

**TOWN OF WAREHAM, MA
SEA STREET AND SMITH AVENUE
SEWER SYSTEM REHABILITATION PROJECT
Contract #2020-001**

**Pre-Bid Conference Minutes
August 25, 2020 – 10:00A.M.**

Attendees:

See Sign-in Sheet

Discussion Items:

1. **Bids are due by 10:00 AM on Thursday September 10th, 2020 at the Town of Wareham Water Pollution Control Facility, 6 Tonys Lane, Wareham, where bids will be opened and read aloud.**

PLEASE NOTE THE BID DATE HAS BEEN CHANGED TO SEPTEMBER 10TH AT 10:00 A.M.

2. Bids must be accompanied by a Bid Bond in the amount of 5% of the Bid.
3. All questions concerning the Contract Documents must be submitted in **writing**, either by Mail or Email, to:

Guy Campinha
Town of Wareham
6 Tonys Lane
Wareham, MA 02571
Email: gcampinha@wareham.ma.us

All questions must be received by 4:00 PM on Monday September 3rd.

Addendum will be provided to bidders that will include minutes to this meeting, address questions, and identify any modifications.

4. All work under this contract shall be completed within **30** working days.
5. Contractor shall submit construction schedule within 14 days of the execution of the Contract.
6. The scope of work is as follows: CIPP line approximately 1,815 l.f. of 8 – 12 inch sewer pipe.
 - Furnish and install approximately 675 l.f. of 8-inch CIPP liner,
 - Furnish and install approximately 490 l.f. of 10-inch CIPP liner,

- Furnish and install approximately 650 l.f. of 12-inch CIPP liner,
- Epoxy line approximately 12 Manholes,

7. SPECIAL CONDITIONS:

COVID-19

This project is subject to and the **General Bidder is required to comply with the Commonwealth of Massachusetts Sector Specific Workplace Safety Standards for Construction Sites to Address COVID-19 dated May 18, 2020 (or as amended)** included as an attachment to Section 01069, Health and Safety Requirements

WORK HOURS

1. **The Contractor shall be required to complete all work within the 2020 calendar year. The Contractor shall be required to submit a proposed work schedule at the pre-construction, outlining his working operations to complete all work by December 31, 2020.**
2. Regular working hours are defined as 8 hours per day, Monday through Friday, excluding federal and state holidays, between the hours of 7:00 AM and 7:00 PM. The Contractor shall also abide by work hour restrictions set forth in or required under permits obtained by the Contractor or Owner in connection with the Project. Requests to work other than regular working hours shall be submitted to Engineer not less than 48 hours prior to any proposed weekend work or scheduled extended work weeks. Working outside regular working hours will be considered incidental and no extra costs will be provided.
3. The Sea Street work area along the marsh from Warr Avenue (manhole #1164) to Cottage Street (manhole #1158) and the Smith Avenue work area are tidally influenced from the Wareham River and manholes along/in the marsh area maybe under water at certain times. The Contractor is required to schedule his working operations accordingly.

POLICE WORK HOURS

The Contractor shall be required to provide police for this project and will be reimbursed under bid item #4. The Contractor shall be required to submit Police slips to the Engineer on a weekly basis.

Uniformed Traffic Police Details for construction shall be arranged as necessary through the Contractor. The number of traffic details necessary for work at each location shall be pre-determined by the Engineer and the Town of Wareham. If the Contractor feels he may require more officers than pre-determined for a particular operation, he must make this request to the Engineer (verbally or in writing) prior to arranging the details, or incur the cost of the additional details.

The Contractor shall be responsible for cancellation of police details at minimum of 24 hours before schedule start time in the event that the work is cancelled. The Contractor

will be held liable for all police detail expenses (4 hour minimum) resulting in failure to cancel police details in a timely manner.

CURED-IN-PLACE LINING

Due to the close proximity to wetlands, shellfish beds areas and other environmental concerns, **the Cured-in-Place (CIP) liner must be aquatic safe certified. The aquatic safe certification must be submitted along with the bid, see Section 02766**, Cured-in-Place Pipe Installation in Sewer Main for liner requirements. The monolithic system shall be continuously bonded to the interior of the pipeline

TEMPORARY BY-PASS OF SEWERAGE FLOWS

The Contractor shall be required to submit detailed by-pass plans and schedule to the Town/Engineer for approval. The plans and schedule are required to assist the Town in informing the residents and other Town groups of the ongoing project. Night Work – The Contractor shall note that night work maybe required in or near tidally influenced areas. Working at night will be considered incidental and no extra costs will be provided. Pumper trucks will be required to control sewerage flows around the work area. The use of temporary by-pass piping will not be allowed.

WORK IN PRIVATE/EASEMENT AREAS

The Contractor shall note that there are several areas in which proposed work will be located in private/easement areas. The Town of Wareham will be responsible to obtain all necessary permits and/or permission to entry the private/easement areas. The Contractor shall be responsible to restore existing property to original conditions.

BURIED MANHOLES

The Contractor shall note that there maybe existing sewer manholes that are currently buried that are located within the limits of work. The Town of Wareham shall be responsible to locate and unbury the manholes prior to the scheduled CIPP lining of the sewer main.

TOWN CONSERVATION

The Contractor shall be required to submit detailed plans and schedule to the Town/Engineer describing this method(s) for accessing the site and protection of the environment during CIPP lining and spraying of manholes operations for approval. Plans will show/describe how the Contractor intends to bring/remove his equipment to appropriate manhole to perform his operations and how he intends to protect the surrounding environment including providing mats, ramps etc. Any changes requested by the Town/Engineer to the Contractor plans will be considered incidental and no extra payment will be provided.

Any disturbance to the environment including walls, driveways, trees and ell grass in the opinion of the Town/Engineer shall be repaired/replaced to its original condition at the Contractor's own expense.

TELEVISION INSPECTION OF SEWER MAINS

The Contractor is required to provide a before and after internal television inspection video of the CIPP lined sewer main under the appropriate Bid Item 1.

Existing video inspection logs of the existing sewer mains and manhole inspection reports are located in the Appendix of these specifications. The tv inspection logs and manhole inspection reports are for informational purposes only.

STAGING AREA

The Town of Wareham will provide the Contractor with nearby staging area.

DEBRIS FROM THE SEWER

The Town will provide the Contractor with a location for the disposal of debris from the sewer.

HYDRANT USE

The Contractor can open and operate fire hydrants. No water meter will be required. The Contractor will be required to provide as estimate of water use to the Town. No backflow will be required if an air gap is provided.

CONTRACT SPECIFICATIONS

Please substitute Contract specifications Section 02766, Cured-in-Place pipe Installation in its entirety.

DISCUSSION AT PRE-BID MEETING

1. The Town of Wareham requires that the **CIPP liner be aquatic safe certified** and shall be **continuously bonded to the pipeline. The aquatic safe certification must be submitted with the bid.**
2. The Town mentioned it is anticipating that the Contractor will by-pass the entire work site at Sea Street simultaneously and have pumper trucks located at several key points. This allow the Contractor to clean the sewer mains only once during construction and provide the Contractor more time during his daily working operations.
3. The Contractor will be required to attend a public meeting with the local residents to explain his working operations.

Attachments:

1. CCTV tapes of the Sea Street area sewers – Given out at Pre-Bid Meeting
2. CCTV tv logs of the Sea Street area sewers – Given out at Pre-Bid meeting
3. Pre-Bid Sign-in Sheet
4. Contract Specification Section 02766, Cured-in-Place Pipe Installation

SECTION 02766

CURED-IN-PLACE PIPE (CIPP) INSTALLATION IN SEWER MAIN

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes

1. Requirements for reconstruction of pipelines by installation of resin impregnated flexible felt tube either inverted into the existing pipeline utilizing hydrostatic head and curing by circulating hot water to cure the resin composite or pulling the resin impregnated flexible felt tube into the existing pipeline utilizing a winch and cable or other approved method and using steam pressure to cure the resin composite.
2. The resin composite shall be cured into a hard, impermeable, structurally sound, continuous, tight fitting, water tight pipe within a pipe.
3. This specification covers work, materials, equipment and tools including specially developed application equipment as required for installation and testing of the unique cured in place pipe lining system – Warren Environmental Cured In Place Liner System (hereafter referred to as “WES-Cured In Place Liner”) or approved equal.
4. The use of specialized application equipment combined with rigorous surface preparation requirements shall be used to apply the WES –Cured in Place Liner products without the use of solvents.
5. Product application requirements and procedures described include surface preparation, mixing, application, material handling and storage, qualification of Applicator and application quality control.

B. Water for Construction

1. The Owner shall supply all water required by the Contractor for the CIPP curing process. The Contractor must coordinate acceptable supply locations and contact the Owner in advance prior to use of any water for the Project.
2. Drawing water from hydrants shall be coordinated with the Water Department.
 - a. The installation of a backflow preventer and meter is required at the water source. The Contractor shall pay Water Department directly for water usage.

C. Related Sections

1. Section 02149 - Maintaining Existing Flow
2. Section 02763 - Pipeline Cleaning
3. Section 02764 - Television Inspection

1.02 DESIGN REQUIREMENTS

- A. The cured-in-place pipe (CIPP) shall be designed for a Fully Deteriorated design condition in which it is assumed that the existing host pipe provides no structural support. The CIPP shall be designed to carry soil, groundwater, and other superimposed loads.
- B. The CIPP thickness shall be designed in accordance with ASTM F1216 under the following conditions:
- | | |
|---|--|
| 1. Fully deteriorated gravity pipe: | Pipe diameters and material type per Contract Drawings |
| 2. Height of ground water above invert: | Assume at ground surface level |
| 3. Height of soil above top of pipe: | Per Contract Drawings |
| 4. Live load: | AASHTO HS-20 |
| 5. Soil Density: | 120 lbs/cubic foot |
| 6. Ovality: | 2% to 8%, as applicable per Contract application |
- C. The CIPP design will assume no bonding to the original pipe.
- D. Hydraulic Capacity - The hydraulic cross-section of the original pipe shall be maintained as a much as possible. The completed CIPP shall provide a minimum of the full flow capacity of the original pipe before rehabilitation.

1.03 SUBMITTALS

- A. All submittals shall be submitted in accordance to the applicable portions of these specifications.
- B. Qualification and Performance Responsibility of Applicator:
1. The Applicator shall apply the system and be responsible for the complete performance of the system, including cured in place liner materials, application and quality control.
 2. Applicator shall provide documentation as follows:
 - a. A list of at least 3 past clients, including names and telephone numbers, to verify previous satisfactory performance on projects of similar or greater size and difficulty factor in the last 5 years.
 - b. The cured in place liner manufacturer shall provide at least five previous installations of the product including installation dates, description of work performed, contact names and telephone numbers.

1.04 SAFETY REQUIREMENTS

- A. Perform all work in strict accordance with applicable OSHA standards. Particular attention is drawn to those safety requirements involving working with scaffolding and entering confined spaces.

1.05 SCHEDULING

A. Notification

1. Notify all wastewater generators serviced by the sewer main being lined and when the sewer will be off line.
2. Notification to such generators shall be done one week and again at 24-hours prior to the scheduled installation of the liner.
3. Notification shall be done in writing and include contact telephone number.
4. Coordinate schedule with the Owner/Engineer.

1.06 WARRANTY

- A. During the one (1) year Warrantee Period any defects, which may or has affected the integrity and/or strength of the pipe shall be fully repaired at the Contractor's expense, in a manner approved by the Owner/Engineer.

1.07 QUALITY ASSURANCE

- A. Applicator shall initiate and enforce quality control procedures consistent with applicable industry standards together with Warren Environmental, Inc. and the Engineer's recommendations.
- B. Applicator shall use an adequate number of skilled workmen who are thoroughly trained and experienced in the necessary crafts. These workmen shall be completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section. The job Foreman shall have a minimum of seven years experience.
- C. Applicator shall use approved specialty equipment adequate in size, capacity and number sufficient to accomplish the work of this Section in a timely manner.

1.09 DELIVERY, STORAGE, AND HANDLING

- A. Materials are to be kept dry, protected from weather and stored under cover and stored between 50 deg F and 90 deg F. Do not store near flame, heat or strong oxidants.
- B. Protective cured in place liner materials are to be handled according to their material safety data sheets.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Inversion or pull-in-place process and materials shall be by Warren Environmental, Inc., P.O. Box 1206, Carver, MA 02330 Telephone (508)947-8539.; or approved equal.

2.02 MATERIALS

- A. Warren Environmental 501-SL Epoxy is to be used with a hybrid material composite, such as Aqua Cure RP or Approved Equal liner tube and impregnated with an 100% solids, non-toxic, solventless epoxy resin laminar system as applied with the patent protected process of Warren Environmental, Inc. which can be pulled into place or inverted in order to accommodate bends or an increase or decrease in pipe size, and exhibiting the following characteristics.

Epoxy System Characteristics:

Product type	amine cured epoxy
Color	Clear
Solids Content (vol %)	100
Compressive Strength	ASTM D695 16,903 psi
Tensile Strength	ASTM D638 6,223 psi
Tensile Elongation	ASTM D638 4.7%
Flexural Strength	ASTM D790 8,731 psi
Flexural Modulus	ASTM D790 482,688 psi
Shore D Hardness	88

Safe for Aquatic Life Forms ASTM E729 Acute Marine Toxicology

Epoxy System Characteristics with Aqua Cure RP or Equal

Tensile Strength	ASTM D638 3,000 psi
Flexural Strength	ASTM D790 5,000 psi
Flexural Modulus	ASTM D790 600,000 psi
Long Term Strength Retention	50%

- B. The monolithic surfacing system shall be continuously bonded to the interior of the pipeline.
- C. **Due to the close proximity to wetlands and shell fish, the cured in place liner must be aquatic safe certified.**
- D. When cured, the lining system shall form a continuous, tight-fitting, hard, impermeable surfacing that is suitable for sewer system service and chemically resistant to any chemicals, bacteria or vapors normally found in domestic sewage or recycled plant water.
- E. The system shall effectively seal the interior surfaces of the pipe line and prevent any penetration or leakage from the pipe.

- F. The system shall be compatible with the thermal conditions of the existing sewer pipe line system.

2.03 CURED IN PLACE LINER APPLICATION EQUIPMENT

- A. Specially designed water or steam inversion equipment for use in the cured in place liner inversion application of the specified system approved for use by the cured in place lining system manufacturer as developed by Warren Environmental, Inc. Or Equal.

PART 3 EXECUTION

3.01 EXAMINATION

- A. All pipes to be lined shall be readily accessible to Applicator.
- B. Appropriate actions shall be taken to comply with local, state and federal regulatory and other applicable agencies with regard to environment, health and safety.
- C. Active flows shall be dammed, plugged or diverted as required to ensure that the liquid flow is maintained outside of the pipe.
- D. Installation of the cured in place liner shall not commence until the pipeline has been inspected by closed circuit TV and properly prepared for lining in accordance with the product supplier's recommendations.
- E. Verify all lengths between manholes, sewer depths and service connection locations prior to insertion of the liner.

3.02 PREPARATION

- A. Applicator shall inspect all surfaces specified to receive the cured in place liner system prior to surface preparation. Applicator shall notify Owner of any noticeable disparity in the surfaces that may interfere with the proper preparation or application of the cured in place lining system.
- B. Surface preparation method(s) shall be based upon the conditions of the substrate and the requirements of the cured in place lining system to be applied.
- C. On concrete pipelines quick setting high strength concrete surfacing agents with latex or curing agent additives cannot be used. Proper surface preparation procedures must be followed to ensure adequate bond strength to any surface to be coated. New cement must cure at least 30 days prior to coating.
- D. Existing coatings should be removed or thoroughly abraded to provide adequate surface profile for mechanical bond by the new system. Applicator is to maintain strict adherence to the cured in place lining system manufacturer's recommendations with regard to proper surface preparation and compatibility with existing coatings.

- E. Surfaces that require additional cleaning or profiling will be prepared by abrasive blast to rough the surface sufficient to obtain and ensure adequate bonding of the system. A minimum surface profile of 1-1.5 mils must be achieved to assure proper adhesion. Detergent water cleaning and hot water blasting may be necessary to remove oils and grease from the substrate. Whichever methods are used, they shall be performed in a manner that provides a uniform, sound clean surface that is not excessively damaged.
- F. All standing water must be removed from the pipe.
- G. Cleaning Pipelines shall be in accordance with Specification Section 02763 with the following additional requirements.
 - 1. Remove all internal debris from the pipe line prior to inserting the liner utilizing any one or combination of rodding machines, high velocity water jet machines, hydraulically propelled machines, etc.
 - 2. Selection of the equipment used shall be based on the condition of the existing pipeline at the time the work commences.
 - 3. Methods to be approved by the Owner/Engineer.
 - 4. Debris resulting from the cleaning operation shall be removed from the downstream manhole of the section being cleaned.
 - 5. Passing debris from one manhole section to another will not be permitted.
 - 6. The Contractor shall remove all debris from site during the cleaning operation.
 - 7. Based on closed circuit television inspection, the Owner/Engineer shall be the sole judge for any final acceptance of the completed pipeline cleaning. Specific areas of pipeline, which have not been cleaned to the satisfaction of the Owner/Engineer shall be re-cleaned and re-inspected as necessary at the Contractor's expense.
- B. Inspection shall be in accordance with Specification Section 02764 with the following additional requirements.
 - 1. Using a "pan & tilt" camera, closed circuit television inspections shall be performed by experienced personnel trained in locating breaks, obstacles and service connections, using equipment specifically designed for this purpose.
 - 2. Perform a "Before" CIPP liner installation inspection of the pipeline to locate any conditions which may prevent proper CIPP installation into the existing pipeline, and locate and document all existing sewer service lateral connections for future reinstatement.
 - 3. Perform an "After" CIPP liner installation inspection to inspect the final pipeline condition and confirm the reestablishment of all sewer service connections. Log the location of conditions requiring correction.
 - 4. Provide Two (2) copies of the DVD's and TV inspection logs to the Owner and the Engineer for record and future reference.
- C. Pumping and flow bypassing

1. Supply the necessary pumps, conduits and other equipment to divert the flow of sewage around the pipeline section in which work is to be performed.
2. Handling existing sewage flows and bypass pumping shall be in accordance with Specification Section 02149.

D. Flow Control Precautions

1. Whenever flows in a sewer line are blocked, plugged or bypassed, sufficient precautions must be taken to protect the sewer lines from damage that might be inflicted by excessive sewer surcharging.
2. Further, precautions must be taken to ensure that sewer flow control operations do not cause flooding or damage to public or private property being served by the sewers involved.
3. Coordination with private property owners is required.

E. Line Obstructions

1. Clear lines of obstructions such as solids, dropped debris, protruding service connections, pieces of pipe, or other obstructions that may prevent normal installation at no additional cost to the Owner.

3.03 INSTALLATION

A. Staging Area

1. Designate location where the tube will be resin impregnated prior to installation.

B. Inspection

1. Allow Owner/Engineer to inspect all operations involved with television inspections, as well as installing and curing the liner.

C. Installation

1. All surfaces shall be sufficiently smooth and even, to ensure good flow handling characteristics when complete.
2. Liner will be installed via water or air inversion, or pulled into place depending on jobsite conditions.
3. Liner must be restrained during the inversion process and held at constant pressure
4. Pulled in Place liners will be inflated using a continuous calibration hose provided by the CIPP system Manufacturer

D. Curing

1. After installation is complete, apply steam or heated water for the curing process.
2. Fit the heat source with suitable sensors to monitor the temperature of the curing medium. Fit another sensor between the impregnated tube and the pipe invert at the termination to monitor curing temperature.

3. Uniformly raise the temperature to a level required to effectively cure the resin as determined by the resin/catalyst system employed.
4. Liner must be cured at constant 200 degrees Fahrenheit for 3 hours with steam or hot water or a combination of the two
5. Maintain temperature of the curing medium in tube to the temperature required in accordance to the resin manufacturer's instructions.
6. Initial cure deemed complete when inspection shows exposed portions of the tube to be hard and sound and remote temperature sensor indicates temperature is of a magnitude to realize a cure in the resin.
7. Continue cure period as recommended by the resin manufacturer, as modified for the installation process.

E. Cool Down

1. Cool hardened pipe in accordance with resin manufacturer's requirements.

F. Finish

1. Cut new pipe at suitable location in manhole.
2. The finished pipe shall be continuous and watertight over the total length of the run, and be free from defects, foreign inclusions, dry spots, pin holes, lifts and delaminations.
3. Remove and replace defective areas.

G. Sealing Pipe at Manhole

1. If due to existing broken or misaligned pipe at the manhole wall, the new pipe fails to make a tight seal, a seal shall be applied using a resin mixture compatible with the pipe.

3.04 SEWER SERVICE LATERAL CONNECTIONS

- A. After the new pipe has been cured-in-place, reestablish all existing active service lateral connections to no less than 95% of the existing pipe diameter at the locations recorded on the DVD's and TV inspection logs.
- B. Reestablish service lateral connections without excavation, and in the case of non man entry pipes, from the interior of the pipe by means of a television camera and remote controlled cutter specifically designed for this purpose.
- C. Openings shall be rough cut then edges ground smooth, conforming to the existing opening.

3.05 FIELD QUALITY CONTROL

A. Site Tests

- 1) A final visual inspection shall be made by closed circuit TV inspection.

- 2) Any deficiencies in the finished system shall be marked and repaired according to the procedures set forth herein by Applicator.
- B. The system may be put back into operational service as soon as the final inspection has taken place.
- C. Final Inspection and Acceptance
 1. Provide the Owner and Engineer each with two (2) properly labeled DVD's and corresponding TV inspection logs containing a complete record of the televised internal pipe inspection demonstrating Contract compliance of the completed work, corrected conditions and reestablished sewer service lateral connections.

3.06 CLEANING AND SITE RESTORATION

- A. Upon acceptance of the CIPP installation and any testing associated therewith, restore the project area affected during the operation to a condition at least equal to that which existing prior to the work. Trash and loose debris shall not be permitted to accumulate at the project site. All items shall be regularly removed and disposed of at an approved site in accordance with applicable regulatory agencies.

END OF SECTION