



ADDENDUM NO. 2

Y006.03

EOU Project Number FP-2022-03

From: Systems West Engineers, Inc.
725 A Street
Springfield, OR 97477

To: All Plan Holders of Record

Project: Eastern Oregon University West Steam Main Distribution Replacement

Date: February 16, 2026

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated January 23, 2026 as noted below. Acknowledge receipt of this addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

General

Pre-Bid Conference Attendance List: Attached

Specifications

Section #23 21 10 – Underground HVAC Piping

1. Added expansion compensation design requirements.
2. Changed Perma-Pipe product.
3. Added Rovanco as a manufacturer.
4. Clarified carrier pipe insulation type and thickness.

Approvals

Manufacturers listed below are approved based on data submitted. Approvals do not alter responsibility for conformance with Contract Documents.

<u>Section</u>	<u>Approved Manufacturer</u>
23 21 10	Rovanco

Questions:

5. Are the expansion loops intended to be located within a vault or installed as part of the direct-buried piping system? It has been asserted that expansion loops cannot be direct-buried.
 - a. Expansion loops may be direct-buried, but expansion compensation must be designed by the piping system manufacturer. Refer to section 23 21 10 1.02.B.

END OF ADDENDUM NO. 2



Nate Jenkins

NJJ\ejp

Enclosures: Pre-bid Conference Attendance List
Section 23 21 10

WEST STEAM DISTRIBUTION MAIN REPLACEMENT PROJECT EASTERN OREGON UNIVERSITY

Mandatory Pre-Bid Conference • February 10, 2025, 10:00 AM

Only the Prospective Bidders on this List are eligible to submit Bids for this Project. Other Bidders are considered Non-Responsive

No.	Name	Representing/Title	Location (City, State)	Phone	Email
1	John Garlitz	EOU	La Grande, OR	541-805-0807	jgarlitz@eou.edu
2	Brent Gyllenberg	Gyllenberg Construction	Baker City, OR	541-523-5000	gyllcons@eoni.com
3	Travis Dever	MPP Piping	Scio, OR	541-817-2312	travis.dever@mpppiping.com
4	Doug Parazoo	MPP Piping	Scio, OR	503-932-9671	doug.parazoo@mpppiping.com
5	Eli Childs	R6 Contracting	Union, OR	541-910-9211	eli@r6contracting.com
6	Lanee Lehne	S2 Industrial	Marcola, OR	541-632-02127	llehne@s2industrial.com
7	Nate Rudder	Granite Construction	Hermiston, OR	509-975-1551	nathan.rudder@gcinc.com
8	Maime Lipe	Apex Mechanical	Battle Ground, WA	360-666-8735	estimating@apexmechanical.org
9	Aaron Romer	All Phase Electrical	La Grande, OR	541-963-3000	allphase_electrical@frontier.com
10	Joe Anderson	Walter Plumbing	La Grande, OR	541-975-1234	walter.plumbing@live.com
11	Craig Walter	Walter Plumbing	La Grande, OR	541-975-1234	walter.plumbing@live.com
12	Tanner Jarvis	Jarvis Mechanical	La Grande, OR	541-480-5993	tanner@jarvismech.com
13	Jarod Teeter	MBGC	La Grande, OR	541-910-0887	jteeter@mikebeckergc.com
14	Matt Majino	ES Constant	Troutdale, OR	971-712-3306	matthew@esconstant.com
15	Ron Rieman	Boyster Brothers	Vancouver, WA	360-844-0591	ron@boysterbrothers.com
16	John Tapani	JRT Mechanical	Battle Ground, WA	360-666-0330	johnT@JRTmechanical.com
17	Darrell Johnson	S2 Industrial	Marcola, OR	541-915-7350	djohnson@s2industrial.com

SECTION 23 21 10

UNDERGROUND HVAC PIPING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
1. Pre-engineered conduit piping.

1.02 ACTION SUBMITTALS

- A. Product Data: For the following:
1. Pre-engineered conduit piping system components.
- B. Shop Drawings: For underground steam and condensate piping. Signed and sealed by a professional engineer.
1. Submitted detailed design layout drawings including pipe sizes, locations, elevations showing all anchors and guides. Layout drawings shall also include all analysis node points.
 2. Show details and sections of piping in trench, conduit, and cased pipe with clearances between piping, and show insulation thickness.
 3. Calculate requirements for expansion compensation for underground piping. Calculate pipe stress and system expansion for each expansion compensation elbow using a finite element computer generated three-dimensional analysis. Calculations, including heat loss calculations, shall demonstrate that pipe stresses from temperature changes are within the allowable requirements in ASME B31.1 and the anchors and the guides will withstand the resultant forces. The computer analysis results shall include node stresses, forces, moments and displacements.
 4. Show expansion compensators, offsets, and loops with appropriate materials to allow piping movement in the required locations. Show anchors and guides that restrain piping movement with calculated loads and show concrete thrust block dimensions.
 5. Coordinate required anchor locations as determined in design with those shown on construction documents.
 - ~~5.6. Expansion shall not be compensated for through cold-springing of the system during installation.~~

1.03 INFORMATIONAL SUBMITTALS

- A. Qualifications Date: For qualified installer
- B. Welding certificates.
- C. Material Test Reports.
- D. Field quality control reports.
- E. Survey report of installed piping slope.

1.04 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to ASME Boiler and Pressure Vessel Code: Section IX.
 - 1. Comply with provisions in ASME B31.9, "Building Services Piping."
 - 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- B. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for materials, products, and installation.
- C. Manufacturer installer certifications where required for product warranty.

PART 2 - PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Provide components and installation capable of producing piping systems with the following minimum working-pressure ratings:
 - 1. High Pressure Steam Piping: 125 psig at 365°F.
 - 2. Pumped Condensate Piping: 100 psig at 250°F.

2.02 STEEL PIPES AND FITTINGS

- A. Steel Pipe: ~~Steel Pipe~~ ASTM A 53/A 53M, black with plain ends; type, grade, and wall thickness as indicated in "Piping Application" Article.
- B. Cast-Iron, Threaded Fittings: ASME B16.4; Class 125.
- C. Malleable-Iron, Threaded Fittings: ASME B16.3, Class 150
- D. Malleable-Iron Unions: ASME B16.39; Class 150.
- E. Wrought-Steel Fittings: ASTM A 234/A 234M, wall thickness to match adjoining pipe.
 - 1. Material Group: 1:1.
 - 2. End Connections: Butt welding.
 - 3. Facings: Raised face.
- F. Steel Welding Fittings: ASME B16.9, seamless or welded.
 - 1. Welding Filler Metals: Comply with AWS D10.12M/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
- G. Nipples: ASTM A 733, made of same materials and wall thicknesses as pipe in which they are installed.
- H. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
 - 1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
 - a. Full-Face Type: For flat-face, Class 125, cast-iron and -bronze flanges.
 - b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
- I. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

2.03 PRE-ENGINEERED CONDUIT PIPING SYSTEM

- A. Description: Factory-fabricated and -assembled, airtight and watertight, drainable, pressure-tested piping with conduit, inner pipe supports, and insulated carrier piping. Fabricate so insulation can be dried in place by forcing dry air through conduit.
1. Manufacturers: Subject to compliance with requirements, provide one of the following products:
 - a. Perma Pipe, Inc. [ESCON A Ferro Shield Multi-Therm](#)
 - b. [Thermacor Duo-Therm 505](#)
 - c. [Rovanco Insul-800](#)
- B. Carrier Pipe: Schedule 40 steel pipe and fittings, STM A-53, Grade B, ERW. Schedule 80 steel where indicated in "Piping Application" Article.

C. Carrier Pipe Insulation:

1. Aerogel

- a. [Max Working Temperature: 1200°F](#)
- b. [Materials: Flexible blanket, maximum k-value of 0.16 Btu-in/hr-ft²-°F at 75°F mean temperature, hydrophobic \(water absorption <6% by volume\). Comply with ASTM C1728.](#)
- c. [Thickness:](#)
 - 1) [8"Ø MPS: 1.18" \(3 layers of 10mm\)](#)
 - 2) [2-1/2"Ø PR: 1.18" \(3 layers of 10mm\)](#)

C-D. Outer Carrier Pipe Insulation:

1. Polyurethane Foam Pipe Insulation: Unfaced, preformed, rigid cellular polyurethane material intended for use as thermal insulation.
 - a. Minimum thickness of 1"
 - b. Insulation shall be rigid, 90% closed cell polyurethane with a minimum 2.4 lbs. per cubic foot density, and a compressive strength of 30 psi @ 75°F.
 - c. Comply with ASTM C591, Type I or Type IV, except thermal conductivity (k-value) shall not exceed 0.16 Btu x in./h x sq. ft. x deg F at 75 deg F after 180 days of aging.
 - d. Fabricate shapes in accordance with ASTM C450 and ASTM C585.
 - e. The insulation shall have a bare copper wire embedded into the system between the steel casing and the HDPE jacket. The wire shall be monitored by an alarm panel which measures resistance between the carrier pipe and the steel casing. The panel shall be capable of alarming in the event of low resistance.

D-E. Conduit: 10-gauge, welded, smooth-wall black steel conforming to ASTM A-211, A-139, A-134, and A-135 spiral wound steel.

1. Cover: With polyurethane foam insulation with an HDPE jacket.
2. Piping Supports within Conduit: Corrugated galvanized steel with a maximum spacing if 10 feet.
3. Fittings: Factory-fabricated and -insulated elbows and tees. Elbows may be bent pipe equal to carrier pipe. Tees shall be factory fabricated and insulated and shall be compatible with the carrier pipe.
4. Expansion Offsets and Loops: Size casing to contain piping expansion.
5. Accessories include the following:
 - a. Guides and Anchors: Steel plate welded to carrier pipes and to casing, complete with vent and drainage openings inside casing.
 - b. End Seals: Steel plate welded to carrier pipes and to casing, complete with drain and vent openings on vertical centerline.
 - c. Gland Seals: Packed stuffing box and gland follower mounted on steel plate, welded to end of casing, permitting axial movement of carrier piping, with drain and vent connections on vertical centerline.
 - d. Pressure Testable Joint Closure: On straight run joints.

- e. Conduit fittings: Factory pre-fabricated, pre-insulated, and jacketed with a molded, extrusion welded, or butt fusion welded PE jacket.

E.F. Jacket:

- 1. High density polyethylene (HDPE): Extruded, black, having a minimum wall thickness of 200 mils.
 - a. The inner surface of the HDPE jacket shall be oxidized by means of corona treatment or flame treatment to ensure a secure bond between the jacket and foam insulation preventing any ingress of water at the jacket/foam interface.

F.G. Leak Detection Panel:

- 1. Alarm panel monitoring copper wire which measures resistance between the carrier pipe and the steel casing. The panel shall be capable of alarming in the event of low resistance and reporting out to Building Automation System.

G.H. Source Quality Control: Factory test conduit and carrier pipe as indicated in Part 3.

PART 3 - EXECUTION

3.01 EARTHWORK

- A. See Division 31 for excavation, trenching, and backfilling.
- B. Underground systems shall be buried in a trench not less than two feet deeper than the top of the pipe and not less than eighteen inches wider than the combined O.D. of all piping systems. A minimum thickness of 24 inches of compacted backfill placed over the top of the pipe will meet H-20 highway loading.
- C. Trench bottom shall have a minimum of 6 inches of sand, pea gravel, or specified backfill as a cushion for the piping. All field cutting of the pipe shall be performed in accordance with the manufacturer's installation instructions.

3.02 PIPING APPLICATION

- A. High Pressure Steam Piping:
 - 1. 2-1/2-inch and larger shall be one of the following:
 - a. Schedule 40 steel carrier pipe in a pre-engineered conduit piping system.
- B. Pumped Condensate Piping:
 - 1. 2-1/2-inch and larger shall be one of the following:
 - a. Schedule 80 steel carrier pipe in a pre-engineered conduit piping system.

3.03 PIPING INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicate piping locations and arrangements if such were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- B. Remove standing water in the bottom of trench.
- C. Do not backfill piping trench until field quality control testing, pipe slope survey, and Manufacturer's Field Service have been completed and results approved.

- D. Install piping with slope as indicated in Civil plans.
- E. In conduits, install drain valves at low points and manual air vents at high points.
- F. Install components with pressure rating equal to, or greater than, system operating pressure.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. See Section 23 05 17 – Sleeves and Sleeve Seals for HVAC Piping, for sleeves and mechanical sleeve seals through exterior building walls.
- J. Secure anchors and fittings where piping changes direction, and where elsewhere required by manufacturer's written installation instructions, with concrete thrust blocks. Apply bitumastic coating to carbon-steel anchors and guides. Pour concrete thrust blocks and anchors.

3.04 JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes, and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Welded Joints: Construct joints according to AWS D10.12M/D10.12, using qualified processes and welding operators according to "Quality Assurance" Article.
- D. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants in bolt threads.
- E. Conduit and Cased Piping Joints: Assemble sections and finish joints with pourable or split insulation and exterior jacket sleeve and apply shrink-wrap seals.

3.05 IDENTIFICATION

- A. Install continuous plastic underground warning tapes during back filling of trenches for underground steam and condensate piping. Locate tapes 6 to 8 inches below finished grade, directly over piping. See Division 31 for warning tape materials and devices and their installation.

3.06 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Arrange for Manufacturer representatives to perform site visits at the following milestones:
 1. At time of material delivery.
 2. Prior to joint closure installation for installed piping inspection.
 3. After system is fully installed and in service to review alarm panel and monitoring system.

- C. Tests and Inspections:
 - 1. Prepare steam and condensate piping for testing according to ASME B31.9 and as follows
 - a. Leave joints, including welds, uninsulated and exposed for examination during test.
 - b. Fill system with water. Where there is a risk of freezing, air or a safe, compatible liquid may be used.
 - c. Use vents installed at high points to release trapped air while filling system.
 - 2. Test steam and condensate piping as follows:
 - a. Subject steam and condensate piping to hydrostatic test pressure that is not less than 1.5 times the design pressure.
 - b. After hydrostatic test pressure has been applied for 10 minutes, examine joints for leakage. Remake leaking joints using new materials and repeat hydrostatic test until no leaks exist.
 - 3. Test conduit as follows:
 - a. Seal vents and drains and subject conduit to 15 psig for 4 hours with no loss of pressure. Repair leaks and retest as required.
 - 4. Engage surveyor to measure installed site steam piping slope prior to backfill/cover.
- D. Prepare test and inspection reports, including survey of installed piping slope.

END OF SECTION