TO CENTER



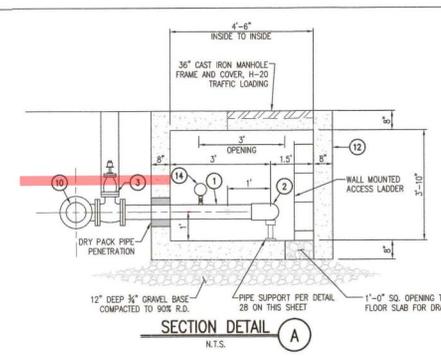
PRESSURE REDUCING DETAIL 25
N.T.S.



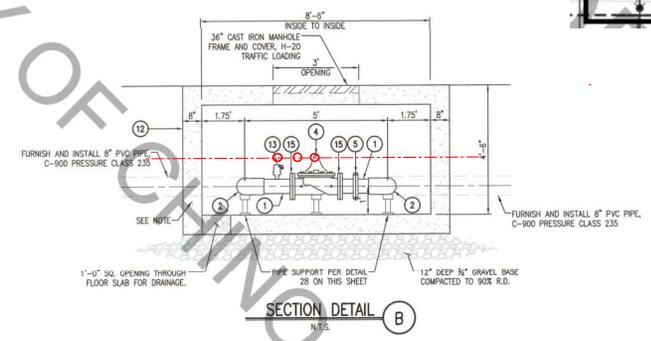
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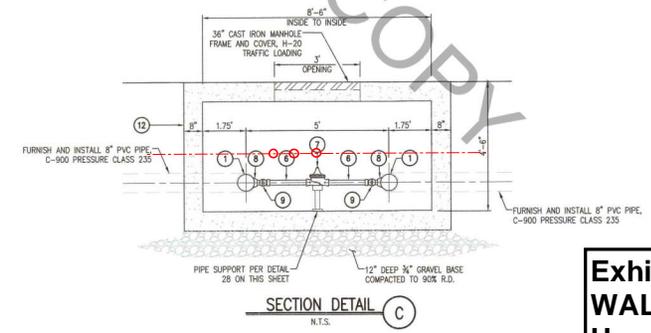
PRESSURE GAUGE DETAIL 27
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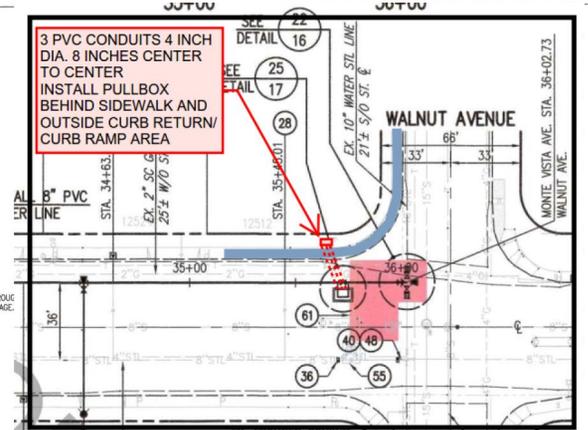
SECTION DETAIL A
N.T.S.



SECTION DETAIL B
N.T.S.



SECTION DETAIL C
N.T.S.



CONSTRUCTION NOTES: (THIS SHEET ONLY)

- 1 FURNISH AND INSTALL 8" STEEL PIPE, SCH 40.
- 2 FURNISH AND INSTALL 6"-90° STEEL BEND, WELD/WELDED.
- 3 FURNISH AND INSTALL 6" GATE VALVE, FEAFE.
- 4 FURNISH AND INSTALL 6" PRESSURE REDUCING VALVE, FEAFE, CLA-VAL MODEL N-92-01.
- 5 FURNISH AND INSTALL 6" WICHTALON COUPLING.
- 6 FURNISH AND INSTALL 2" STAINLESS STEEL TUBING.
- 7 FURNISH AND INSTALL 2" PRESSURE REDUCING VALVE, NPT/NPT, CLA-VAL MODEL N-92-01.
- 8 FURNISH AND INSTALL 2" WELD-O-LET.
- 9 FURNISH AND INSTALL 2" BALL VALVE, NPT/NPT, UNION.
- 10 FURNISH AND INSTALL 8"x8"x8" DUCTILE IRON REDUCED TEE, FEAFE/FE.
- 11 FURNISH AND INSTALL 6" GATE VALVE, FEAFE.
- 12 FURNISH AND INSTALL 8"x5"x4.5" DEEP PRECAST CONCREAT VAILT.
- 13 FURNISH AND INSTALL 1" AIR VACUUM PER DETAIL 26 THIS SHEET.
- 14 FURNISH AND INSTALL PRESSURE GAUGE PER DETAIL 27 THIS SHEET.
- 15 FURNISH AND INSTALL 6" SLIP-ON FLANGE.
- 16 FURNISH AND INSTALL 2" MPT/SLIP ADAPTER.
- 17 FURNISH AND INSTALL FLANGE ADAPTER.

- NOTES:
1. STATIONING IS BASED ON THE CENTERLINE OF THE PROPOSED WATERLINE AS SHOWN ON THESE PLANS UNLESS NOTED OTHERWISE.
 2. CONTRACTOR SHALL REPLACE ALL DAMAGED CURBS, GUTTERS, CROSS GUTTER, SIDEWALK, SPANDREL, TRAFFIC STRIPING AND TRAFFIC LOOPS IN KIND.

Exhibit #2 For Contract Amendment
WALNUT WATER LINE REPLACEMENT
Hunsaker
2/24/26

UNDERGROUND SERVICE ALERT
SECTION 4216 & 4217 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT ID NUMBER CALL UNDERGROUND SERVICE ALERT AT 811 TDD (2) WORKING DAY BEFORE YOU DIG. WEB ADDRESS: www.digalert.org or www.call811.com

APPROVED CHANGES		DESCRIPTION		DATE		BY	
NO.	DESCRIPTION	CITY	DATE	NO.	DESCRIPTION	CITY	DATE
1	AS-BUILT						

CIVILTEC engineering inc.
118 West Lime Avenue
Monrovia, CA 91016
Phone: 626.357.0588
Fax: 626.303.7957
Web: www.civiltec.com



EXHIBIT "C-2"

LATERAL LOCATING COST - Chino Walnut Ave Water Lines 2/9/26			
Description	Responsible Party	Cost per Lateral	Notes
CCTV investigation		\$525.00	quote from National Plant Services
H&A markup on subs		\$52.50	10% of raw cost
Locate field marking		\$87.50	1/4 hour @ \$350.00 2 man crew
Process field data and plot		\$50.00	1/4 hour @ \$200.00 engineer
TOTAL PER LATERAL		\$715.00	Conservative production 1 per hour
			<i>rounded to \$700/lateral</i>
Walnut laterals	20	\$14,000.00	APN's counted on draft drawing
			Monte Vista to Central minus 10 laterals shown on BA-0859 dwg. Laterals to one side xing waterline

H&A	CHINO Walnut Street Waterline COST BREAKDOWN SPREADSHEET	AMENDMENT PROPOSAL	Labor Hours by Classification							Hunsaker & Associates			SUBCONSULTANTS		3/2/26	
			Principal	Project Manager	Engineer	CAD Tech.	Survey Office Staff	Field Survey 1 person 2 person 3 person			MAN-HOURS	LABOR COST	EXPENSES	CCTV NATIONAL PLANT SER.	POTHOLING BOUDREAU	TOTAL TASK COST
	DESCRIPTION	LEAD FIRM	\$240	\$220	\$200	\$200	\$200	\$270	\$350	\$420						
	Investigate engineering solutions for Russell including vertical cover, clearances, pipe material, bedding scenarios	H&A		3	24	8					35	\$7,060	\$0	\$0	\$0	\$7,060
	Incorporate Russell into Walnut PS&E- add 1 plan and profile sht and 1 detail dwg to Walnut set	H&A		1	24	32					57	\$11,420	\$0	\$0	\$0	\$11,420
	POTHOLING - Russell Only and survey markings	H&A		1	2	4	4		8		19	\$5,020	\$2,400	\$0	\$24,000	\$31,420
	16 potholes @ \$1,500 each															
	CCTV - Walnut (Monte Vista to Central one side) and	H&A		1	2	4	6		12		25	\$6,820	\$1,400	\$14,000	\$0	\$22,220
	SUBCONSULTANT															
	Detail SCADA conduits and pullbox to PRV at Walnut and Monte Vista & coord with City staff	H&A		3	12	24					39	\$7,860	\$0	\$0	\$0	\$7,860
	Delete 700' Walnut plan and profile from Central to Tenth	H&A		0	0	-20					-20	-\$4,000	\$0	\$0	\$0	-\$4,000
	Russell responses to RFI's and review of submittals as requested by City staff and as-builts	H&A		2	24	24					50	\$10,040	\$0	\$0	\$0	\$10,040
	Miscellaneous added design services as directed by City staff (10% of total)	H&A		0	0	0					0	\$0	\$0	\$0	\$0	\$8,600
				11	88	76	10	-	20	-	205	\$44,220		TOTAL BUDGET		\$94,620