

**Statement of Work
Cured In Place Pipe Liner
For Delaware County Maintenance**

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Item 1: Installation of a Cured-In-Place-Pipe (CIPP) on SR 0001

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ATTACHMENTS

- Attachment 1, Site Location Map
Attachment 2, Contractor Information Form
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GENERAL PROVISIONS

1. GOVERNING SPECIFICATIONS

The purpose of this Invitation for Bid is to procure a Contractor to perform work to repair the affected pipe culverts by installation of a cured in place pipe on State Route 0001 and State Route 1022 for the Pennsylvania Department of Transportation (hereinafter referred to as PennDOT) Delaware County Maintenance Office.

The subject pipe on SR 0001 is located at 23/0001/0400/0663, 39.971004, -75.288826. It is a corrugated metal pipe with an interior diameter of 48 inches and approximate length of 70 linear feet. SR 0001 is a four-lane highway with 11-foot lanes and no shoulder. The invert of the pipe is approximately 5 feet below the roadway surface. Video of pipe can be provided upon request.

The subject pipe on SR 1022 is located at 23/1022/0020/0887, 39.955859, -75.386907. It is a corrugated metal pipe with an interior diameter of 48 inches and approximate length of 40 linear feet. SR 1022 is a two-lane highway with 11-foot lanes and no shoulder. The invert of the pipe is approximately 11 feet below the roadway surface,

Prior to the bid, all questions shall be directed to the Issuing Officer.

In the event there is a conflict among the documents comprising this Contract, PennDOT and the Contractor have agreed on the following order of precedence: The Contract; the IFB; and the Contractor's Bid in Response to the IFB.

All work will be in accordance with specifications and attachments as herein specified.

The PennDOT Project Manager for this contract will be the County Maintenance Manager or Designee.

All work will be subject to inspection by the Project Manager or Designee during the term of this contract. Failure to satisfactorily meet all the requirements of this contract or the refusal to promptly correct all deficiencies may be cause for termination.

2. CURED IN-PLACE PIPE LINER SPECIFICATIONS

MATERIAL -

- Tube - ASTM F1216. Fabricate tube to a size that will form to the internal circumference and length of pipe culvert. Make allowance for circumferential stretching during inversion.

If glass fiber reinforcement is used in the tube, provide layers of unreinforced, resin absorbent material on the inside and outside of the tube to protect the fibers from being exposed to the pipe flow or external water.

Plastic coat the outside layer of the tube before inversion with a translucent flexible material that is compatible with the resin system used. Fully bond any plastic coatings on the tube that will become the inside surface of the finished cured-in-place pipe to the absorbent tube material.

No intermediate or encapsulated elastomeric layers are permitted. No materials that are subject to delamination in the cured-in-place pipe are permitted.

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- Resin - ASTM F1216, Section 5.2.

Dark or non-reflective natural wall colors of interior pipe surfaces of the cured-in-place pipe that could inhibit proper closed circuit television inspection are not permitted.

CONSTRUCTION -

1. Structural Requirements

Design cured-in-place pipe in accordance with ASTM F1216 and as follows:

No bonding of cured-in-place pipe to the original pipe wall.

External Hydrostatic Design. Submit acceptable third-party testing and verification of the enhancement factor K for the manufacturer of the cured-in-place pipe product.

Provide a strong and uniform bond between all cured-in-place pipe layers. All layers, after cure, to form one homogeneous structural pipe wall with no part of the tube left unsaturated with resin.

2. Testing Requirements

Chemical Resistance. Cured-in-place pipe must meet the chemical resistance guidelines of ASTM F1216. Submit samples of tube and resin system for testing similar to that proposed for actual construction. Samples with and without plastic coating must meet chemical testing requirements.

Long-term Reduction in Physical Properties. Submit long-term creep data in accordance with ASTM D2990 for the manufacturer of the cured-in-place pipe product. Duration of creep testing to be a minimum of 10,000 hours.

Hydraulic Capacity. Submit calculations that support the cured-in-place pipe has at least 100% of the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the original pipe material. A typical roughness coefficient of the cured-in-place pipe to be verified by third party test data.

Cured-in-place Pipe Field Samples. To verify past performance, submit a minimum of 15 test results from previous field installations of the same resin system and tube materials as proposed for the actual installation. These test results must verify that the cured-in-place pipe physical properties have been achieved in previous field applications.

If glass fiber reinforcement is used, submit strain-corrosion testing in accordance with ASTM D3681.

3. Installation.

Install cured-in-place pipes in accordance with the guidelines of ASTM F1216, and as follows:

Clean pipe of all debris prior to installation of cured-in-place process. Satisfactorily dispose of removed material.

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Resin Impregnation. Use a sufficient quantity of resin for tube impregnation to fill the volume of air voids in the tube with additional allowances for polymerization shrinkage and the loss of resin through cracks and irregularities in the original pipe wall. Use vacuum impregnation process. Use a roller system to uniformly distribute the resin throughout the tube.

Do not insert absorbent layers of tube into the existing pipe without the layers being fully vacuum impregnated with resin.

Limit tube installation forces or pressures so as not to stretch the tube longitudinally by more than 5% of the original length.

Completely remove any bladders or tubes used to inflate the tube material against the original pipe that were not fully bonded to the tube material prior to insertion into the original conduit after cured-in-place pipe installation.

Dewater the existing pipe. This involves the elimination of any incoming water (infiltration of inflow) and the removal of standing water. Use stream diversion as detailed in the erosion and sediment pollution control plan. Any deviation from the erosion and sediment pollution plan must be submitted and approved by the project engineer and Department of Environmental Protection.

4. Inspection

Provide one cured-in-place pipe sample for each pipe size installed from a section of the cured-in-place pipe at the termination point that has been inverted through a like diameter pipe which has been held in place by a suitable heat sink, such as sandbags.

Test cured-in-place pipe samples in accordance with ASTM F1216.

Test for leakage during cure while under a positive head. Visually inspect cured-in-place pipe in accordance with ASTM F1216

3. CONTRACT REPRESENTATIVE

The Contractor shall assign one of its employees to serve as the Contract Representative. The Contractor's Contract Representative will be the Contractor's sole contact person designated to interact and communicate with the Department on all contract and work-related activities and issues.

The Contractor shall provide the Department with its Contract Representative's contact information including name, title, cell phone number, and email address.

The Contractor's Contract Representative shall have the authority to make all contract-related decisions. The Contractor shall notify the Department immediately, in writing, of any change involving the individual serving in this position.

The Contractor must complete and submit the attached Contractor Information Form (Attachment 2) to the PennDOT Purchasing Agent within 3 business days of notice of apparent low bidder status.

4. PRE-BID SITE INSPECTION

Pre-bid site visits will be arranged upon request. Please contact the Delaware County Maintenance Office to schedule a visit.

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A pre-bid site inspection is not mandatory; however, it will be assumed that the bidders have full knowledge of all existing conditions when submitting their bid. No additional compensation will be awarded due to unfamiliarity.

5. TERM OF PURCHASE ORDER

The initial validity period will start upon issuance of a fully executed purchase order and end in one (1) year.

6. OPTION TO RENEW

The Purchase Order has no renewal options.

7. OPTION TO EXTEND

PENNDOT reserves the right, upon notice to the Contractor, to extend the term of this purchase order for up to three (3) months upon the same terms and conditions, by providing the Contractor with written notice prior to the expiration of the contract and associated purchaser orders.

8. ESTIMATED QUANTITIES

All quantities are estimated, and the Department reserves the right to increase or decrease these quantities based upon need.

9. EXPERIENCE REQUIREMENTS

Contractors bidding on this contract must have a minimum of five (5) years' experience in cured in place pipe lining installation and have been in business a minimum of five (5) years.

Within three (3) business days of notification of apparent low bidder status, the Contractor must provide the PennDOT Purchasing Agent with written confirmation that the Contractor has the above-described business and pipelining installation experience.

10. PERMITS

PennDOT is responsible for acquiring any applicable permits for work that requires such permitted. The Contractor shall comply with all Federal, State, and Local Laws and Permit Requirements.

11. INVOICE AND BILLING INSTRUCTIONS

A completed OS-501, Confirmation of Services Form (Attachment 3) shall be submitted by the Contractor to the Project Manager or Designee for review and verification at the completion of the project. The form shall be itemized, include sufficient detail, and coordinate with the line items on the Purchase Order. The Project Manager or Designee will notify the Contractor if corrections are needed. Untimely or incomplete submissions of Form OS-501 may delay processing of a "proper invoice" as required by the Payment section of the Terms and Conditions.

Invoices shall be submitted by the Contractor monthly. For further instructions regarding invoicing, see the Billing Requirements section of the Terms and Conditions.

PennDOT reserves the right, throughout the life of the contract, to make changes to Forms OS-501, including their instructions, content, and all other requirements.

12. WORK REQUIREMENTS

- a) HOLIDAYS: No work shall be scheduled to occur on the following holidays unless written permission to do so is provided by PennDOT:

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1. New Year's Day
2. Dr. Martin Luther King Jr. Day
3. President's Day
4. Memorial Day
5. Independence Day
6. Labor Day
7. Columbus Day
8. Veteran's Day
9. Thanksgiving Day
10. Day after Thanksgiving Day
11. Christmas Day

Monday is recognized as a holiday for all holidays occurring on a Sunday, and Friday is recognized for all holidays occurring on a Saturday.

During times of inclement weather, or special events, the RPC or designee may postpone work until a more suitable time.

- b) **NON-COMPLIANCE:** If, for any reason, the contractor fails to comply with the requirements of the contract, Section 108.09 of PennDOT Specification Pub 408 will prevail, which said specifications are incorporated herein by reference hereto.
- c) **WATER FLOW CONTROL:** Contractor shall, where required, provide for the flow of water around the culverts where the repair work is being performed. The bypass shall be made by damming the line at the upstream end and diverting the water flow into an adjacent pipe barrel or by pumping.
- d) **CLOSED CIRCUIT TELEVISION (CCTV) INSPECTION:** Contractor will perform an inspection of pipe, both before and after installation, using an experienced person trained in locating breaks and obstacles by closed-circuit television. The inspection shall conform to NASSCO Pipeline Assessment Certification Program. The interior of the pipeline shall be carefully inspected to determine the location of any conditions which may prevent proper installation, and it shall be noted so that these conditions can be corrected. A videotape and suitable log shall be kept and given to the Department after completion of work.
- e) **UTILITIES:** In accordance with provisions of a Act 287-1974, as amended Act 187-1996, contractor shall identify and contact all utilities having existing aerial or underground facilities located within the limits of work to arrange for marking of the field locations of these facilities prior to performing any excavation, drilling, and/or driving. Contractor shall cooperate with affected utilities and/or municipalities in any necessary adjustment or relocation of their facilities.
- f) **OBSTRUCTION REMOVAL:** It shall be the responsibility of the Contractor to clear the line of obstructions such as solids, dropped joints, roots, or collapsed pipe that will prevent installation of the liner. If an internal inspection reveals an obstruction that cannot be removed by conventional cleaning equipment, then the Contractor shall notify the Project Manager. The Project Manager may delete the work or instruct the Contractor to make a point repair excavation to remove or repair the obstruction. Such excavation shall be approved in writing by the Project Manager and will be incidental to this work.
- g) **INFILTRATION CONTROL:** Contractor shall patch holes and fill voids in, and around existing pipe as required by the Project Manager. Areas of water seepage in the existing pipe shall be

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sealed off using a method approved by the Project Manager. Pools of water shall be removed; however, a dry surface is not required.

- h) CLEANING: Contractor shall clean the interior surface with a high-pressure water-blast sufficient to remove all materials on the surface of the existing pipe, and loose materials, and flush the debris from the pipe. Upon final inspection by the contractor and PennDOT the pipe shall be free of sand, dirt and all other materials that may impede the placement of the lining material.
- i) TRAFFIC CONTROL: All work zone traffic control, if needed, will be supplied by PennDOT.

13. PRE-SERVICE MEETING

A Pre-Service Meeting and/or Conference Call will be scheduled by the Project Manager or Designee after the purchase order is issued.

The Pre-Service meeting is an incidental item and will not be paid for.

14. PROPERTY DAMAGE AND REPORTING

The Department, regardless of the cause, is not responsible for any damages or losses to the work crew's personal property, or the Contractor's property.

The Contractor is responsible for damage to Department property caused by the Contractor's operations. Repairs to Department property caused by the Contractor's operations will be at no cost to the Department. Contractor shall repair all damage within five (5) business days of occurrence. If the Contractor does not repair damage caused by its employees within five (5) business days, the Department reserves the right to repair the damage and invoice the Contractor for the repair costs, or to short pay any outstanding invoices by a like amount.

Damage Reports: If Department property is damaged by the Contractor, it is to be reported to the Project Manager or designee within two (2) hours by telephone, and Contractor shall submit to a full report of the acts and extent of such damage in writing no later than the next business day.

Accident Reports: The Contractor shall comply with State of Pennsylvania, OSHA and other regulatory agency requirements for record keeping and reporting of all accidents resulting in death, trauma, or occupational illness. The Contractor shall provide a verbal and written report to the Project Manager or designee no later than the next business day.

15. FINAL INSPECTION

After the contractor notifies the PennDOT that the work was completed, the Project Manager or Designee will notify the Contractor of the time and date of the final inspection. The Contractor's Representative is required to attend this meeting.

16. STRATEGIC ENVIRONMENTAL MANAGEMENT PROGRAM (SEMP)

PennDOT has implemented a Strategic Environmental Management Program (SEMP) which established a compliance-based Environmental Management System (EMS) designed to ensure PennDOT is able to achieve and maintain regulatory compliance with local, State and Federal environmental. As part of SEM, the Commonwealth of Pennsylvania has established a Green Plan Policy that can be found at: www.penndot.gov

To access program requirements on the website

Type in 'SEMP' in search field and select the magnifying glass.

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Then select 'Pollution Prevention' and review site.

The Green Plan Policy is designed protect the environment, conserve resources, and comply with environmental laws and regulations.

The Contractor shall ensure that its personnel are aware of the Commonwealth of Pennsylvania's commitment to protecting the environment, are properly trained about the environmental impacts of their work and are competent (through appropriate work experience, job training or classroom education) to perform the work that they do.

PAY ITEMS

Item 1: Installation of a Cured-In-Place-Pipe (CIPP) on SR 0001

DESCRIPTION: This work will consist of installation of a cured-in-place pipe lining for a forty-eight (48) inch corrugated metal pipe that will include all labor, materials, tools, and equipment using ASTM F1216 Standards municipal qualified thermoplastic coated felt tube, and ASTM F-1216/D790 Standards Polyester resin CIPP lining system.

MATERIAL: All materials shall be Bulletin 15 approved and conform to the applicable ASTM F-1216 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube. CS-4171, Certificate of Compliance shall be submitted prior to placement.

SERVICE: This work will be in accordance with this statement of work and to complete the installation in place, including but not limited to labor, equipment, material, tools, excavation, cleaning, pipe liner, liner reinforcement, fittings, seals, specified joint system, filling embankment voids, backfilling, and restoration. Installation shall comply with the guidelines of ASTM F-1216, ASTM D-5813, ASTM F-1743, ASTM D-5199, ASTM D-5035, and ASTM D-790.

PAY ITEM, UNIT OF MEASURE: Linear Feet

Item 2: Installation of a Cured-In-Place-Pipe (CIPP) on SR 1022

DESCRIPTION: This work will consist of installation of a cured-in-place pipe lining for a forty-eight (48) inch corrugated metal pipe that will include all labor, materials, tools, and equipment using ASTM F1216 Standards municipal qualified thermoplastic coated felt tube, and ASTM F-1216/D790 Standards Polyester resin CIPP lining system.

MATERIAL: All materials shall be Bulletin 15 approved and conform to the applicable ASTM F-1216 Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube. CS-4171, Certificate of Compliance shall be submitted prior to placement.

SERVICE: This work will be in accordance with this statement of work and to complete the installation in place, including but not limited to labor, equipment, material, tools, excavation, cleaning, pipe liner, liner reinforcement, fittings, seals, specified joint system, filling embankment voids, backfilling, and restoration. Installation shall comply with the guidelines of ASTM F-1216, ASTM D-5813, ASTM F-1743, ASTM D-5199, ASTM D-5035, and ASTM D-790.

PAY ITEM, UNIT OF MEASURE: Linear Feet